

Expansive Learning in the Genre-based Framework of Medical English Instruction:

An Intervention Study Informed by Critical Needs Analysis

YANG, Miao

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of
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Thesis/Assessment Committee

Prof. Evelyn Yee Fun Man (Chair)

Prof. Icy Kit Bing Lee (Thesis Supervisor)

Prof. Angel Mei Yi Lin (Thesis Supervisor)

Prof. Hin Wah Wong (Committee Member)

Prof. John Flowerdew (External Examiner)

Abstract of thesis entitled:

**Expansive Learning in the Genre-based Framework of Medical English Instruction:
An Intervention Study Informed by Critical Needs Analysis**

Submitted by YANG, Miao

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This thesis borrows insights from various theoretical trends, including critical theories, activity theory, particularly expansive learning theory, and genre-based pedagogy (GBP), to formulate a triadic theoretical framework to explore possible improvements in the instruction of medical English (ME) in EFL (English as Foreign Language) contexts. The research aims at answering the key research question regarding the ways in which genre-based pedagogy, informed by critical needs analysis, transforms Medical English instruction and leads to expansive learning. There are three sub-questions that deal with the three-folded research purposes, namely investigation, critical analysis, and transformation, which comprise a unique way to conduct a critical needs analysis of medical students' English learning needs.

The research was conducted in two stages in a medical college in China. The first stage involved critical analysis of medical students' English learning needs through questionnaire survey, classroom observations, focus group discussions, and interviews among medical students in different grades, teachers, and medical doctors (N =696). The second stage was an intervention case study with 46 first-year medical students, using GBP in their medical English class and collecting data through questionnaire surveys, classroom observations, focus discussions, and interviews.

A comprehensive investigation of the medical students' English learning needs in the investigated context reveals that the medical students' English learning needs are perceived differently by different parties. As the students proceed in their academic study, their perceptions change from an initial need to pass examinations, to the need to acquire subject knowledge through English, and finally to the need to conduct

academic activities, thus indicating the necessity to take a developmental view of their English learning needs and consider these needs in designing the ME course instead of imposing the course on students externally. The teachers of the medical college identify the medical students' English learning needs from the practical, academic, and utilitarian perspectives. They suggest implementing language policies that suit the students best according to the real needs in the Chinese contexts and the students' personal desires. But those in the collegial administrative posts tend to over-stress the importance of learning English despite the pre-dominantly resistant attitudes expressed by the students towards English learning.

In the various activity systems in which these parties mainly involved, English is perceived as an examination tool, a linguistic tool, or an administrative tool, hence we find contradictions at different levels. GBP was introduced into the ME class in the form of boundary-crossing actions between the researcher and the ME teacher. The GBP-mediated expansive learning has been explored in three observational dimensions: the vertical development as displayed by the medical students' reconceptualization of their object of English learning, namely their English learning needs; the horizontal development as displayed by the boundary-crossing learning of the ME teacher and the researcher; and the teacher and the students' concept formation of genre and GBP as an indication of developing both vertically and horizontally.

Resulting from the intervention instruction, new teaching/learning tools were formed, new values were attached to learning English, new understanding of the objects of the ME course were developed, and new identities emerged. The introduction of a new mediating tool (i.e. GBP) had led to changes in the other components of the ME class activity system and finally transformed it into a culturally more advanced one, with shared object perceived by all subjects, new conceptual tools (e.g. the new values of English learning), new quality of the subjects (i.e. enhanced ability in ME learning/teaching), and new responsibility towards learning (the division of labour).

Based on the findings of the research, the thesis argues for a renewed GBP-mediated expansive learning model to observe learning happening in the GBP framework. In spite of the inevitable weaknesses of the research, it seems clear that further research is essential in areas such as interscholastic needs analysis, genre-based medical English course development, and teacher collaboration.

醫學英語課堂上文體教學法帶來的擴展式學習： 由批判性需求分析引發的干擾性研究

本論文借用了批判論、活動論（尤其是擴展式學習論）和文體教學法探討在英語作為外語的學習環境下如何改善醫學英語教學。主要研究問題是如何以批判性的學習需求分析的結果為基礎，運用文體教學法來改變醫學英語課堂教學，從而產生擴展式的學習效果。本研究共有三個目的：調查英語學習需求、進行批判性分析、以及改革現狀，從而對醫科學生的英語學習需求進行了一次獨特的批判和分析。研究在一所中國大學的醫學院分兩個階段進行：一是通過對約 696 名醫科學生、醫學教師和醫生的問卷調查、課堂觀察、焦點小組討論和訪談對中國醫科學生的英語學習需求進行全面的批判性分析；二是在一個醫科七年制的班級裏（共 46 人）使用文體教學法教醫學英語，進行干擾性的個案研究。

學習需求分析的結果顯示不同的人群對醫科學生的英語學習需求有不同的理解。在學生當中，學生對英語學習需求的理解隨專業學習程度的提升而產生變化，低年級學生主要認識到英語在考試中的重要性，然後逐漸意識到通過英語獲取專業知識的重要性，到了高年級，他們才領會到英語在學術活動中的重要性。這說明了對學生的英語學習需求應該動態地理解，並且在設計醫學英語課程的時候考慮到他們在不同時期不同的需求。從醫科教師的角度看，中國醫科學生學習英語有三大需要：完成學業和就業的實際需要、發展專業的學術需要、以及個人事業發展的功利需要。他們建議學校在制定英語政策時應符合中國國情、尊重學生的個人意願。但是研究也發現部分行政人員一味強調學習英語的重要性而罔顧學生對英語學習的抵制情緒。

從活動論的角度看，對學生英語學習需求的不同理解源自於不同人群所在的活動系統。因為把英語當成不同的工具（如考試的工具、語言的工具和行政管理的工具），醫學英語的活動系統產生了不同層次的內在矛盾。為解決部分矛盾，研究者通過和一位醫學英語老師的跨界合作，將文體教學法帶入醫學英語課堂，由此引發的擴展式學習可以從三個維度觀察：學生改變了對英語學習需求的看法（縱向）、研究者和醫學英語老師的跨界學習（橫向）、以及醫學英語老師和學生對文體的概念形成（縱向和橫向相結合）。干擾性的研究結果是形成了新的教授和學習醫學英語的工具，更新了英語教學和學習的價值觀，也產生了新的身份認同。

以這些研究結果為基礎，本研究提出一個文體教學法引發的擴展式學習的研究模式，用以觀察文體教學中產生的學習行為。雖然本研究難免有其不足之處，但其對進一步做跨校的英語學習需求分析、發展文體醫學英語課程以及研究教師合作等提供了寶貴的借鑒意見。

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Chapter 1: Introduction

Introduction

The present research is motivated by a strong feeling of dissatisfaction with the current situation of EMP (English for Medical Purposes) instruction in mainland China. As a teacher of English in a Chinese medical college, I found that like the current practice in other areas of ELT (English language teaching) in China, the EMP course is guided by the governmental and the institutional mission to promote English learning, while the visions and voices of the students and teachers are somewhat overlooked. Teaching EMP seems to have been marginalized and has not enjoyed a high status. Efforts towards developing EMP education and research are isolated and weak. My previous English teaching experiences among medical students for nearly 16 years have prompted me to reflect on why and how English should be taught for future medical professionals who are likely to establish their career mainly in the socio-cultural context of China, although they would, at the same time, inevitably have to gain more and more internationalized and global perspectives on their career development. This research was carried out in a medical college in southeast China, where my role was not only one of an outside researcher conducting the investigation but also an inside language teacher carrying out interventional instruction. The purposes of this research are three-fold:

- a. To investigate the English language learning needs for medical students in the Chinese context;

- b. To analyze possible gaps of perceptions between different stakeholders involved in the instruction of medical English course through a critical needs analysis;
- c. To explore the possibility and effectiveness of changes brought about by genre-based teaching and learning in the medical English course

The purpose of this first chapter is to provide a summary of the whole thesis so as to establish a foundation for the reader to read the thesis and to understand the “what” (what objectives the research aims at), “why” (why these objective are important), and “how” (how these objectives are achieved) of the research. This chapter provides an overview of the research by outlining the practical and theoretical rationale of the research, introducing the research questions and research design, and discussing its significance. It ends with an introduction of the thesis structure which serves as a reading guide.

1.1 Research Background

The research background is introduced from two perspectives: the practical and the theoretical. The former makes use of the EMP education and research situation in China and the insights of my previous teaching experiences, while the latter draws on a systematic review of the available literature.

1.1.1 Practical Rationale

The practical rationale of the present research is discussed in two subsections: (1) how EMP is taught and researched in China and (2) how the researcher’s English teaching experience in a medical college stimulates and shapes the present research.

1.1.1.1 Teaching and Researching English for Medical Purposes in China

In China, the development of EMP (or Medical English, as is commonly referred to in China. Hereafter in this thesis ME) has never been an independent enterprise. Indeed its fate has been unavoidably tied with ELT curricular innovations. Teaching ME may be seen as a marginalized enterprise, even though the 1985 national English syllabus clearly stipulates the importance of academic English. The late 1999 saw more and more medical universities setting up subject courses that were taught either in English only or bi-lingually i.e. both in English and Chinese. But the textbooks adopted for the ME course still have the flavour of reference books (Maher, 1986b). And in the Chinese context, the ME course is commonly taught by medical subject teachers, most of whom neither have enough linguistic knowledge nor speak fluent English (Li, et al., 2007).

In China, research on ME has been rather limited both in scope and research methodologies. There are three missing perspectives that disable the ME research in China to keep pace with the research outside China. These missing perspectives are: a) the *socio-cultural* perspective that helps us see the interrelated relationships between the medical students' learning behaviors and desires situated within the larger contexts which have been shaped, and are being shaped by the constantly changing social, economic, and political situations in China; b) the *critical* perspective that can look into the problems and conflicts brought about by the seemingly neutral and beneficial-to-all educational reforms and as a result initiate

transformation through research; c) the *empirical* perspective that persuades and encourages researchers to take the responsibility of conducting curricular research at the grass-root level so that the gap between the national policies and local needs can be effectively bridged. The present research views these missing perspectives as the most important conceptions in conducting EMP research.

1.1.1.2 The Dilemma of an English Teacher in a Medical College

As mentioned at the outset, my interests in the present research area also originates from my personal teaching experience in the context investigated ---- a medical college of a university located in Southeast China. I have been working as an English teacher for nearly 16 years in this context. My professional activities have been centred on general English instruction and the enigma of medical English has held me in awe. Twice I had been assigned to teach ESP courses, though whether they were ESP courses or not remain outside the scope of this research. Let me outline a few details of somewhat awkward teaching experiences in order to further exemplify the nature of the research context.

In 2002, I taught scientific English to a group of second-year medical students. There was no prescribed textbook and I had to rely on reading materials collected from books on popular science. To arouse the students' interest, I also used video programs on human body structures (e.g. brain and cells) from the Discovery Channel. The class was big with almost 150 students and any interactional activities were doomed to fail. The course lasted for 15 weeks and ended with a piece of imaginative writing

on traveling in space-time.

In 2005, a short-term medical English course was assigned to me at short notice – I knew about the course only 2 weeks before it began. There was no syllabus and the objectives of the course were not clarified. This time a textbook, Basic Medical English, published by a Chinese publishing company was adopted. There were 10 chapters of reading texts accompanied by comprehension questions and vocabulary exercises. The reading texts dealt with common issues in medical practice, such as the prevention of Aids or the ethics of euthanasia. The class was even bigger than the previous one described above, with 180 third-year medical students. But the course was much shorter: 8 hours in total. I printed some texts for the students (they didn't have the textbooks.) and used the materials mainly as reading exercises. Occasionally I drew the students' attention to the formation of medical terms if there were any in the texts. The course ended with no learning assessment or course evaluation.

In both the cases there was no discussion of course design between the college administration and the instructor (me), neither did the college seem concerned about what the students had learnt from the courses. The college was apparently satisfied with such a situation. One surmised that all was well as long as there was a teacher teaching the course and students required to be present in the class. Central aspects in curriculum design, such as needs analysis, syllabus design and course evaluation, were totally neglected.

I have provided two instances when I was put into a somewhat embarrassing position

as I was pretending to be an expert in a field where my expertise was dubious. The dilemma led me to consider a few basic questions, such as: (1) What did the students expect from me as an English teacher? (2) What did they really want to learn from the courses? And, more fundamentally, (3) what does learning English mean to university learners, especially in contexts where English is not likely to be used as the students' first language within the professional domain, even though the state, the employers, and the larger society (including parents and principals) seem to demand that students acquire English for socioeconomic reasons (Lin, in press)?

The above and my collective teaching experiences direct my reflections towards the motivational factors behind curriculum design. Fullan (1993) states that changes in *teaching materials, methodological skills, and pedagogical values* constitute the core dimensions of teaching and learning. But, in my context, and I assume in many other teaching contexts in China, these core dimensions of teaching and learning are not taken into consideration before a course is scheduled and assigned. To change this situation, we have to trace back to the very fundamental questions raised by curriculum designers pertaining to (1) the objectives of a course; (2) the needs satisfied by the course and (3) the means by which the needs can be satisfied. Needs analysis, though an age-old issue in curriculum design, has never been given any importance in the Chinese curricular context.

1.1.2 Theoretical Rationale

This subsection aims to provide the reader with a preliminary introduction to the

theoretical rationale of the present research. I first discuss the critical stance that has been brought into the research of English language learning (ELT) in general and English for Specific Purposes (ESP) in particular. I then draw the reader's attention to Activity Theory and Expansive Learning Theory in order to illustrate how needs analysis has been conceptualized within these new theoretical perspectives. Genre-based Pedagogy (GBP) is then introduced as the candidate of mediator within the framework of expansive learning where the mediator can help transform learning activities and reconceptualize learning needs. Finally, a triadic theoretical framework based on these theoretical stances is presented.

1.1.2.1 The Critical Stance in English Language Teaching and English for Specific Purposes

English language teaching (ELT) used to be treated as neutral, i.e. free of ideologies and values, despite the fact that knowledge of language education originates in the west and inevitably reflects western ideologies (Pennycook, 1994b; Holliday, 1994; Ramanathan, 2005). In fact the English language classroom is a site of cultural politics, a place where different versions of how the world is and should be are struggling. ELT practice should be regarded as both cultural and political (Pennycook, 1994b). In the last two decades, the influences of globalization have led to changes in ELT practices and raised the awareness that socioeconomic and sociopolitical considerations in both global as well as local contexts have to be considered in ELT practice (Belcher, 2004; Canagarajah, 2005).

In a similar vein, English for Specific Purposes (ESP) seems to have been treated as neutral, pragmatic and instrumental in achieving academic success. It is needs-based and learner-centred, with the major aim of accommodating students within the content and pedagogy of mainstream academic classes. But the ideological issues that are inevitably involved in language education points to the fact that the pragmatic stance is problematic. To avoid ideologically free and pragmatic conceptualization of ESP, a critical approach is also suggested in ESP research to connect the neutral, academic language with the social, political, and economic world outside the classroom and outside the boundaries of both specialisms and nations in the current climate of globalization (Benesch, 1993; Pennycook, 1997; Widdowson, 1998). Such a critical stance denies the traditional practice of treating needs analysis as a neutral and objective process in which existing conditions are identified for the students to adapt to. Rather, it advocates the acknowledgement of existing forms, including power relations, while searching for possible areas for change. In this sense, the objectives of critical needs analysis are three-folded: to describe, to criticize, and to transform.

Within the field of ESP, sustained efforts have been made in English for Medical Purposes (EMP) research because the domination of English in medical research and publication has led to the increasing use of English in non-English-speaking contexts (Maher, 1986a; Giannoni, 2008). The EMP research interests have shifted from linguistic features to interactional processes, from single focus on needs analysis or teaching methodology to a more general view of EMP curriculum development. But

for half a century, EMP research has still remained specialist-dominated and vocabulary-focused. There are inadequate sociocultural description of learning needs and exploration of its dynamical role in curricular innovations. The research gap lies in how to connect the words of the medical domain, i.e. the way English is used in medical domain, with the world in which medical practitioners work and survive.

1.1.2.2 Learning Needs as Object of Learning Activity Systems

An important approach, embraced by this research, has been to fill the research gap in EMP by conducting critical needs analysis in the Activity System framework. Theoretically rooted in the sociocultural theory of mental development by Vygotsky (1978 & 1981), Activity Theory considers human activities to be tool-mediated and goal-directed. It provides a new theoretical perspective for needs analysis. From this perspective, learning is conceptualized as happening in an activity system in which learners (subject), mediated by tools (physical tools such as teaching materials, language lab and conceptual tools such as learning skills and strategies), and constrained by rules (such as the institutional requirements to pass an exam or to take a compulsory course) in a community, are motivated toward the solution of a problem or purpose (object). Learning needs are the object of this learning activity system that motivates learning.

An activity system is also a community of multiple points of view, traditions and interests (Engestrom, 2001a). This multivoicedness is reflected in needs analysis. The different perceptions of learning needs by different parties are actually the

objects of the various activity systems in which these parties are involved. Therefore, needs analysis is not only concerned with the information that will serve as the basis to develop a curriculum for a particular group of students (Dudley-Evans and St John, 1998), as it is meant in a general sense, but with a series of interacting activity systems that produce the information which implies how learners are facilitated and constrained in these systems and what contradictions are generated.

1.1.2.3 Critical Needs Analysis as Process of Expansive Learning

Literature in sociocultural theories of learning, and, specifically, Activity Theory, points to a new way of researching learning behaviors and this is known as the expansive learning theory. Expansive learning is a historically new type of learning which emerges as practitioners' struggles through developmental transformations in their activity systems (Engestrom, 1987; 1999). It is multi-dimensional collective transformation of activity that follows a general process of stepwise formation and resolution of internal contradictions (Engestrom, 2001a). Specifically, expansive learning may take the form of concept formation and boundary crossing. The former refers to the process of developing the understanding of an abstract, simple and theoretical concept into a concrete and complex object and a new form of activity. The latter is a new form of inter-disciplinary collaboration during which people from different academic fields cross the disciplinary boundaries to achieve a new form of practice with the help of new conceptual tools.

In this sense, critical needs analysis can be conceptualized as the process of expansive learning beginning with the questioning and analyzing of the object (learning needs) of the current learning activity system, followed by the formulation and implementation of new mediational tool (a new concept, model, or methodology), and concluding with reconceptualized and transformed object in a culturally more advanced activity system.

1.1.2.4 Genre-Base Pedagogy as Mediator of Expansive Learning

In seeking a new conceptual tool to mediate the expansive learning in critical needs analysis, the present research draws on the strengths of GBP. Rooted in genre theories and developed and practiced in both school and university contexts by different schools of genre studies, GBP stands out as a good choice of tool, or teaching methodology, to generate changes in EMP classrooms. It refers to the teaching practices that offer learners explicit understanding of how texts in target genres are structured and why they are written in the ways they are. GBP has an ultimate aim of achieving a consciousness to manipulate language choices by learners (Hyland, 2003).

The reasons why GBP is used in the present research as a new mediating tool in the ME class can be summarized as follows (for more detailed explanations see Section 2.6.3)

- ◆ GBP is an immediate candidate to facilitate the ME course in the present research by providing the medical students opportunities to learn the genres of

their community of practice and benefit from the multiple aspects of genre learning, such as the development of generic competence¹ (Bhatia, 1993) and genre knowledge² and the access to powerful forms of language in the community of practice.

- ◆ GBP introduces the use of English in target situations in students' future career, and in so doing helps to raise their awareness of the academic needs pertaining to English.
- ◆ GBP provides teaching techniques to fill a gap in the EMP practice within the investigated context where the medical English teachers are medical subject teachers with little knowledge about language teaching methodologies.
- ◆ GBP, reconceptualized in the Activity Theory framework, can be an important conceptual tool to mediate the EMP instruction, bring about learning not just about the use of language, but also about new understanding of the motives and identity as the students become more and more involved in the activities of their community of practice.

But, so far, research on genre-based learning has focused more on the language-based learning such as the linguistic awareness of generic features in reading and writing, and somewhat lesser level of focus is apparent on the cognitive, affective, and critical aspects of genre-based learning. How the expansive learning happens and how it can be evaluated become issues of interests in the present research.

The present research draws insight from expansive learning theory to formulate a GBP-mediated expansive learning model, in which three dimensions of observation

¹ By "generic competence", Bhatia (1993) refers to the students' ability to participate in and respond to new and recurring genre as apart of the discourse community.

² According to Paltridge (2001), genre knowledge includes the knowledge of the textual features of a genre, the knowledge of the culture, circumstances, purposes, and motives of the particular setting that produces a genre, the knowledge of how the social and cultural contextual factors impact the language choice of a genre, and the knowledge of what one can appropriately talk or write about in these contexts.

can be conducted to evaluate the expansive learning that is likely to happen in the genre-based instruction, namely the horizontal dimension of boundary crossing between the activity system of the ESP course and that of the general English course, the vertical dimension of the students' reconceptualization of English learning needs --- the object of their learning activity system, and the diagonal dimension of concept formation of GBP on both the part of the ME teacher and the students as the ME teacher's individual learning action of mastering GBP is transformed into the collective learning activity of his/her students (See Figure 1.1, which will be repeated as Figure 2.12 as more details will be added once an in-depth introduction is given in Chapter 2).

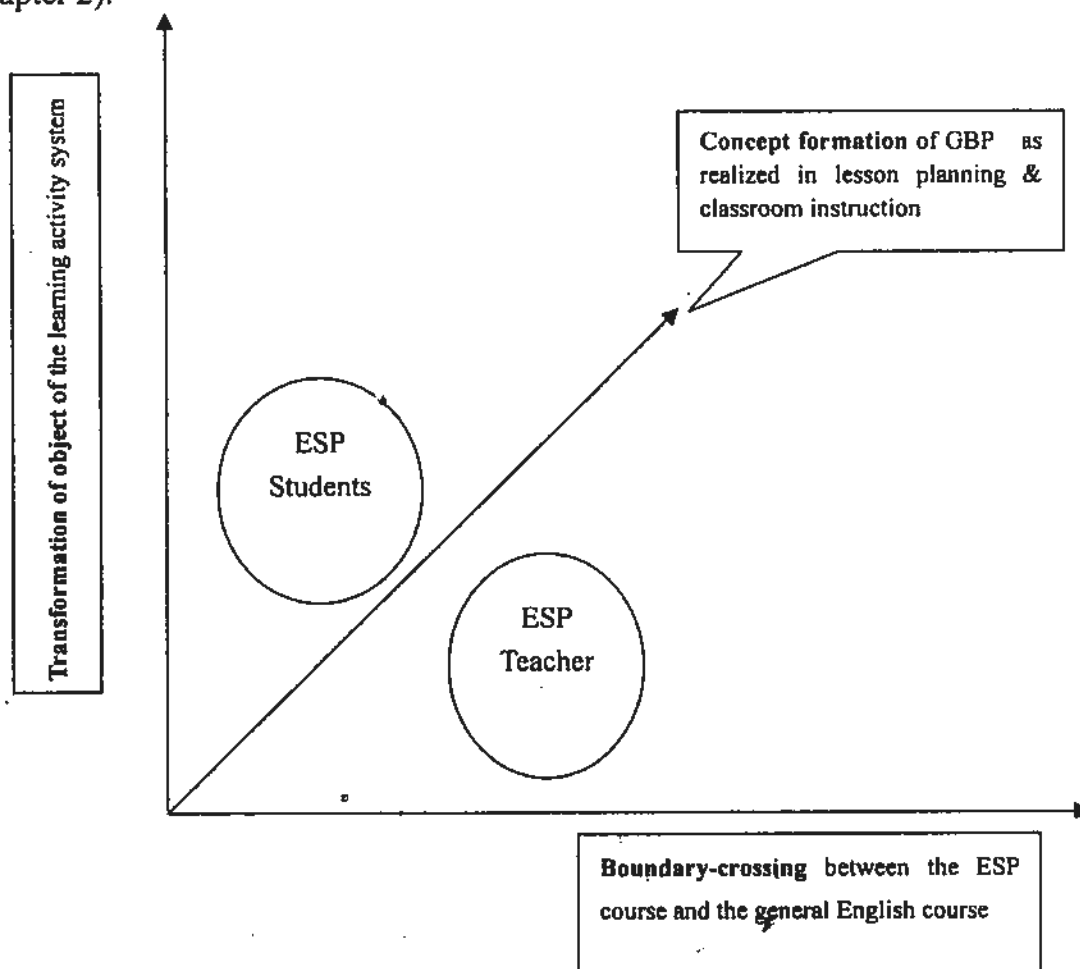


Figure 1.1: The GBP Mediated Expansive Learning Model

1.1.2.5 The Triadic Theoretical Framework

The theoretical perspective introduced above helps to formulate the theoretical framework for the present research. It is a triad conceptually supported by critical and sociocultural theories. Activity Theory helps to macro-contextualize and analyze the EMP education and research. GBP provides substantial, operational actions in the EMP classroom practice. And the GBP-mediated expansive learning model offers observational dimensions in the process of expansive learning potentially brought about by GBP. The theoretical framework is presented here in Figure 1.2 and will be repeated in Figure 2.14 just for the convenience of reading. How it relates with the research questions and design will be presented in Figure 1.3.

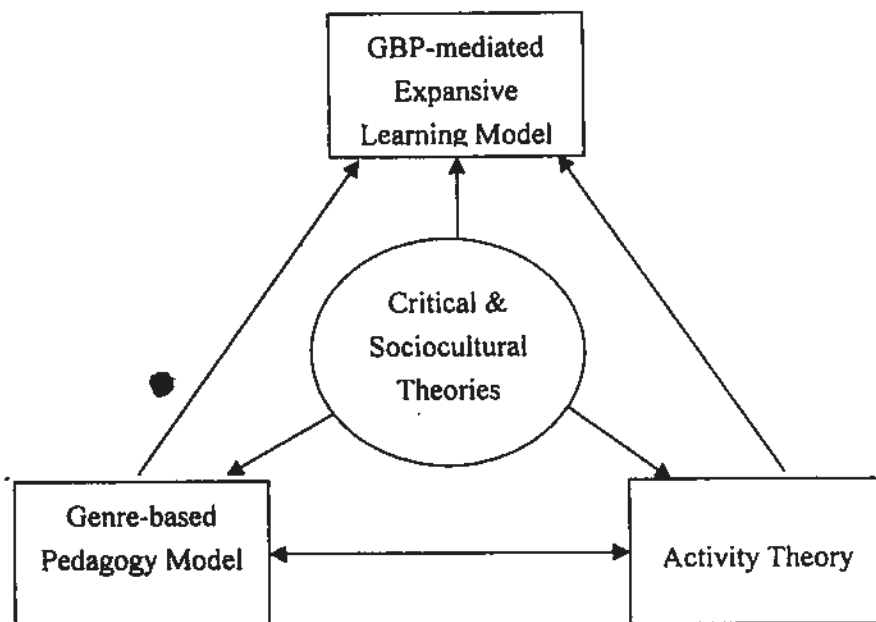


Figure 1.2: A Triadic Theoretical Framework

1.2 Research Questions and Research Design

The insights gleaned from a systematic study of the literature and the critical

reflections of a teacher have shaped my interest in the present research. The research questions follow a developmental research model (Engestrom, 1987) and guide the research actions from investigation to analysis, and to transformative actions and evaluation. The research questions are presented as follows:

Main research question: In what ways, if at all, does Genre-based pedagogy, informed by critical needs analysis, lead to expansive learning and transform Medical English instruction?

The three subsidiary questions are:

- 1) What are the medical students' English learning needs as perceived by different parties (i.e. students, teachers, administrators and medical doctors) concerned with the Medical English course?
- 2) What contradictions, if any, are revealed through critical analysis of the English language learning needs of medical students?
- 3) How can some of the contradictions be resolved through genre-based pedagogy mediated expansive learning?
 - a. How are the students' perceptions of English learning needs reconceptualized?
 - b. How is the concept of genre and genre-based pedagogy conceptualized and transformed in the process of learning?
 - c. How does boundary-crossing happen to facilitate the genre-based teaching?

The research is designed as a developmental model composed of five steps, namely *investigation, analysis, formation of new instrument, application and evaluation*. It was conducted in two stages: needs analysis and intervention case study (for details see Section 3.2.1 and 3.2.2).

In needs analysis, various research methods such as questionnaire survey, interviews,

focus group discussions, and class observations were used to collect data. A total of 652 students, 37 teachers (including ME teachers, medical subject teachers, and college administrators), and 7 medical doctors were involved in the investigation. This stage of the research was composed of two research steps: investigation of English learning needs and analysis of these needs to answer the first and second research questions.

The second stage of the research was designed as a case study conducted in a class of 46 first-year medical students taught by a ME teacher. In the investigated context, the ME teachers were the medical subject teachers or medical doctors who were good at English. They were what ESP literature usually refers to as “content teacher” and are referred to as “medical English (ME) teachers” in this thesis. While the teachers in the English Language Department of the college usually only taught general English courses³ and they are referred to as “general English teachers” in this thesis. I played the dual roles of the researcher (intervenor) and the English teacher, co-working with the ME teacher to design genre-based lesson plans and implement them in the ME class. Research actions also included the evaluation of the genre-based learning on both the part of the students and the ME teacher. Similar research methods such as questionnaire survey, interviews and focus discussions were adopted. 6 students were selected from this class for in-depth analysis. The case study aimed at answering the third research questions and its three sub-questions and it involved three research

³ There were special cases when the English teachers were assigned to other courses, such as my experience of teaching the ME course, as mentioned in Section 1.1.1.2. But when the present research was conducted, all ME courses were taught by medical subject teachers or medical doctors. A detailed introduction of the history of the ME course in the investigated context will be given in Section 3.2.2.2.

steps, namely the formulation of GBP as new instrument in the ME class, the application of GBP in the ME class and the evaluation of genre-based learning during and after the interventional instruction. Figure 1.3 shows how the theoretical framework introduced above is related with the research questions and research steps in the research framework.

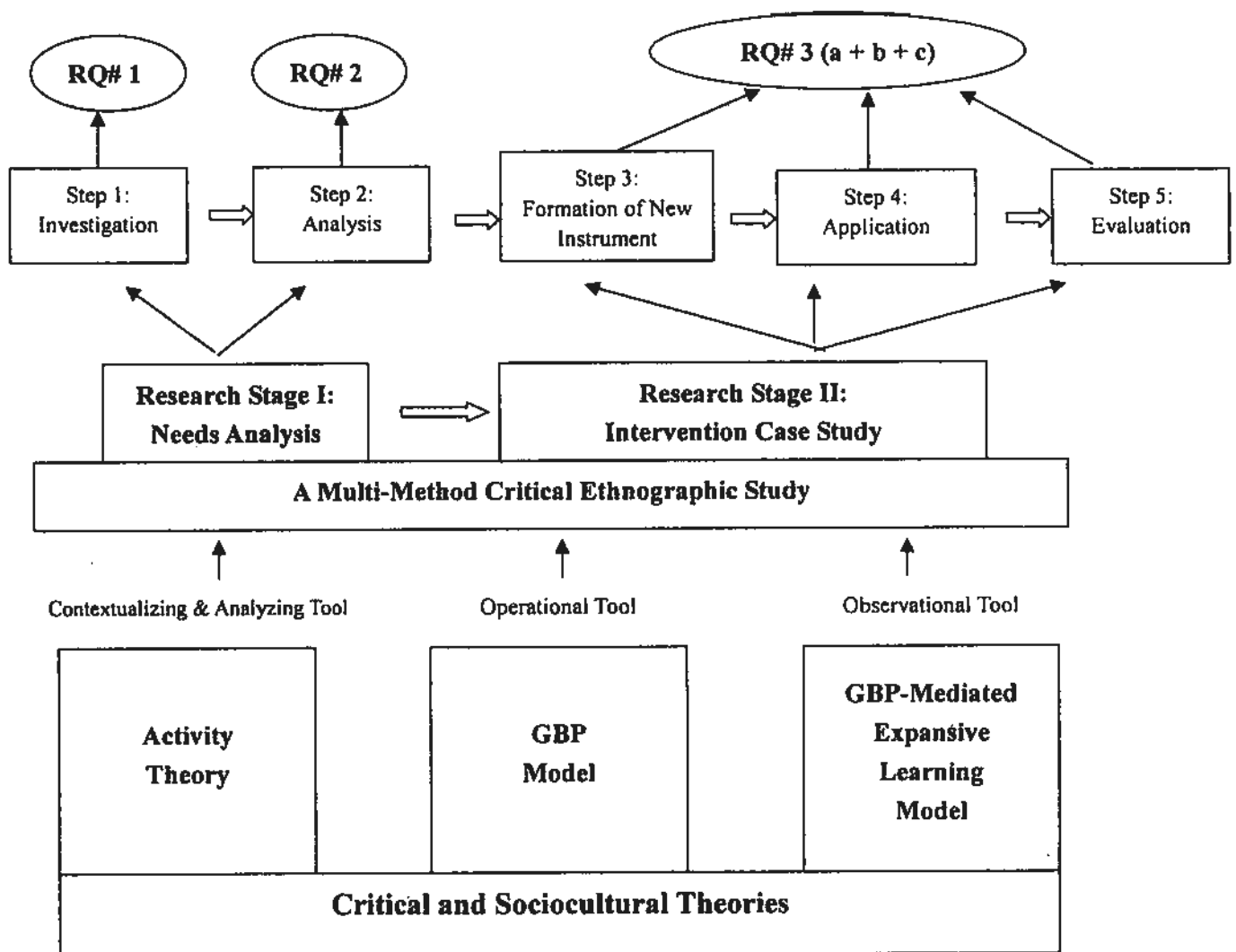


Figure 1.3: The Research Framework

1.3 Potential Contributions of the Research

The significance of the present research lies in its potential contributions to EMP research and instruction. Theoretically, it makes a good attempt to establish and test a

learning model drawing on the effective combination of Activity Theory and genre theories. Practically, it helps to bridge the research gap between the Chinese EMP field and EMP worldwide, by looking at the three missing perspectives in the Chinese EMP research discussed above. It also explores the feasibility of collaboration between content teachers and English language teachers and the sustainability of the EMP projects through addressing the students' developing learning needs in the instruction of EMP. Though feasibility and sustainability are discussed in a specific institutional context, the context itself, like any other, is constantly affected by the political, economic, and educational systems at the national level as well as by the forces of globalization.

Furthermore, the socio-historical and political embeddedness of English learning in the investigated context offer a localized orientation for the EMP research and help to find a way of "understanding and exposing new forms of inequalities in education and society and new productions of subaltern subjectivity under globalization" (Lin & Martin, 2005, p.6). In particular, the "new forms of inequalities" and "new productions of subaltern subjectivity" are explored by looking at how people learn English under both global and local influences, as described by Lin, et al. (2005) in the following excerpt:

Learning English in the new information age is increasingly oriented towards global, cross-cultural communication in multilingual contexts, and yet there also exist side-by-side local forces and structures which shape a learner's investment and understanding of what it means to learn English in the specific context in

which she/he is situated (e.g., for making the grades, passing the exams to enter university, or for enjoying hip-hop music and raps, doing ICQ or playing games on the internet). (Lin, et al., 2005, p.213)

This interaction of both global and local forces in specific sociocultural contexts, where local social actors are confronted with the oft-imposed task of learning and using English, is termed as “glocalization”. The present research establishes a case for the study of English learning within the context of glocalization in a specific professional field, namely medical field. It is significant for later study in other professional field. For example, with the opening-out of China to the outside world, the science students in China are exposed to more and more opportunities to learn new technologies and to communicate with foreign experts at home or abroad. How English learning is perceived and conducted among the science students in the interaction of global and local factors can be explored in a similar way by critically analyzing their English learning needs as reflected in the scientific and technological English course, which has been run for more than three decades in China (van Naerssen, 1988).

1.4 The structure of the thesis

To guide reading through this thesis, a preview of its structure is provided here.

- **Chapter 1: Introduction**

It has attempted to provide a preliminary introduction to the purposes of the present research, its theoretical and practical rationale, its design and potential contributions.

● Chapter 2: Literature Review

The organization of the literature review is based on the steps in which the theoretical rationale of the present research is introduced in Section 1.1.2 above. It begins from proposing a critical stance in ESP education and research, followed by the review of research in EMP and needs analysis, then by the introduction of the Activity Theory, the theory of expansive learning, and GBP, and finally ending with an explanation of how a triadic theoretical framework for the present research was established. It is composed of eight subsections:

- Conceptualizing ESP as cultural politics
- Development in EMP in China and abroad and the missing perspectives
- Development in needs analysis research and critical needs analysis
- Activity Theory: theoretical origins, historical development, and key tenets
- The theory of expansive learning: theoretical roots and forms of embodiment
- Genre-based pedagogy: the Activity Theory and expansive learning perspectives
- A triadic theoretical framework for the present research
- A summary of the key concepts in the present research

● Chapter 3: Research Methodology

This chapter introduces the methodology of the research embracing ethnography, case study, and developmental and interventionist methods. The research design is presented in terms of a developmental research cycle. The research aims, methods, instruments and data analysis of the two stages of study, including two pilot studies that preceded them, are delineated. The limitations of the research and corresponding strategies are also discussed.

● Chapter 4: Investigating the English Learning Needs

Here I present the results of the investigation of the medical students' English learning needs and compare the perceptions of the learning needs among different parties. It intends to provide answers to the first research question.

● Chapter 5: Analyzing the English Learning Needs

The aim of this chapter is to critically analyze the medical students' English learning needs based on the results of the investigation and summarize the contradictions from the perspective of Activity Theory. It intends to provide answers to the second research question.

- **Chapter 6: Reconceptualizing the English Learning Needs**

In this chapter, the reader will find a discussion of the vertical dimension of expansive learning that happens to the students after the genre-based instruction is implemented, namely how the students reconceptualized their English learning needs as the result of the instruction. It intends to provide answers to the first sub-question of the third research question.

- **Chapter 7: Appropriating Genre and Genre-Based pedagogy**

It discusses the formation, development and transformation of genre and genre-based pedagogy that the students and the ME teacher had undergone during and after the genre-based instruction. It intends to provide answers to the second sub-question of the third research question.

- **Chapter 8: Crossing the Boundary of Disciplines**

In this chapter, I describe how the horizontal dimension of expansive learning happened to the ME teacher and me through three cycles of boundary-crossing actions in the genre-based instruction and how it helped to facilitate medical English instruction as a result of such learning. It intends to provide answers to the third sub-question of the third research question.

- **Chapter 9: Summarizing the Case Study**

This chapter provides a summary of the case study in terms of what expansive learning had happened and how it helped to resolved some of the existing contradictions in the medical English class activity system.

● Chapter 10: Concluding the Research

The findings of the whole research are brought together here and a discussion of the significance and limitations of the study follows. The thesis ends with suggested areas for further research in the area of medical English.

Chapter 2: Literature Review

Introduction

This chapter attempts to establish a theoretical framework informed by various theoretical strands in different research fields. The first three sections on ESP research, EMP research and needs analysis serve as an overview of the relevant research areas. The next three sections offer different theoretical insights from Activity Theory, expansive learning theory, and genre theories. The theoretical perspectives of Activity Theory and genre theories are integrated in the formulation of an expansive learning model that can be used to observe the learning behaviors in the investigated group. Finally, a triadic theoretical framework is formulated for the present research and key concepts are summarized.

A figure is depicted here to orient the reader with the relationship between different research areas and theoretical strands and to guide the reading of this chapter. In this figure, the specific research area of the present study, namely needs analysis (Section 2.3), is located as a part of the EMP research field (Section 2.2) which is, in turn, a branch of the ESP research field (Section 2.1). The theoretical perspective is taken from three theoretical strands, i.e. Activity theory (Section 2.4), expansive learning theory (Section 2.5) and genre theories (Section 2.6), all of which share the theoretical roots from sociocultural and critical theories. These theoretical strands triangulate and complement each other to form a solid theoretical foundation for the present research (Section 2.7).

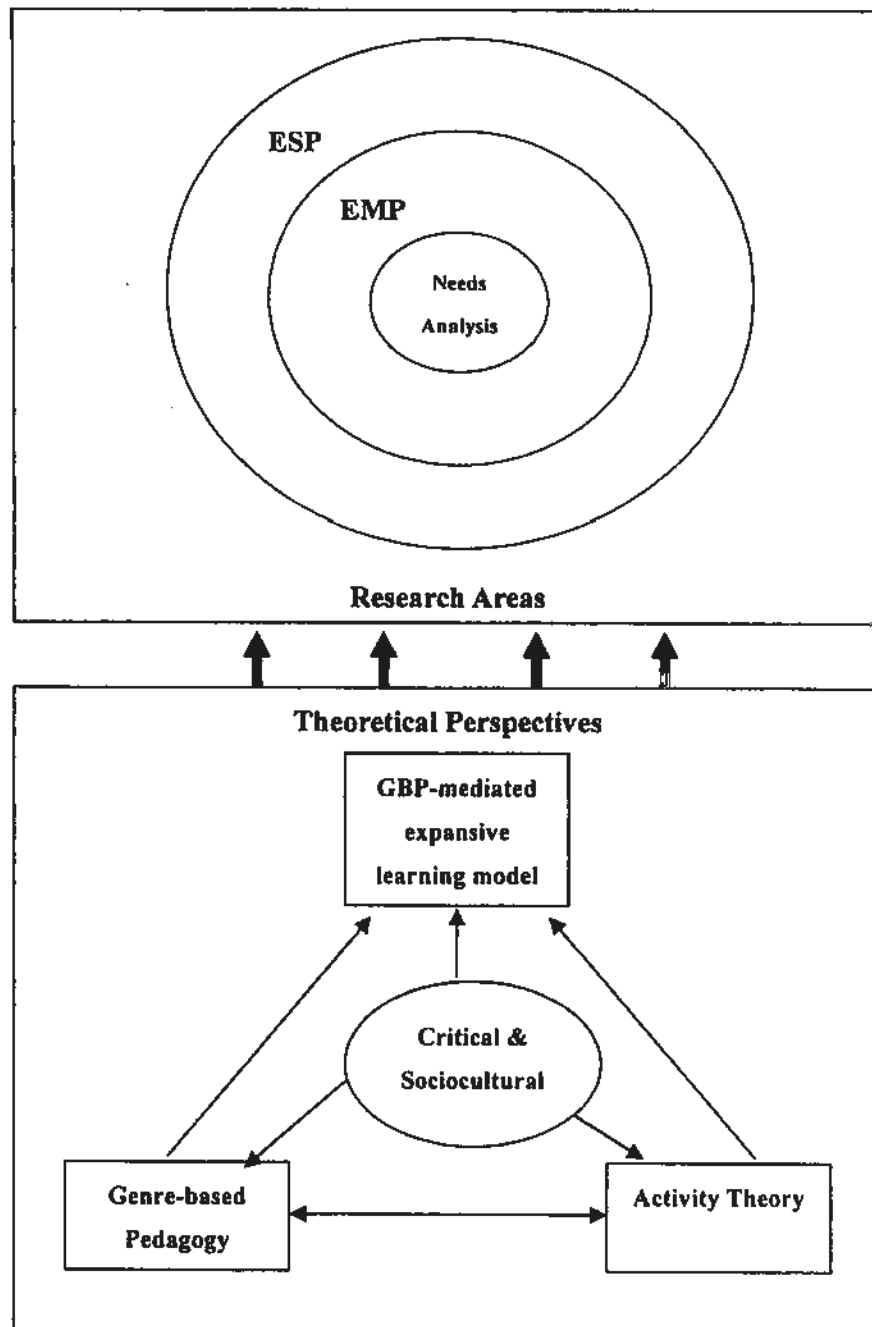


Figure 2.1: The Linkage between Research Areas and Theoretical Perspectives

2.1 Connecting Words with World: a Critical Approach to English for Specific Purposes

ESP has always been treated as neutral, pragmatic and instrumental in achieving academic success. But the ideological issues inevitably involved in language

education points to the fact that any language learning is influenced by cultural politics that leads to social stratification and inequalities. To avoid ideology free and pragmatic conceptualization of ESP, a critical approach is suggested in ESP research to connect the neutral, academic language with the social, political, and economic world outside the classroom and outside the boundaries of both specialties and nations in these times of globalization.

2.1.1 The Cultural Politics of English Language Teaching

The traditional view of treating English and English teaching as neutral and ideology free has been under a lot of criticisms (Pennycook, 1994b; Holliday, 1994; Ramanathan, 2002; Kramsch & Sullivan, 1996; Canagarajah, 1999). It has been pointed out that the key sites of production of knowledge about language education lie in the Anglo-speaking worlds and Europe and that language teaching is inevitably ideologically encumbered (Pennycook, 1994b; Ramanathan, 2005; Lin, in press). There have been discussions about the BANA/TESEP distinction⁴ (Holliday, 1994) and the distinction between the west-based TESOL (Teachers of English to Speakers of Other Languages) and non west-based TESOL (Ramanathan, 2006).

In the last two decades, the ever-growing influence of globalization has been obvious in ELT practice. Canagarajah (2005. pp. xxiii-xxiv) summarized the following developments that have lead to pedagogical changes in ELT:

⁴ According to Holliday, the BANA professionals are the English teaching professionals oriented toward the private sector in *Britain, Australasia, and North America*, while TESEP stands for *tertiary, secondary, and primary* as 'state education in the rest of the world' (Holliday, 1994, pp. 12-13).

- With the rise of postcolonial communities, the ownership of English is changing.
- A general fluidity and mixing in language, cultures, and identities is becoming a fact of life.
- New literate competencies, such as computer literacy, boundary-crossing, the abilities to deal with multiple textualities and discourse, are demanded.
- There has been greater interaction between people from diverse linguistic backgrounds.
- The new media of communication, such as the Internet, encourages greater hybridity and fluidity in communication.

Because of these developments arising from globalization, ELT is faced with shifts both in pedagogical practice as well as in professional discourse and structure. Issues are raised in terms of how to deal with the relationship between native language/culture and English (Lin, 1997), how to design method, organize materials, and develop curriculum in light of local knowledge, local subjectivity, and local needs (Canagarajah, 2005). In many contexts, ELT is no longer a neutral enterprise; rather, it involves various socioeconomic and sociopolitical considerations. As Lin's (Lin, 1999) and Ramanathan's (2005) studies showed, we need also to pay attention to how English is oriented in its relationship with other languages in society and how different pedagogies of English contribute to social stratification and inequalities.

Pennycook (1994b) has criticized that the traditional discourse of English as an International Language tends to look at the spread of English as natural, neutral and beneficial, while, in reality, English is connected to social and economic inequalities both within and between countries and is bound up with various forms of culture and

knowledge that are increasingly dominant in the world. Teaching practices themselves represent particular visions of the world and thus make the English language classroom a site of cultural politics, a place where different versions of how the world is and should be are struggled over. Therefore, ELT practice should be regarded as both cultural and political. For this reconceptualization of ELT, a critical perspective to ELT is needed. In the same way, as a part of ELT, the research on ESP also requires a critical turn.

2.1.2 A Critical Approach to ESP

The teaching of ESP has generally been viewed as a separate activity within ELT. It was developed as a result of the general developments in the world economy in the 1950s and 1960s, which were reflected by the growth of science and technology, the increased use of English as the international language of science, technology and business, the increased economic power of certain oil-rich countries and the increased numbers of international students studying in the UK, USA and Australia (Dudley-Evans & St John, 1998). This origin in economic development seems to brand ESP as pragmatic from the very beginning. The description of the three absolute characteristics of ESP can best annotate this pragmatic stance:

- ESP is designed to meet specific needs of the learners;
- ESP makes use of the underlying methodology and activities of the disciplines it serves;
- ESP is centred on the language (grammar, lexis, and register), skills, discourse and genres appropriate to these activities. (Dudley-Evans & St.

John, 1998, pp.4-5)

From the very beginning, ESP is needs-based and learner-centred. And it is naturally believed that ESP instructor should “discover what will be expected in the academic contexts their students will encounter, and they must provide their student with the writing skills and the cultural information that will allow their students to perform successfully” (Reid, 1989, p.232). But this “accommodation ideology” (Benesch, 1993, p. 711) implied by this pragmatic stance has been criticized by many (Benesch, 1993; Pennycook, 1994a & 1997; Widdowson, 1998). Indeed it is claimed that ESP needs to go beyond the accommodation of students to the content and pedagogy of mainstream academic classes and move towards “a critical praxis”, a critical pragmatism that Pennycook advocates for EAP in the following excerpt:

To see an EAP that sees language, both locally and internationally, as political, that starts to take on board an understanding of the ways in which our lives are discursively construed through language; an EAP that sees content, whether academic university content or more general “serious issues” as always political; an EAP that acknowledges that the way we teach and what we teach is always a question of cultural politics, that language, knowledge and culture form a complex tangle that cannot be avoided; an EAP that seeks to do more than just tolerate difference, but moves towards a more direct engagement with the confrontation between the cultural, educational and linguistic practices of the students and the practices of the academy. (Pennycook, 1997, p. 266)

To achieve such a critical approach to ESP, the ESP curricular researchers should try to answer such basic issues as Grundy has stated in his formulation of curriculum as a social praxis:

- Whose interests do the structures of schooling serve?
- How can power be distributed more equally throughout the educative process?
- How can knowledge and action be improved through pedagogical practices?
(Grundy, 1987, p.121)

In seeking answers to these questions, ESP researchers will be involved in the “praxis” of critical reflection and action, a complex activity involving a cycle of theory, application, evaluation, reflection, and then back to theory (Freire, 1993). In this way, they can help to “achieve more of a community-oriented outlook by assisting in the development of improved means of promoting dialogue, consensus building, and values clarification among diverse, unequally empowered stakeholders” (Belcher, 2004, p.178). The most salutary outcome will be “a shared responsibility of teachers, students, employees, and other community members as well as of those in positions of greater power and in control of funding” (p.178). It is to this end that the present research is conducted. And this subsection about the cultural politics of ELT and the critical approach to ESP can serve as a starting-point of the current research.

2.2 Research in English for Medical Purposes: the State of the Art

In this section, the general trends in EMP research ever since its inception is discussed, followed by an overview of EMP research in China. The state of the art of EMP, in the world in general and in China in particular, reveals the need for revising key perspectives surrounding this field of research, which will be explored by the

present research.

2.2.1 Trends in English for Medical Purposes

The importance of English in medical research can be traced back to the 1960s. From then on, an increasing number of medical journals use English as a working language. According to Maher (1986a), by 1980, as much as 72% of the articles listed in the Index Medicus, the index of articles published in medical journals all over the world, were published in English. A more recent survey conducted by Giannoni (2008) shows that in 2006, 90% of the publication in PubMed, the most comprehensive and authoritative database consulted by medical researchers and practitioners, is in English, compared with 77% in 1986, indicating that English has become the lingua franca of medical publications and conferences.

This increasing use of English in medical research has led to enlarged interest in EMP research. EMP, like other branches of ESP, is indebted to the tradition of stylistic/register analysis ever since its inception in the 1960s. For example, Lewis (1975) described the special characteristics of adjectives in descriptive anatomy in English. Dubois (1981) discussed the characteristic use of noun compounds in medical discourse. The development in the study of discourse beginning from the late 1970s has shifted the centre of attention away from medical English register towards analysis of the interactional processes, hence the boom of discourse analysis first in the study of doctor-patient interaction (e.g. Shuy, 1979; Coleman & Burton, 1985) and later in medical writing (e.g. Salager-Meyer, 1992; Salager-Meyer, 1994;

Williams, 1999). This trend maintained its vitality into the 1990s and 2000s, with more and more studies that are genre-based (e.g. Nwogu, 1991; Marco, 2000; Kanoksilapatham, 2005) and corpus-based (e.g. Webber, 2005). In the process of shifting attention from register analysis to discourse analysis, then to genre analysis, there have been continuous attempts, though limited in number, to apply the results of analysis to language-learning and link them to objectives in EMP (e.g. Murison-Bowie, 1967; Salager-Meyer, 1994; William, 1999).

Another broad category of EMP research concerns curriculum development issues such as needs analysis, teaching materials and methodology. Needs analysis in EMP used to focus on doctors' needs only (Maher, 1986b). The scope was later expanded to the social needs of foreign immigrants in medical situations in English-speaking countries (Weinreich, et al., 1982). For example, Cameron (1998) conducted an extensive needs analysis for ESL-speaking graduate nursing students, focusing on skills required for school, clinical practice, and interaction with a multicultural, socially stratified pattern population. Another study by Chia et. al (1999) stands out because of its EFL context where the researchers have investigated the English language needs of medical students in Taiwan, using both students and faculty as informants.

EMP teaching methodologies have been explored in various contexts. For example, Graham & Beardsley (1986) studied how a course in communication offered to nonnative English-speaking pharmacy students in America were team-taught by a

pharmacist and an ESL specialist; Shi et. al (2001) used videotapes of clinical training sessions to help medical students in Hong Kong acquire oral communication skills. As for EMP teaching materials, there seems to be a tradition of “doctors might be writing ESP material and co-opting language teachers as informants” (Maher, 1986b, p. 136). According to Maher (1985), all but two of the 24 EMP textbooks for Japanese doctors, used in the 1980s, are written by medical professionals, not language teachers. The situation remains more or less the same if we look at books for medical education published more recently, such as *Medical English* (Ribes & Ros, 2006) and *Mastering scientific and medical writing* (Rogers, 2007). The result of the medical professionals’ “working alone in the field” is that most EMP materials are full of word lists, grammar, comprehension practice, and translation practice while “the pedagogical method is often unimaginative” (Maher, 1986b, p.136). Besides the uniquely dominant participation of medical personnel in materials writing, as Maher (1986b) points out, leads to a lack of descriptions of the language needs of medical students and doctors in the teaching materials, hence we find few descriptive accounts of the role of English, as well as English teaching itself, in the medical field for the learners.

Later studies, though only a few in number, integrate needs analysis into the holistic framework of EMP curriculum development and indicate the expansion of EMP research within two dimensions: (1) horizontally, needs analysis is connected with other stages of curriculum development such as course, material design, teaching and evaluation, challenging the earlier claim by Hutchinson & Waters (1987) that there is

no direct transfer from needs analysis to course design; (2) vertically, the instruction of EMP is dialectically interacting with historical, political, social, economic and technological factors, implying the necessity of using multidimensional approach to EMP curriculum development (Ostbye, 1997). A case in point is how the results of needs analysis have served as the base for the design of content, materials and methodology in a course of health-care communication for immigrant students in America (Bosher & Smallkoski, 2002). In the present research, I have also made use of the results of needs analysis to select teaching methodology and design the teaching materials. Moreover, I, the researcher, have conducted a critical analysis of these results to display areas needing change and have delineated new classroom instruction with the goal of achieving the change. What makes the present EMP research different, from the other studies mentioned so far, is that needs analysis is given a dynamic role and used as a diagnostic tool in the EMP instruction to transform the original way of EMP teaching and learning in a specific context.

The next subsection will trace the development of EMP in the Mainland China and explain the missing perspectives that prevent EMP research in China from keeping pace with the outside trends.

2.2.2 EMP in China: The Missing Perspectives

ESP, for some time in China, primarily referred to EST-oriented (English for Science and Technology) training (van Naerssen, 1988). Interest in ESP education and research rose as a response to the increasing demands for professionals proficient in

English after the open-door policy in 1978. But there was disagreement among English teachers as to whether science students should be taught general English or scientific English (van Naerssen, 1988). The debate over general and scientific English is still alive today. The contention lies in whether scientific students learn English more effectively in a general English or scientific English curricular framework.

In China, the development of EMP is always bound up closely with the English curricular innovation at the tertiary level. Before the late 1970s, the teaching of EMP was not placed within the national network for language education. Teaching EMP, this researcher feels as an EMP teacher, has always been marginalized and has not enjoyed a high status. Therefore, efforts in EMP education and research have been, at best, isolated and weak. Some institutions designed their own medical English textbooks; most used the then popular medical English textbooks edited by Shao (1974, 1980 & 1982). According to Maher (1986b), these textbooks “have a strong reference-book flavour” (p.129) that serve more as dictionaries for medical terminology than teaching/learning materials. At that time, most medical students did not take general English course before they learned medical English.

A turning point occurred in 1985 when the National Educational Committee issued the revised College English⁵ Syllabus, requiring that all non-English major college students take English as a compulsory subject. Since then, many medical colleges and universities have turned the medical English course to general English course.

⁵ Ever since 1985, non-English major English syllabus is termed as college English in Mainland China.

Although academic reading is stipulated by the syllabus as a higher level requirement for senior students, it was not systematically taught. In some university, it was even totally ignored because of inadequate pedagogic (i.e. unqualified EMP teachers) or administrative support (Liao & Qin, 2000). In 1999, a new version of College English Syllabus was publicized. One of the many reform efforts pertained to replacing the requirement of teaching academic reading with the requirement of teaching all basic skills in academic English. The extension from solely focusing on reading skill to embrace all language skills reflected the National Educational Committee's determination to change the traditional focus on reading literature⁶ in ESP and to cultivate "compound talents" who are proficient in both English and specialized subjects. In answer to the new requirements, some medical universities began to design medical English course as part of the curricular system. Since the late 1990s, more and more medical universities have tried out bilingual medical education (some medical subject courses are instructed via both Chinese and English) or English medical education (some medical subject courses are instructed via English only) for their students.

In China, research specifically in EMP has been rather limited both in scope and research methodologies. To have an overview of the EMP research in China in the last three decades, I conducted a survey in the China Journal Net (CJN), one of the biggest Web-based databases containing full text articles from a large number of

⁶ In China, ESP has primarily referred to EST (English for Science and technology)-oriented training which teaches scientists and science students to read English academic publications, hence the traditional special importance paid to reading skill in ESP (van Naerssen, 1988).

journals published in China. I used “medical English” as key words in titles and found 380 articles published in the period of 1980-2008. I then read through all the articles and produced a list of categories that these articles can be classified under. At the same time, these articles were also read by one of my colleagues in the Foreign Languages Department of the medical college, an English teacher who also majored in ESP curriculum research. After both of us agreed upon the list of categories, we set out to put the articles into the categories independently. The results of the categorization were compared and any place of disagreement was negotiated until agreement was reached. Among the 380 articles, only 16 (4%) articles were published during the period of 1980-1990, all of which discussed the linguistic features of medical English such as synonyms, passive voice, and long sentence structures. Articles about teaching methods and materials did not appear until 1992, indicating that the concern with EMP did not expand beyond vocabulary and syntax until the 1990s. Attempts to locate medical English course in a school system and link such a course with subject courses could only be found in articles published after 2000. In other words, concerns with EMP as a curriculum issue arose recently as a response to the college English curriculum innovation mentioned above.

The 380 articles fall into several categories in terms of their topics (see Table 2.1). It should be noted that some categories are overlapping. For example, the article on the long sentence structures in medical English writing also discusses the implication for instruction of translating skill. And articles on curriculum issues may deal with teaching materials or methods. In these cases, the articles were put into two

categories at the same time after the discussion between me and the co-rater. Some articles on translating skills may concern medical terms. But if they are written with an obvious focus on translating skill, they are put into the first category. Technology-assisted instruction is listed separately because it stands out as a very popular topic.

Table 2.1: Articles in Different EMP Research Categories

Ranking	Category	Number of article	Percentage
1	Skills training (reading, writing, translating, listening etc.)	101	27%
2	Register/stylistic features of medical English	74	19%
3	Teaching materials and methods	70	18%
4	Instruction of medical terms	65	17%
5	Curriculum issues	62	16%
6	Technology-assisted instruction	22	6%

The categorization provides a general picture of which EMP research areas have attracted more attention and what have been long neglected. Skills training ranks as the most popular area of research (27%). Within this category, a majority of the articles are about the instruction of translating skill, while only a few discuss the instruction of reading and writing skills. Articles on the features of medical English rank second (19%), which are only confined to register analysis. In other words, discourse analysis and genre analysis, which have attracted great interest in the field of EMP, are still less explored research areas in China. As for medical terms, many articles are concerned with the deviation and evolvement of medical terminology, especially abbreviations. Another big concern in this category is the mnemonics of medical terms.

Articles that fall into the categories of teaching materials and methods, technology-assisted instruction in particular, or a more general discussion of how EMP is related with other areas of education as a curricular issue are particularly examined here in terms of the research methodologies because methodologies are seen as more relevant to the present research. It was found out that only 6 articles (1.5%) discuss EMP curricular issues on the basis of empirical study. And all of the 6 studies used questionnaire as the single instrument of investigation. These studies investigated the students' opinions of bilingual medical education or the English linguistic proficiency of medical students in a specific medical college or university. Only in one case were medical students' English learning needs investigated (Li, 2008).

Finally, all of the 380 articles were published in minor journals on medical education. None was published in journals of linguistics or language education. What is revealed from this finding seems to indicate that EMP research is still marginalized in China's ELT research field and has neither been recognized as an important branch of research nor given the status that business English has been accorded in China (e.g. Pang, et al., 2002; Yuan, 2005; Zhao, 2006).

Based on the previous discussion, some perspectives are identified to be missing from the EMP research in China:

- **The sociocultural perspective**

Sociocultural theories believe that learning is a socially situated activity

(Vygotsky, 1978) and effective English teaching should not lose sight of the values and beliefs which are shaped by various social, cultural, historical factors and are brought into the English classroom by both teachers and learners. So far the discussion on medical English education fails to bring insight into the interrelated relationships between learning/teaching behaviors and the social contexts that have been, and are being shaped by the constantly changing social, economic and political situations in this country.

ELT in China has always been related to social and political changes and is often caught in the double bind: on the one hand, it contributes to China's modernization by not only introducing Western scientific knowledge and advanced technologies but also by enabling the Chinese to participate in intercultural communication; on the other hand, it threatens the integrity of traditional Chinese culture and society by bringing in Western concepts, values, and customs (Adamson & Morris, 1997; Zhang, 2006). Nowadays, for many Chinese learners, English is learnt not simply for the prestige of knowing a foreign language or appreciating the cultural heritage of Anglo-American societies, but for patriotic (national modernization) and utilitarian (personal advancement and material gain) reasons (Pang, Zhou, & Fu, 2002). However, "negative resistance" has been identified by some researchers. For example, Zhao and Campbell (1995) reported that many students resent having to learn the language, and only do so because of its importance for educational advancement, or, in other words, for passing examinations. Students who hold this attitude to English are very de-motivated and passive learners inside and outside the classroom. For these students, English is "the necessary evil" (Canagarajah, 2005).

Therefore, to make the research more socioculturally significant, the EMP researchers, like researchers in any other branches of ELT, have to be more insightful of the sociopolitical and socioeconomic factors that are affecting the

medical English class. They will have to answer a variety of questions, such as: (1) What does English learning mean to the medical students? (2) Why do they think they need to learn English? And (3) What activities or methods are conceived as better ways of learning English based on these needs?

- **The critical perspective**

Critical pedagogy claims that English learning is not neutral and is always embedded in unbalanced, or even unequal, social conditions, and thus English teaching should be aimed at empowering both teachers and students as the real agents of education so as to transform the existing social contexts (Pennycook, 1999). Ramanathan (2005) identifies the divisive role English has played in the Indian society in terms of the inequality created by English-medium or vernacular-medium instruction at schools. It would be too early to accuse English of playing a similar role in China, but one thing is becoming obvious: the upward social mobility granted by English proficiency is increasingly contributing to the inequality between the *haves* versus the *have-nots*, city versus rural in terms of access to effective English language instruction (Nunan, 2003).

Based on the above discussion, another set of important questions should be asked, namely: (1) How can we turn the necessary evil into a necessary blessing? (2) How can we use English as a tool to both cultivate new identities that are able to survive the modern competition and achieve a larger degree of social equality? Or, in Bruthiaux's (2002) words, (3) how can English be taught and learnt as both *a practical tool* for handling the increasing complexities of economic transactions and *a conceptual tool* for visualizing hitherto inaccessible opportunities? EMP researchers, together with other ELT researchers, will have to look into the problems and conflicts that are brought about by the seemingly neutral or beneficial-to-all education reforms and initiate transformation through research. They will have to take these questions into consideration and try to

explore methods that both cultivate new academic identities and achieve larger space for career development in the current climate of globalization.

- **The empirical perspective**

As the above overview of EMP research in China shows, a majority of articles are non-empirical, full of taken-for-granted assumptions and “imported” western theories of language learning. There are few attempts to inquire into the availability, practicality and effectiveness of teaching methods and curriculum design in EMP.

Moreover, the always top-down educational initiations tend to blot out the voices of most English teachers in ELT research. This may be due to the “strong linkages between the oscillations of national politics and the state’s hegemonic role in defining school curricula through its bureaucratic, centralized, and coercive mechanisms” (Adamson & Morris, 1997, p.5). Worse is the EMP research in which only medical specialists’ voice is heard. Therefore, an important area of EMP research is how the “spirits” of the top-down curricular innovation can be realized in school- and class-based innovations. There should be grass-root level of curricular innovations and practices that bridge the gap between the national policies and local needs. The empirical perspective requires more bottom-up forces, teacher-practitioners in particular, to be involved in EMP research through appropriate methods such as ethnographic research and action research. In-depth investigation into the classroom contexts, as well as institutional and national contexts, is urgently needed to answer the questions mentioned above.

2.3 Needs Analysis

Needs analysis is the key defining feature of ESP (Dudley-Evans, 2001) and it is considered to be the principal method to determine the content of an ESP curriculum. In this section, the development of needs analysis from its earliest emergence in ESP program is classified in three areas of research: the content of analysis (what), the purposes of the analysis (why), and the methods of analysis (how). It will be shown, step by step, that needs analysis in ESP is undergoing a process of becoming more process-oriented, learning-centred, and critical in essence. Activity-based needs analysis will then be proposed as a new form of analysis that borrow insights from both critical pedagogy and Activity Theory.

2.3.1 The “What” of Needs Analysis: From Target Situation Analysis to Right Analysis

Generally speaking, needs analysis refers to the activities involved in gathering information that will serve as the basis to develop a curriculum for a particular group of students. Having originated in India in the 1920s in a study of Indian English learners' needs, the term returned to central prominence with the advent of ESP, for which needs analysis has become a key instrument in course design (West, 1994). Ever since then, what is meant by 'needs' has remained confusing. As Richterich (1983) states, “[t]he very concept of language needs has never been clearly defined and remains at best ambiguous” (p.2). This difficulty of definition remains somewhat unchanged in spite of the fact that the concept and focus of needs analysis have

evolved all the time.

Target situation analysis was the earliest form of needs analysis. It intended to identify the language requirements of the target situation by contemplating, questioning or observing those already in that situation. The result of this kind of analysis is what is called *necessities* (Hutchinson & Waters, 1987) or *objective needs* (Richterich, 1972). Because target situation analysis takes little account of the learner's present linguistic proficiency and provides limited direction to the teaching situation, it is regarded as "narrow" or "product-oriented" (Brindley, 1989). Needs analysis then evolved to include *deficiency analysis*, the attempts to estimate the "learning gap" between present needs and target needs (West, 1997), also termed as *lacks, deficiencies* or *subjective needs*.

If deficiency analysis establishes the starting point of the learning journey, target situation analysis set up the destination. However, in this journey, paying attention to the means of travel, i.e. the approaches to learning or teaching, become indispensable. Therefore, *strategy analysis* was introduced to establish the learner's preferences in terms of learning styles and strategies, or teaching methods. As the focus of needs analysis move from objective to subjective, from product to process, means analysis, the examination of the teaching environment in which the language course is to take place, has been advocated as an adjunct to needs analysis (Holliday & Cooke, 1983). West (1997) expanded this notion to include four main areas: classroom culture/learner factors, staff profiles/teacher profiles, status of language

teaching/instructional profiles, and change agents/change management. Means analysis provides an additional perspective to needs analysis: the social perspective. In this way, the scope of analysis is extended from process to context.

Dudley-Evans and St John (1998, p.125) see today's concepts of need analysis to include aspects of all the above-mentioned approaches, encompassing the following:

- Professional information about the learners (*target situation analysis and objective needs*)
- Personal information about the learners (*wants, means, subjective needs*)
- English language information about the learners (*present situation analysis*)
- The learners' lacks (*lacks*)
- Language learning information (*learning needs*)
- Professional communication information (*linguistic analysis, discourse analysis, genre analysis*)
- Learners' needs from course
- Information about the environment in which the course will be run (*means analysis*)

Although the concept of needs analysis has been substantially broadened, Benesch (1999) points out a still missing perspective: the learner's perspective. Previous approaches to needs analysis only attempt to describe what is expected of students, not what might happen if their wishes were elicited and acted upon. Therefore, needs analysis should include the examination of how power is exercised and resisted in various aspects of an academic situation, including the pedagogy and the curriculum. Benesch terms this as "*right analysis*".

Rights analysis recognizes the classroom as a site of struggle. It studies how power is exercised and resisted in an academic setting, aiming to reveal how struggles for power and control can be sources of democratic participation in life both in and outside the classroom. (Benesch, 1999, p.315)

According to Benesch, the term “right” not only highlights power relations as an important area of analysis, it is also used as a descriptor to “counterpose needs with a more explicitly political term” (Benesch, 2001). In this sense, it reconceptualizes the objectives of conducting needs analysis, the “why” of needs analysis.

2.3.2 The “Why” of Needs Analysis: From Descriptive to Critical

As discussed above, although the concept of needs analysis has been broadened all the time, it remains largely descriptive until the advocacy of “right analysis” by Benesch (1999).

Previously, researchers have intended to identify and describe existing elements of the target situation to provide the basis for curriculum development. The discovery and description is usually presented as neutral. But, at the same time, it is clear that “whoever determines needs largely determines which needs are determined” (Chambers, 1980, p.27), and that needs analysis is “influenced by the ideological preconception of the analyst” (Robinson, 1991, p.7). This non-uniqueness of needs analysis is further stated by Dudley-Evans and St John:

The findings from a needs analysis are not absolute but relative and there is no single, unique set of needs. The findings depend on who asks what questions and how the responses are interpreted. What we ask and how we interpret are

dependent on a particular view of the world, on attitudes and value. (Dudley-Evans & St John, 1998, p. 126)

However, the descriptive approach of needs analysis hides the ideological basis and holds the assumption that students will fulfill, not question, target situation requirement. It disregards the unequal social positions of the different parties involved and the possible effects of such inequality on curriculum development.

Benesch (1993) states that needs analysis has avoided questions about unequal power in academic situations and workplace, allowing institutional requirements to dominate in the name of so-called authenticity, realism, and pragmatism. To fight against the limitations of a descriptive approach, Benesch (1996) suggests a critical approach to needs analysis. Rather than treating needs analysis as a neutral and objective process in which existing conditions are identified for the students to adapt to, critical needs analysis acknowledges existing forms, including power relations, while searching for possible areas of change. In other words, the target situation is no longer a natural existence for analysts to describe and prescribe what learners must do to perform well in that situation; it is a site of possible reform towards greater equality for learners. For example, in Benesch's (1996) study, the critical needs analysis in a paired ESL/Psychology course involved, first of all, the presentation of a number of contradictory demands on students from various levels of the academic hierarchy, and then the development of three types of activities to help students manage the contradictory demands and to create possibilities for change. These activities included student-written multiple-choice test questions, student-generated

questions for the psychology professor to answer, and a series of research and writing assignments on a psychology topic rich in social implications.

Therefore, critical needs analysis aims at both the understanding of the existing conditions and the transformation of these conditions. Its objectives are three-fold namely to; (1) describe, (2) criticize, and (3) transform. To this end, needs analysis needs not only a reorientation of research focus, but also a reorientation of research methods. Particularly, the unit of needs analysis has to be evolved to fulfill the missions that are assumed. In the next subsection, the evolvement of the unit of analysis is used to illustrate how research methodology can be reoriented to meet the objectives of critical needs analysis.

2.3.3 The “How” of Needs analysis: From Text-based to Activity-based

Long (2005) raised the awareness of methodological issues in learner needs analysis. In particular, he pointed out the importance of choosing a proper unit of analysis. According to him, traditional text-based needs analysis generally conducted by English teachers or applied linguists has its limitations:

Linguistically based NAs [needs analysis] tend to result in lists of decontextualized structural items, not unlike the table of contents of any grammatical syllabus not based on a NA, and are of little use to a course designer or materials writer because they provide scant, if any, information on how, or to what ends, the structures are used in the target domain. (Long, 2005, p.23)

Due to this limitation, Long suggested that ‘task’ should be the unit of needs analysis.

The reasons that he listed to support task-based needs analysis are as follows:

- Tasks, or job descriptions produced by domain experts/insiders are more valid than those produced by language teachers and applied linguists.
- Task-based NAs provide contextualized structural items, while text-based NAs tend to result in lists of decontextualized structural items that are irrelevant or of little use to a course designer or materials writer.
- Task-based analyses reveal more than text-based analyses about the dynamic qualities of target discourse. It was the tasks that motivated the texts, not the other way around.
- Conceptualizing needs through tasks help circumvent two notorious bottlenecks in program design: the domain expert's usual lack of linguistic knowledge and the applied linguist's usual lack of content knowledge.
- The results of task-based NAs readily lend themselves as input for the design of a variety of analytic, task-based and/or content-based second and foreign language courses.

(Long, 2005, pp. 22-24)

Although task-based NA is a great improvement from text-based NA, the focus of analysis is still confined in the scope of individual action of learning, i.e. it fails to underscore the social nature of learning. From the sociocultural perspective, learning is a socially situated activity: knowledge is socially embedded, and learning occurs from socially-mediated collaborative processes (Vygotsky, 1978). To understand what learners need to do with a language in the target situation, we need to know what kinds of activities they will be involved in the community of practice (Lave & Wenger, 1991; Wenger, 1998) and how individual actions integrate with the collective activity of the community of practice. For this reason, the

conceptualization of learning needs as what tasks learners have to accomplish cannot reflect the social nature of learning and is not powerful enough to understand and analyze the existing conditions, not to mention to criticize the possible unequal power relations and to achieve greater equality for learners.

Activity Theory provides a new methodological framework for needs analysis. In this framework, learning activity is conceptualized as undertaken by human agents (subject) motivated toward the solution of a problem or purpose (object) and mediated by tools (artifacts) in a community. Expanding the unit of analysis from tasks to activities brings insight into the macro contexts of English learning and using, and can help to find out how English, as linguistic symbol and conceptual tool, mediates the activities of the community of practice. Moreover, according to Activity Theory, the activity system of learning is under constant construction, creation and expansion. Learning needs also change all the time (Hutchinson & Waters, 1987). Activity-based needs analysis will be able to trace the development of learning activities, to identify the changing needs as the object of learning evolves in the ongoing interaction inside and outside the activity system. This critical and developmental stance offers insight for critical needs analysis. Therefore, activity-based needs analysis should be proposed as an advancement from task-based needs analysis. Section 2.4 will present the Activity theory in greater detail.

But to advocate activity-based needs analysis does not intend to refute the use of tasks in describing potential needs of language learning. Activity-based needs

analysis may result in a list of activities that learners in future workplace will be involved in performing. After critical analysis, the activities can then be broken down and designed as learning tasks that can be accomplished through classroom instruction. What is different is that the language-related activities are critically analyzed in terms of how individual action is afforded or constrained by rules and regulational norms, how the division of labour in the community prescribes the horizontally divided tasks and the vertical division of power and status, and what kinds of instruments or tools are utilized to achieve the target of the activity. In this way, the individual's learning needs are explained and analyzed within a specific context of social activity and it offers a basis for further criticism and transformation of the existing conditions.

Based on the above discussion of the development of the unit of needs analysis from text-based to task based, and then to activity-based, it is not difficult to explain the changes in research methodologies in needs analysis. The early exclusive focus on expert performance and data-driven "objective" information about learners makes questionnaire the most important research instrument in collecting pertinent data (Richterich & Chancerel, 1977; Fincham, 1983; Stevenson, 1977; Zughoul & Hussein, 1985). As the ongoing subjective needs of learners become prominent as a part of the learning needs, interviews are increasingly used together with questionnaire survey in relevant needs analysis studies (Frank, 1998; Basturkmen, 1998; Deutch, 2003). Then the need to know more about the specific sociocultural contexts in which learners learn and use language appeal to "the kind of emic

perspective gained not just through survey, interviews, and text analysis, but also case studies and community ethnographies” (Belcher, 2006, p.136). Corpus studies that make use of the authentic oral interactional data in the workplace provide useful information for language skills used in real working situations (Shi et al., 2001; Brown & Lewis, 2003). In-depth case studies (Holme & Chalauisaeng, 2006; Cowling, 2007) fully utilize various methods such as participant observation and semi-structured interviews to present contextualized data for a more emic perspective of needs. Additionally with the more recent recognition that learners, as reflective community members, should be empowered to participate in needs analysis, critical ethnographic needs analysis (e.g. Benesch, 1996; Jassor-Aguilar, 1999) comes into view. How Benesch (1996) helped the psychology students manage the contradictory demands and create possibilities for change as ~~more~~ equal learners has been introduced in 2.3.2. In another instance, through a study with a group of hotel maids (the researcher also accepted the training for a new housekeeper and did the housekeeping at the hotel), Jassor-Aguilar (1999) suggested addressing the hotel maids’ needs in a larger picture of social life by providing language training to expand their possibilities for functioning not just as cheap labor force but as functional members of English speaking societies.

Long (2005) criticizes that “too many of the needs analyses are carried out via semi-structured interviews or, more commonly, written questionnaires” (p. 19) with inadequate sources of informants. He appeals to more empirical studies (rather than intuition-based) that are both triangulated by sources and by methods. The

triangulation of sources (options of sources being literature, teachers, domain experts, and above all learners) requires the researcher to compare different sets and sources of data with one another. The triangulation of methods involves use of different data collection procedures such as language audits, observation, interviews, questionnaire, testing, and any other that fall into the quantitative paradigm. The combination of qualitative and quantitative research methods in needs analysis has been more and more common (Holme & Chalauisaeng, 2006; Bacha & Bahous, 2008), while the triangulation by sources and/or by methods has only been an exception -- used in some studies (Bosher & Smallkoski, 2002; Jassor-Aguilar, 1999). For example, Jassor-Aguilar (1999) made use of the multi-sources from various informants, such as the human resources person, the executive housekeeper, various house-keepers and supervisors, a task force, morning/afternoon briefing, and job and routine descriptions, and conducted the investigation through participant observations, interviews, and questionnaires. Such triangulation of sources and methods enabled Jassor-Aguilar to combine the value of insiders' perspectives with the outsider's intuitions and achieve the reliability of the needs analysis to the largest possible extent.

With the above overview of the development in research on needs analysis, it can be noted that needs analysis is no longer viewed as a separate unit of inquiry. Rather, it is a research process during which both objective expectations and subjective desires should be negotiated, both textual and contextual factors should be considered, and both insider and outsider perspectives should be included. Operationally defined in

this way based on Dudley-Evans & St. John's (1998) broad concept of needs analysis and Benesch's (1996) critical perspective, in the present research, needs analysis involves both the investigation of the objective expectations and subjective desires of the learners in their social contexts through triangulated methods and sources and the critical analysis of how these needs are displayed as the academic and social activities the learners have to accomplish in social and academic interaction, how the perceived needs imply about the learners's understanding of their social identity and how possible changes can be made towards greater equality for the learners.

The next section will provide a detailed introduction of Activity Theory. In the expatiation of this theory, learning needs are identified as the object of the learning activity system; critical needs analysis is conducted through a critical analysis of the interrelation in the activity system; and different perceptions of learning needs are regarded as representation of the multi-voicedness and multi-perspectives of the activity system.

2.4 Activity Theory

Activity Theory (AT) has a long history of development in the late Soviet Union. Its theoretical roots can be traced back to the works of Vygotsky (1978 & 1981) about human consciousness and mental development. But there is some blurring between Vygotsky's socio-cultural theory (SCT) of the development of mind and activity theory (Bedny & Karwowski, 2004). In the former Soviet Union, SCT and AT has

been considered to share some common features, but not regarded as the same. In the west, the complementarities of SCT and AT are recognized and they are written about as a unified set of concepts. In this thesis, I take a similar position to Engestrom's "double-edged notion" of activity theory:

On the one hand, it is necessary to emphasize the unique and self-consciously independent nature of the Soviet cultural-historical research tradition. ... On the other hand, this tradition is ... itself an internationally evolving, multivoiced activity system" (Engestrom, 1993, p.64).

In the present study, I have treated AT as a tree planted in the soil of Vygotsky's sociocultural theory of mental development, as many sociocultural second language researchers have done (e.g. Lantolf (2000, 2004 & 2006), Thorne (2004), etc.), and fertilized by many other sources of thinking about cognition, development and learning (e.g. Bakhtin's (1986) dialogicality, Engestrom's (2001a, 2001b & 2007a) boundary crossing and expansive learning).

2.4.1 The Historical and Theoretical Development of Activity Theory

The historical and theoretical development of AT can be explained by following Engestrom's (2001a) identification of three generations of AT.

2.4.1.1 The First Generation of Activity Theory

The first generation of AT was deeply rooted in sociocultural theory of mental development, which is embedded in the "general genetic law of cultural development" in that it views human mental development happening on two planes:

first it appears on the social plane, and then on the psychological plane (Vygotsky, 1981). Thus, socially meaningful activity is considered as the explanatory principle for understanding consciousness.

Vygotsky's idea of mediation is central to the first generation of AT. He assumes that higher mental functioning and human action on both social and individual planes are mediated by tools and signs, the latter of which refers to cultural artifacts, including language, various systems for counting, mnemonic techniques, algebraic symbol systems, works of art, writing, schemes, diagrams, maps, and mechanical drawing, all sorts of conventional signs, and so on (Vygotsky, 1981). According to Vygotsky, a human individual never reacts directly to environment. The relationship between human agent and objects of environment is mediated by cultural artifacts and tools. Thus human action has a tripartite structure as shown in Figure 2.2. And the appropriate unit of analysis of human action should be this tool-mediated goal-directed action.

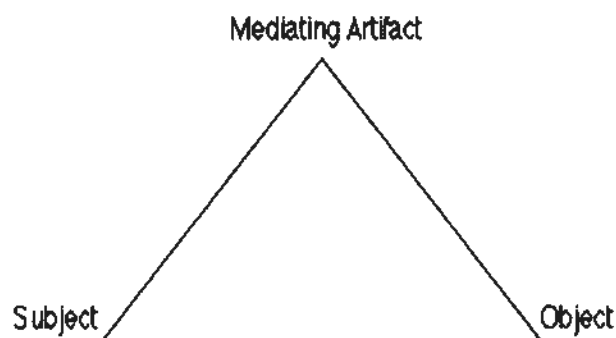


Figure 2.2: Vygotsky's Model of Mediated Activity

2.4.1.2 The Second Generation of Activity Theory

The second generation of AT centers around Leont'ev's (1978) concept of activity. Leont'ev overcame the limitation of the first generation, i.e. the unit of analysis remains individually focused --- there is no recognition of the part played by other human beings and social relations in the triangular model of action. He identifies three level of analysis: operations, actions and activity. Engestrom et al. reformulate Leont'ev's concept of activity as follows:

The uppermost level of collective activity is driven by an object-related motive [or objective]; the middle level of individual or group action is driven by a goal; and the bottom level of automatic operation is driven by the conditions and tools of action at hand (Engestrom, et al., 1999, p.4).

Based on Leont'ev's concept, Engestrom (1987) expands Vygotsky's original model into a model of a collective system, as depicted in Figure 2.3.

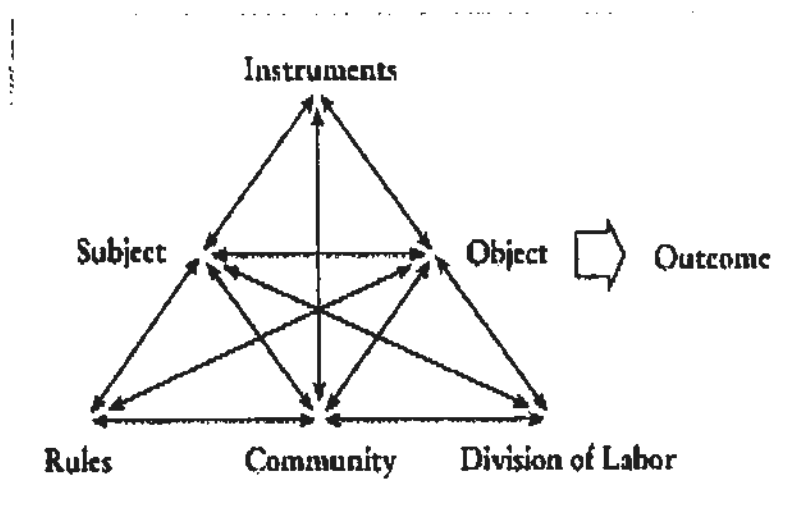


Figure 2.3: The structure of a human activity system (Engestrom, 1987, p78)

In this model, a *subject* is an individual or subgroup whose point of view is taken in the analysis of the activity. The *object* is the target of the activity within this system.

Instruments refer to internal or external mediating artifacts which help to achieve the outcomes of the activity. The *community* is comprised of the participants who share the same object. *Division of labor* refers to the horizontally divided tasks between the community members as well as to the vertical division of power and status. The division of labor within a community involves *rules* and regulational norms, affording or constraining the goings on within this system.

With this reconceptualization of activity, AT has been pushed a huge step forward to focus on the complex interrelations between the individual subject and the community. Studies on AT begins to increase in number. While it was largely limited to studies on play and learning among children in Soviet Union, since the 1970s, radical researchers in the west have applied it in new domains of activity, such as workplace. The idea of internal contradictions as the driving force of change and development in activity systems began to be used as a guiding principle of empirical research. But as Michael Cole points out, the limitation of the second generation of AT is its insensitivity toward cultural diversity (Engestrom, 2001a). To solve this problem, the third generation is developed.

2.4.1.3 The Third Generation of Activity Theory

The major mission of the third generation is to develop conceptual tools to understand dialogues, multiple perspectives, and networks of interacting activity systems. Wertsch (1985) introduces Bakhtin's idea on dialogicality as a way to expand Vygotsky's semiotic mediation. According to Bakhtin, addressivity, the

quality of turning to someone else in an utterance, involves at least two voices: who is doing the speaking and who is being addressed. This dialogicality, together with ideas on social language and speech genres, contributes to our understanding of semiotic mediation and meaning making.

Because the production of any utterance involves the appropriation of at least one social language and speech genre, and because these social speech types are socioculturally situated, the ensuing account assumes that meaning is inextricably linked with historical, cultural, and institutional settings (Wertsch, 1985, p66)

Because of this dialogicality, there are multiple ways of representing reality in approaching a problem, hence the multivoicedness of meaning. As Engestrom et al. (1995) point out, when two or more different activity systems are concerned, multivoicedness of meaning in the different, complementary and also conflicting tools, rules, and patterns of social interaction will inevitably involve dialogic problem solving, which calls for "boundary crossing" between these activity systems through formation of new mediating concepts. Leont'ev's concept of activity is expanded in the sense that there is a higher level of activity, i.e. the activities at the level of larger collaborative activity systems. These activities require learning how to cross boundaries within the collaborative activity systems.

Therefore, in the third generation of AT, the basic model is expanded to include minimally two interacting activity systems (Figure 2.4). In this model, the object (object 1) moves from an initial state of unreflected, situationally given "raw

materials” to a collectively meaningful object (object 2) constructed by the activity system, and to a potentially shared or jointly constructed object (object 3).

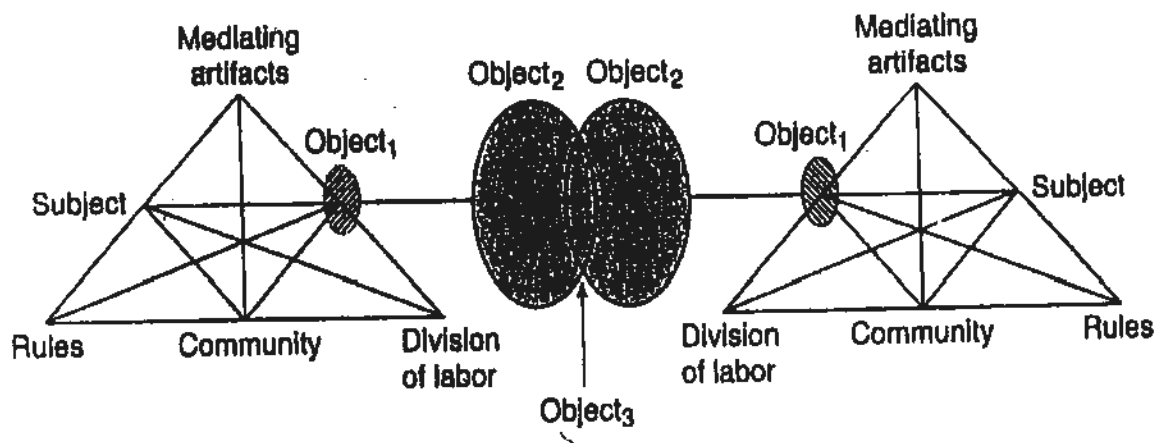


Figure 2.4: Two Interacting Activity Systems as Minimal Model (Engestrom, 2001a, p.136)

2.4.2 Key Tenets of Activity Theory

According to Engestrom (1993; 2001a), there are five principles of AT. These principles highlight key concepts such as mediation, contradiction, expansive learning, externalization and internalization, all of which have provided theoretical insight for the present study.

2.4.2.1 A Collective, Artifact-Mediated and Object-Oriented Activity System

In AT, a collective, artifact-mediated and object-oriented activity system is taken as the prime unit of analysis. Although goal-directed individual and group actions are relatively independent, they are subordinate units of analysis and can only be understood when interpreted against the background of an entire activity system (Engestrom, 2001a). A collective and object-oriented activity system is therefore a more comprehensive unit of analysis. And between the components (e.g. object,

subject, tools etc.) of an activity system, continuous construction is going on. Thus, “[a]n activity system is not only a persistent formation; it is also a creative, novelty-producing formation” (Engestrom, 1993, p.68). The unit of analysis itself, although stable, is inherently dynamic and evolving. It is based on this basic principle that activity-based needs analysis is formulated (see 2.3.3).

2.4.2.2 Historicity

Activity systems take shape and get transformed over lengthy periods of time. Their problems and potentials can only be understood against their own history (Engestrom, 2001a). For example, tools themselves are products of activity systems, and have histories of evolution. So do other components in the activity systems. Therefore, the activity system and its components are always analyzed by considering the history of their evolution that has led to the current situation.

Moreover, in AT, historical development is not only an object of study; it is also a research methodology (Kaptelinin & Nardi, 1997). The basic research method in AT is not traditional laboratory experiments but the formative or developmental experiment which combines active participation with monitoring of the developmental changes of the participants under study. I will go into the details of the developmental method or genetic method (Vygotsky, 1978) in Section 3.1.3 where research methodology is discussed.

2.4.2.3 The Multi-Voicedness of Activity System

As discussed in subsection 2.2.1.3, an activity system is always a community of multiple points of view, traditions and interests. Engestrom (2001a) identifies several reasons of this multivoicedness: different positions for the participants created by the division of labor; the participants' diverse histories that are brought into the system; and the multiple layers and strands of history engraved in its artifacts, rules and conventions carried by the system itself. This multivoicedness is also multiplied in the networks of interacting activity systems and becomes both a source of trouble and a source of innovation.

The multivoicedness of activity system is also reflected in needs analysis. One of the fundamental questions for needs analysts to answer is "who should decide what the language needs are" (West, 1994). To answer this question, West suggests a needs analysis triangle in which three various parties: teachers, students and sponsors (or future employers) are involved (See Figure 2.5). The different perceptions of learning needs by different parties are actually the object of the various activity systems in which they are involved. In some contexts, the triangle projection is not adequate to explain the complexity of needs. In educational contexts, where the top-down institutional policies are reflected in curriculum development and where negotiation with teaching staff is inadequate, there tends to be the institutionally perceived needs which involve more elements of political pragmatism. Therefore, with more activity systems involved, the illustration of the needs analysis will be foursquare or even pentagonal.

When these activity systems interact with each other through the students' participation in all activity systems simultaneously, the multiple perspectives and multi-voicedness inherent in the interaction generate contradictions. In the power-relations regulated by rules, conventions and division of labor, some wishes and needs are realized and fulfilled; others are ignored or even inhibited. So critical needs analysis will have to consider these differently perceived needs before it is able to identify the possible inequality for transformation.

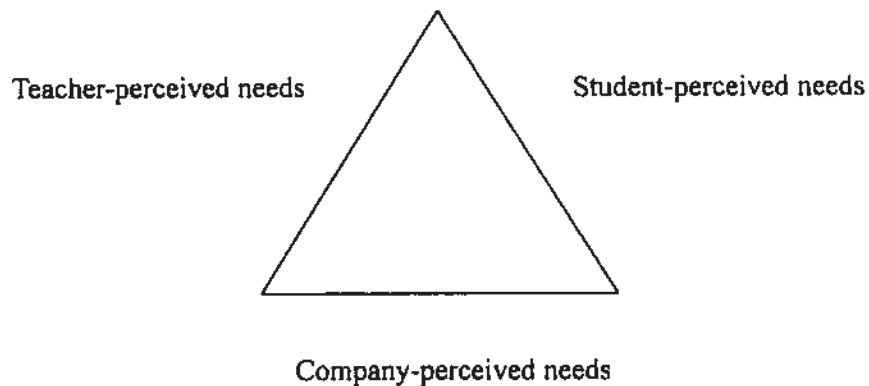


Figure 2.5: The Needs Analysis Triangle (West, 1994, p.6)

2.4.2.4 The Central Role of Contradictions as Sources of Change and Development

With its continuous construction, historical development and multivoicedness as displayed in the previous principles, an activity system is not stable and harmonious. Instead, it is inherently dynamic and characterized by inner contradictions. Contradictions are “historically accumulating structural tensions within and between activity systems” (Engestrom, 2001a, p.137). When the latent tensions or conflicts

are intensified or sharpened, contradictions are aggregated and innovative attempts have to be made for possible solutions to the existing problems, which lead to new qualitative stages and forms of activity. In this way, contradictions become sources of change and development.

There are all together four levels of contradictions within the human activity system, which is presented in Figure 2.6.

- Level 1:** Primary inner contradictions *within* each constituent component of the central activity.
- Level 2:** Secondary contradictions *between* the constituents of the central activity.
- Level 3:** Tertiary contradictions *between* the object/motive of the dominant form of the central activity and the object/motive of a culturally more advanced form of the central activity.
- Level 4:** Quaternary contradictions *between* the central activity and its neighboring activities. (Engestrom, 1987, p.73)

The primary inner contradictions reside in each component of the activity system. For example, in the Chinese context of teaching English at the primary and secondary levels, teachers who want to apply communicative language teaching (CLT) in their class have to compromise or even give it up because their students have to sit for traditional English examinations in which communicative competence is not basically tested. For these teachers (the subject of the English teaching activity system), there is a constant latent tension between, on the one hand, their role as successful teachers who teach students based on what is best for their linguistic development, and, on the other hand, their role as efficient examination helpers responsible for using the most effective way to help students pass the examinations.

Secondary contradictions emerge when an activity system adopts or is “injected” a new element into one of its components from the outside, leading to collision between some old components and the new one. Take the application of CLT as an example again. When the innovative approach is introduced into the existing activity of teaching English as a new conceptual tool, it comes into conflicts with the traditional methods of language teaching and the convention of assessing teacher’s performance according to how many of the students he/she teaches can pass the examinations in most Chinese primary and middle schools. There is also the imbalance in division of labour when, with the same pay, teachers using communicative approaches have to devote a lot more to course design and lesson planning while others sticking to the old way of teaching may do a relatively easier job. Secondary contradictions thus arise between the novel tool and the traditional tool, the rules and division of labor of the existing teaching activity.

Tertiary contradictions appear between the object of the dominant form of an activity and the object of a culturally more advanced form of this activity. Take the CLT case again. In some areas in China, CLT is introduced as a top-down innovation to develop an adequate level of communicative competence in Chinese learners (the object of a culturally more advanced form of English teaching activity), which traditional grammar-translation method fails to do. The innovation may be formally implemented, but actually resisted by the dominant form of English teaching in many schools, namely English instruction following the traditional ways (Yu, 2001; Hu, 2002).

In some cases, resistance towards CLT does not come from the teachers, but from the students. Suppose that a teacher uses CLT in the class, but the students react with resistance, clinging to the old ways of learning English because they think the traditional ways help them better with examinations. This is an instance of quaternary contradictions: those between the central activity and its neighbouring activities including object-activities, instrument-producing activities, subject-producing activities, and rule-producing activities.

Engestrom (1987) represented four levels of contradictions within the human activity system as shown in Figure 2.6:

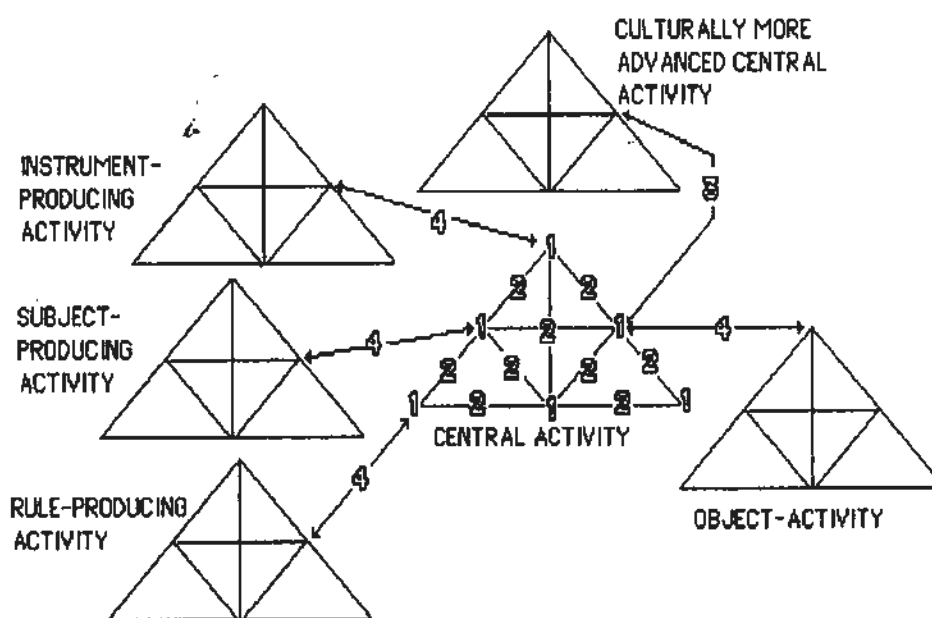


Figure 2.6: Four Levels of Contradictions within the Human Activity System (Engestrom, 1987, p.72)

The above discussion of contradictions in activity system indicates the significance of identifying and analyzing contradictions for possible solutions to existing problems and potential development of an activity. As the CLT examples show, the difficulties of applying CLT in China can be best understood from the different levels

of contradictions. And solutions can be formulated in response to the challenges and resistance at different levels.

Because contradiction is a central concept in the present study, it deserves elaborate explanations. Next, as the result of the solutions to contradictions, expansive transformation comes as the last but not the least basic principle of activity system.

2.4.2.5 The Possibility of Expansive Transformation in Activity System

Activity systems move through relatively long cycles of qualitative transformation through individual or collective efforts when its contradictions are aggregated. An expansive transformation is accomplished when the object and motive of the activity are reconceptualized to embrace a radically wider horizon of possibilities than in the previous mode of the activity (Engestrom, 2001a). Borrowing the concept from Vygotsky, Engestrom metaphorizes the cycle of expansive transformation as a collective journey through the Zone of Proximal Development of the activity.

It is the distance between the present everyday actions of the individuals and the historically new form of the societal activity that can be collectively generated as a solution to the double bind potentially embedded in the everyday actions. (Engestrom, 1987, p.174).

To sum up, within the framework of Activity Theory, the activity of learning can be conceptualized as oriented by the object of learning, namely the learning needs as perceived by the subjects (the learners) of the activity system which keeps interacting with other activity systems. The different perceptions of learning needs by different

parties are actually the objects of various activity systems in which these parties are involved. Contradictions that are generated in the interactions of different activity systems will have to be resolved through critical needs analysis which comprises, first of all, the investigation of these different perceived learning needs, then, the identification of possible inequality, and finally, the taking of action for transformation towards greater equality.

The next section will turn to expansive learning, a new approach to understanding and studying learning in the framework of Activity Theory, seeking for theoretical perspectives to analyze and observe learning with a critical stance.

2.5 Expansive Learning: A New Approach to Understanding and Studying Learning

The previous sections explain Activity Theory in terms of its theoretical origins, historical development and key tenets. It is based on these perspectives and tenets that the theory of expansive learning is developed. In this section, I will elaborate on expansive learning in terms of what expansive learning is and how it takes place. I will also highlight two important forms of expansive learning: concept formation and boundary-crossing, both of which will be key conceptualizations in the present research.

2.5.1 What is Expansive Learning

Activity Theory is aimed at understanding the mental capabilities of a single human

being through the cultural and technical mediation of human activities. So, in essence, it is a conceptual system about how learning happens in collective activity systems. To understand the theory of expansive learning, we need to go back to the sociocultural theory of learning, which is embodied in the general genetic law of cultural development and the conceptualization of internalization and Zone of Proximal Development.

2.5.1.1 The General Genetic Law of Cultural Development

The most fundamental assumptions of the sociocultural theories are that mental functioning in the individual can be understood only by examining the social and cultural processes from which it derives. The social origin of mental processes is outlined in Vygotsky's general genetic law of cultural development. According to him, cultural development, namely learning, appears on two planes: first on the social plane, and then on the psychological plane.

First it appears between people as an interpsychological category, and then within the child as an intrapsychological category. ... [I]t goes without saying that internalization transforms the process itself and changes its structure and functions. Social relations or relations among people genetically underlie all higher functions and their relationships (Vygotsky, 1981, p.163).

This formulation means that there is an inherent *connection* between the two planes of functioning, that analytic priority should be given to the interpsychological (between people) functioning, and that the intrapsychological functioning (within the individual) is derivative, as emerging through the mastery and internalization of

social processes. Such a connection implicitly rejects the primacy given to individual function and to the seemingly neat distinction between social and individual process that characterize many contemporary approaches in psychology (Wertsch & Tulviste, 1999; Wertsch & Stone, 1999).

2.5.1.2 Internalization

Internalization is the process whereby certain aspects of patterns of activity that had been performed on an external (social) plane come to be executed on an internal (psychological) plane (Wertsch, 1985). According to Wertsch & Stone (1999), it is the following two unique premises that make Vygotsky's notion of internalization different from those in other psychological theories.

First, for Vygotsky, internalization is primarily concerned with social processes. Second, Vygotsky's account is based largely on an analysis of the semiotic mechanisms, especially language, that mediate social and individual functioning. Thus internalization is viewed as part of a larger picture concerned with how consciousness merges out of human social life. The overall developmental scheme begins with external social activity and ends with internal individual activity (Wertsch & Stone, 1999, p.365).

But internalization does not always happen automatically as a result of social practice. Sometimes, when the mediation of tools and signs is not powerful enough to cause internalization, the mediation of other participants of social interactions becomes crucial. To explain this, the concept of "zone of proximal development" comes into being.

2.5.1.3 Zone of Proximal Development

Zone of Proximal Development (ZPD) is a special case of Vygotsky's general concern with the genetic law of cultural development. It is the dynamic region of sensitivity in which the transition from interpsychological to intrapsychological functioning can be made (Wertsch, 1985). Vygotsky defines ZPD as the distance between "actual developmental level as determined by independent problem solving" and the higher level of "potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p.86). ZPD is not the physical place situated in time and space; rather, it is a metaphor for the interactional space within which the internalization of social interactive processes happens; it is a metaphor for observing and understanding how mediational means are appropriated and internalized (Donato, 2000).

It is based on these key conceptions of sociocultural theory of learning that expansive learning theory is developed. The next subsection will go further to explain how exactly learning is formulated and conceived in this learning theory.

2.5.1.4 Expansive Learning as Multi-Dimensional Collective Transformation of Activity

Beteson (1972, cited in Engestrom, 1987) distinguished between three levels of learning:

Learning I: the acquisition of the responses deemed correct in the given context

Learning II: the acquisition of the deep-seated rules and patterns of behavior characteristic to the context itself

Learning III: the radical question of the sense and meaning of the context and the construction of a wider alternative context

In the theory of expansive learning, learning III is seen as learning activity which has its own typical actions, tools, object and outcome.

The essence of learning activity is production of objectively, societally new activity structures (including new objects, instruments, etc.) out of actions manifesting the inner contradictions of the preceding form of the activity in question. Learning activity is *mastery of expansion from actions to a new activity* (Engestrom, 1987, p.100, italics original).

Therefore, according to Engestrom (1999), expansive learning is “a historically new type of learning which emerges as practitioners struggling through developmental transformations in their activity systems, moving across collective zones of proximal development” (p.3). But Engestrom thought it necessary to expand the theoretical framework beyond the vertical idea embedded in Vygotsky’s Zone of Proximal Development and incorporate the horizontal dimension in such zones. He (1999) reconceptualized learning as development of both horizontal movement across *borders* and vertical movement across *levels*.

The vertical dimension of development is realized when subjects of an activity system progress from a culturally less advanced form of activity to a culturally more advanced form. It is the process in which the object or motive of the current activity are reconceptualized and transformed at different levels of development.

However, the world of work is moving toward increasingly networked, hybrid and weakly bound forms of organization occupied by multiple activity systems, and is increasingly pressed for collaboration through horizontal movement and boundary crossing. Therefore, “expansive learning needs to take shape as renegotiation and reorganization of collaborative relations and practices between and within the activity systems involved” (Engestrom, 2001b, p.1). This is the kind of learning that takes place when two or more activity systems interact. It is learning that cross boundaries. This horizontal dimension of learning has become focus in many Activity-Theory-inspired research studies. Among them, ‘boundary crossing’ is an emerging tool.

2.5.2 The Expansive Learning Cycle

The basic driver for expansive learning is contradictions between and within activity systems. The contradictions prompt the subject within an activity system to invent new “instruments” for the resolution using new given resources, resulting in successful expansive learning. But as Engestrom (1999) points out, “the internal contradictions of the given activity system in a given phase of its evolution can be more or less adequately identified, and any model for future which does not address and solve those contradictions will eventually turn out to be non-expansive” (p.3-4). Therefore, successful expansive learning usually follows a general process of stepwise formation and resolution of internal contradictions in activity systems, as shown in Figure 2.7:

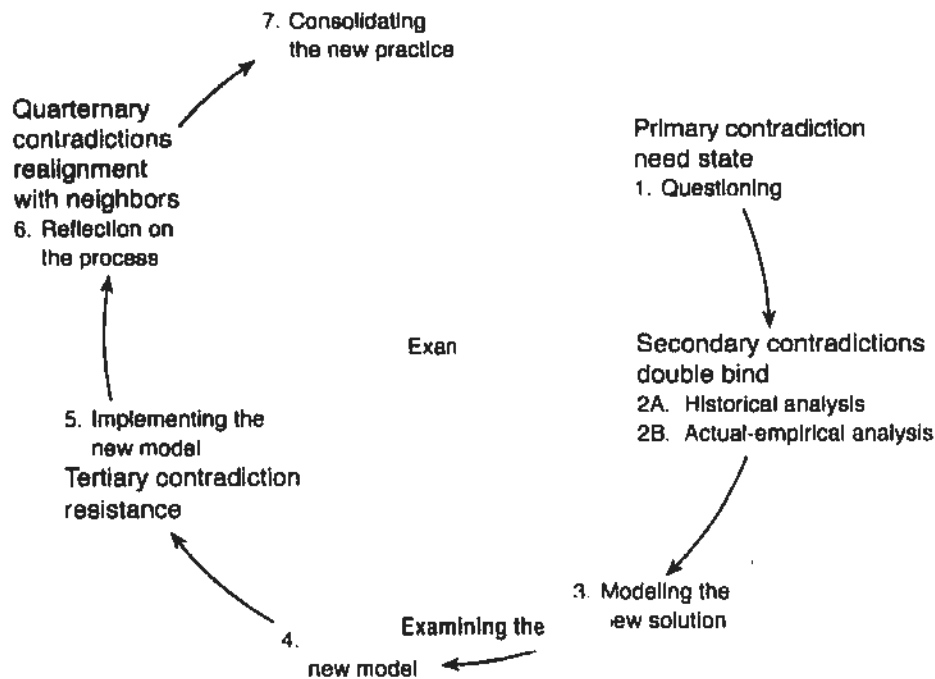


Figure 2.7: The Expansive Learning Cycle (Engestrom, 2001a , p.152)

The expansive cycle begins with individual subjects questioning the accepted practice, and it gradually expands into a collective movement through a series of strategic actions such as analysis, modeling, examining, implementing and reflecting. Together these actions form an expansive cycle or spiral, which is a process of construction and resolution of successively evolving contradictions in the activity system.

Primary contradictions may be identified in a need state, which refers to the peculiar state of indeterminant, temporarily objectless desire brought about by a breakdown in the sequence of activity when a need cannot be satisfied by the previous set of means of activities or when the existing operational and technical means do not correspond to the previous needs.

Deepening analysis is required when secondary contradiction appears as double bind. “In double bind situations, the individual involved in an intense relationship receives two messages or commands which deny each other” (Engestrom, 1987, p.139). The inner secondary contradictions of double bind uncompromisingly demands *qualitatively new instruments* for its resolution, therefore leading to the modeling, examining and implementing of a new model.

But the new instruments can only be implemented in tasks which represent the points of probable breakthroughs into the qualitatively more advanced form of practice. In carrying out these tasks with the help of the new instruments, the participants of the activity system face intense conflicts between the old and the given new ways of doing and thinking - the tertiary contradiction. The conflicts then take the forms of fear, resistance, stress and other intense psychic conflicts within individuals and collectives.

As the expansive learning cycle moves to the strategic action of reflection, quaternary contradictions, between the neighbouring activity systems and the central activity system, may need to be considered and resolved for realignment. In sum, the expansive learning process is an evolving process of strategic actions seeking resolutions of the constant contradictions within and between activity systems.

2.5.3 Expansive Learning as Concept Formation

The introduction of concept formation into the theory of expansive learning is a

useful example of the complementarity of vertical and horizontal dimensions of learning. In his classic work on concept formation, Vygotsky (1987) presented the process of concept formation as a creative meeting between everyday concepts growing upward and scientific concepts growing downward (see Figure 2.8). But it was criticized by Engestrom (1987) in that learning in this way retained the basic singular directionality of vertical movement. Rather, concept formation, the process of how new mediational tools come into being and is utilized in the current activity system to create new form of activity, reflects both vertical and horizontal development.

According to Engestrom (2004), learning begins from a theoretical, abstract, and simple idea and is achieved by transforming it into practical, concrete, and complex manifestations. “A new theoretical idea or concept”, as he explains, “is initially produced in the form of an abstract, simple explanatory relationship, a ‘germ cell’. This initial abstraction is enriched and transformed, step-by-step, into a concrete system of multiple, constantly developing manifestations (p.151)”. The formation of concept in the expansive learning cycle, as shown in Figure 2.7, finally results in the appearance of a new form of practice.

In an expansive learning cycle, the initial simple idea is transformed into a complex object, into a new form of practice. At the same time, the cycle produces new theoretical concepts – theoretically grasped practice – concrete in systemic richness and multiplicity of manifestations. (Engestrom, 2004, p.151)

In a study of expansive learning in a hospital setting in Finland through a project

called “Boundary Crossing Laboratory”, concept formation in the laboratory sessions started out with the declared concepts (or scientific concept, as Vygotsky termed it) of ‘critical pathways’, which, when met and confronted by experienced concepts (or everyday concept), move horizontally towards the proposals of new concepts until, finally, ‘care agreement’ received mutual agreement and was implemented, leading to new form of practice in the hospital. In Figure 2.9, the rejection from below is the embodiment of contradictions providing power for development. The negotiation in between the upper and the lower (vertical dimension of learning) is accompanied with horizontal dimension of learning from abstract to concrete, from simple to complex.

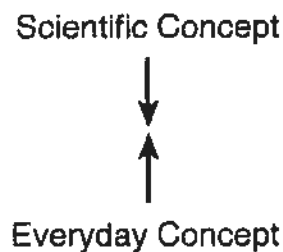


Figure 2.8: The Basic Vygotskian View of Concept Formation (Engestrom, 2001a, p.154)

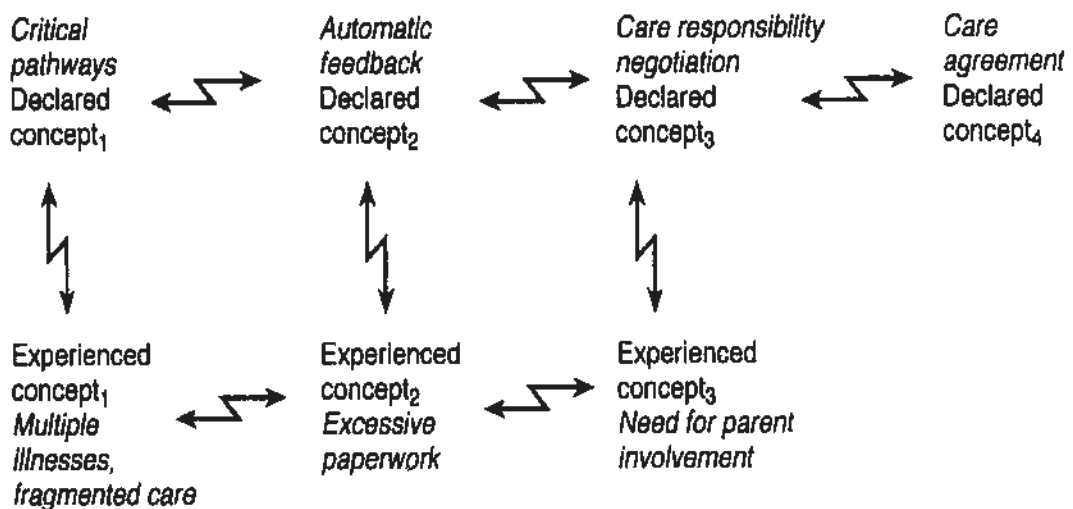


Figure 2.9: Expanded View of Directionalities in Concept Formulation (Engestrom, 2001a, p.154)

The process of concept formation in workplace is revealing in educational context, especially when new educational policies, technologies or teaching methodologies are introduced. It will be significant to understand learning from this perspective, which, so far, has not been given adequate attention in the field of ESP.

2.5.4 Expansive Learning as Boundary-Crossing Actions

The horizontal dimension of learning is best embodied in boundary-crossing. In Engestrom et al.'s (1995) study, "boundary crossing" is formulated as the crossing of boundaries between different activity systems. The boundary crossing interaction between activity systems (e.g. the activity systems of two teacher teams or the activity systems of two production departments in an industrial plant) and the conditions for the creation and evolution of boundary objects were analyzed, leading to the conclusion that "[b]oundary crossing entails stepping into unfamiliar domains. It is essentially a creative endeavor which requires new conceptual resources. In this sense, boundary crossing involves collective concept formation" (p. 333). Following this concept of "boundary crossing", Hall et al. (2007) studied how two work organizations, a research group and their statistical advisors, interacted to create new statistical concepts over time, space and people. It was shown that learning about new technical concepts could be realized at a collective level of analysis through local processes of talk-in-interaction.

In order to strengthen the new focus on horizontal dimension of learning, Engestrom (2001b) later reformulated expansive learning actions as boundary-crossing actions.

The ideal-typical sequence of such actions is presented in Figure 2.10, following the expansive learning cycle in Figure 2.7.

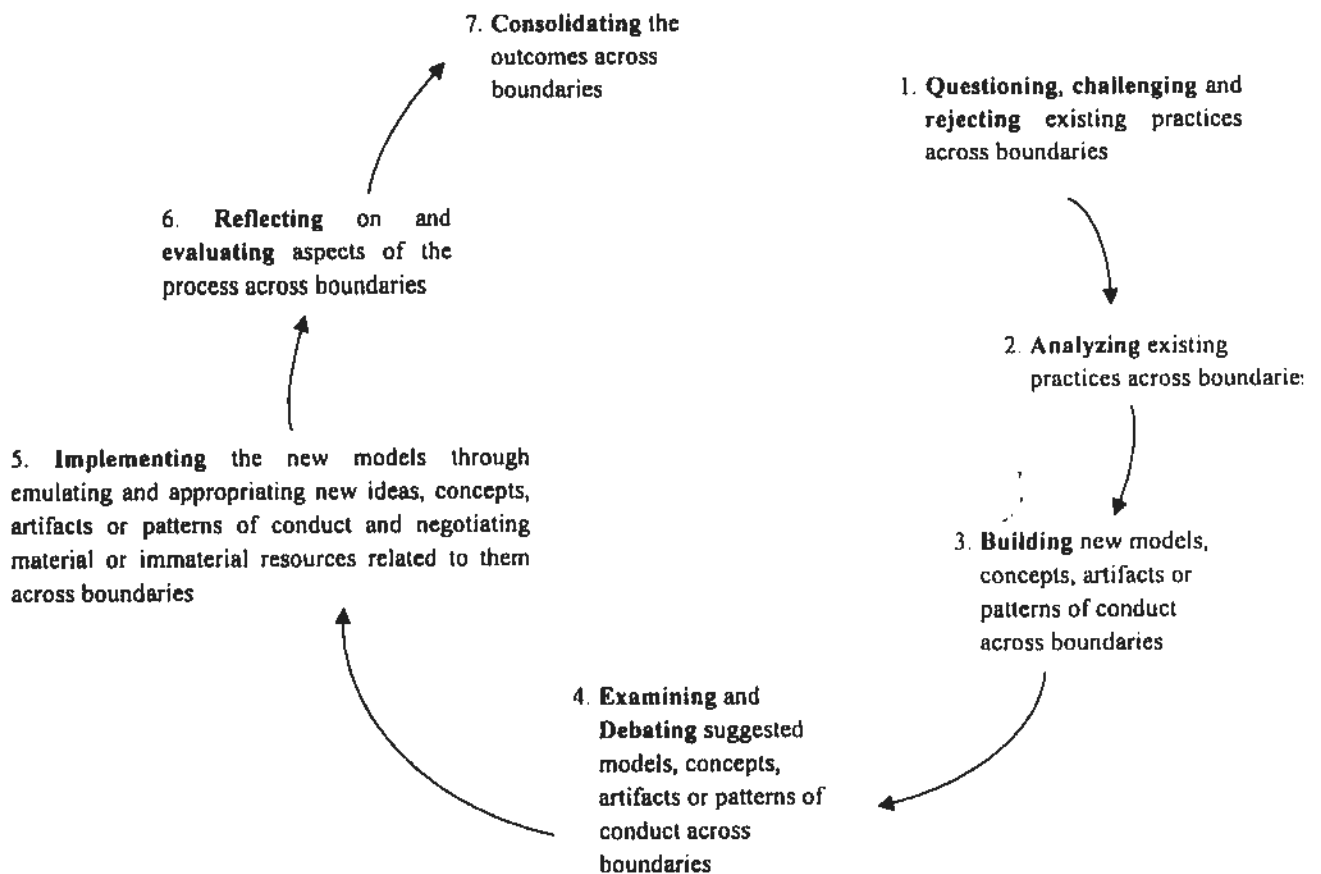


Figure 2.10: The Boundary-Crossing Actions in an Expansive Learning Cycle

To be successful, boundary-crossing must involve two-way interaction and mutual engagement and commitment to change in practice. Its eventual success is also determined by the broader context of transformation in the activity system involved. Therefore some learning actions in boundary-crossing can only be explained as learning actions with expansive potential, as are the cases in Engestrom et al.'s (1995) study.

2.5.5 The Need to Study Expansive Learning in Educational Contexts

The study of expansive learning through interventionist research has been more frequently conducted in workplace practice (e.g. Engestrom 1993, 2001a, 2001b, 2007a, 2007b; Engestrom et al., 1995; Kent, et al., 2007) and relatively less in educational contexts (Engestrom, et al., 2002; Nelson & Kim, 2001; Tsui & Law, 2007). A lot of discussions based on the context of workplace organizations may not apply to educational context. Therefore, it is significant to study how expansive learning takes place in educational context, especially classroom context where instruction really happens. To this end, a new model to study expansive learning is needed. Such a model should be able to explain how expansive learning takes place in classroom instruction. It is therefore relevant to the teaching method that is used inside the class.

So far, I have introduced the development of needs analysis and highlighted the significance of conducting critical activity-based needs analysis. To this end, I propose Activity Theory as a powerful analytical tool. In the expatiation of this theory, expansive learning emerges as an innovative theory of learning that can trace the development of individual learning actions together with collective learning activity, propelled by the contradictions between and within the activity systems. Critical needs analysis can therefore be reconceptualized as a two-staged process: First, it is the identification of the different perceived learning needs in a specific educational context which arouse inner contradictions and become sources of potential changes; second, it is the potential transformation of the current activity

systems through the use of new mediational tools. The potential of genre-based pedagogy as such a mediational tool is considered in the next subsection.

2.6 Genre-based Pedagogy: A New Mediational Tool in Expansive Learning

In this section, three perspectives of genre theories, the SFL School, the New Rhetoric Approach, and the ESP school, are discussed to provide an integrative and critical conception of genre in the genre-based pedagogy (GBP) used in the EFL and ESP context relevant to the present research. I have drawn on Activity Theory to reconceptualise GBP as a mediating tool in the ESP instruction. And the reasons why GBP was used as a mediating tool in the present research are summarized. Finally, a GBP mediated expansive model is formulated based on the multiple dimensions of expansive learning theory presented in the previous section.

2.6.1 Genre and Genre-Based Pedagogy

Traditionally, the term *genre* is used to refer to analyses of the conventions of form, style, characterization, plot structure, and other features of works of literature (Johns, 2003). More recently, it has been used in a range of educational contexts to refer to “the recognisable and recurring patterns of everyday, academic and literary texts that occur within particular cultures” (Hammond & Derewianka, 2001, p.186). Such a theoretical rethinking of genre connects the recognition of regularities in discourse types with a broader social and cultural understanding of language in use (Freedman & Medway, 1994).

Despite the fact that genre has become “one of the most important and influential concepts in language education (Hyland, 2004, p.5), the term remains “a fuzzy concept” (Swales, 1990, p.33) because there are different ways that genre is understood and different implications these understandings have for teaching in different contexts. People tend to follow Hyon’s (1996) classification of three interrelated, yet distinct, genre theories: the Systemic Functional Linguistics (SFL) School, the New Rhetoric (NR) Approach, and the ESP school. These genre theories provide different theoretical perspectives on genre in terms of their intellectual roots, the weight they give to either context or text, and the educational contexts and goals in genre-based pedagogy. One of the foci of the present study is on learning initiated by GBP in the instruction of medical English. Therefore, a discussion of the perspectives on genre from the three schools is necessary because it enables the researcher to identify the similarities and differences so as to formulate a conception of genre most suitable for the present research.

2.6.1.1 The Systemic Functional Linguistics School

Genre in Systemic Functional Linguistics (SFL) is seen as a “staged, goal oriented social process” (Martin, 1984, p.25). It is staged because it usually makes use of more than one phase of meaning to work through a genre; goal-oriented because unfolding phases are designed to accomplish something and we feel a sense of frustration or incompleteness if we are stopped; social because we undertake genres interactively with others (Hyland, 2004).

Following Halliday's conception of linguistics as a set of systems for creating meaning in social contexts and centred within the theory of systemic functional linguistics, the SFL school sees texts as being connected to particular contexts at two levels: register and genre. When people create a text they first make choices in register along three broad dimensions: field (the activity going on), tenor (the relationships between participants) and mode (the channel of communication) (Halliday, 1978; Halliday & Hasan, 1989). The second level of text-context interaction is genre, where linguistic choices are influenced by the writer's social purposes in using language (Christie & Martin, 1997).

In SFL school, genre-based instruction have been used mainly in primary and secondary schools and, more recently, in adult immigrant English education and workplace training programs with the goal to help students become successful readers and writers of academic and workplace texts as well as to empower them from minority and other nonmainstream groups with linguistic resources for social success.

The SFL school of genre believes in the effectiveness of explicit genre instruction for language learning and is considered by some (e.g. Hyland, 2004; Hyon, 1996) to be the most pedagogically mature and successful of the three genre theories. There have been several instructional frameworks for implementing GBP in this school. The basic model always embraces three main stages: deconstruction (or modelling), joint construction, and independent construction (e.g. Callaghan & Rothery, 1988; Martin, 1999). Take a genre-based teaching and learning model used by Martin as an

example. In Martin's (1999) model (see Figure 2.10), the teaching and learning process is divided into three stages: *deconstruction*, *joint construction* and *independent construction*. Learning within the process can begin at any point depending on the students' needs. At all stages of this cycle, the social context of the genre and field knowledge required for the writing task are considered and made explicit. The deconstruction stage is a critical analysis of models of the genre under focus. The joint construction stage foregrounds collaboration between the participants (both the teacher and the students) of the learning process in preparation of the text, and the individual construction stage focuses on the independent production of a text by each student. In this learning process, the teacher plays a scaffolding role by giving guidance within students' Zone of Proximal Development (Vygotsky, 1978, for a detailed explanation of ZPD see 2.3.1.3). In this framework, learning happens in the process of "scaffolding", i.e. the student/teacher interaction as the teacher's modeling, questioning, prompting and commenting guides learners to slowly and systematically articulate their knowledge and sustains the understanding of the genre until a shared conception is reached. The critical orientation of this model is that students and teacher can engage in a critical analysis of the target genre, questioning the cultural values behind its structure and purpose and re-writing/re-designing it as a different genre.

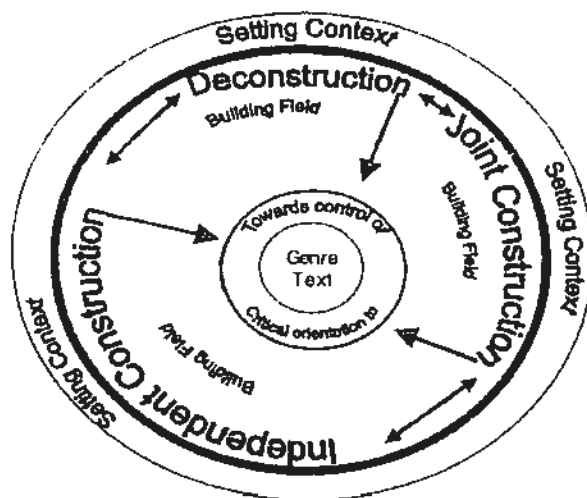


Figure 2.11: A Genre-based Teaching and Learning Model (Martin, 1999, p.131)

2.6.1.2 The New Rhetoric Approach

The New Rhetoric (NR) Approach follows Bakhtin's notion of dialogism (for an explanation of dialogism see 2.2.1.3) and conceptualizes genre as more flexible, plastic, and free than involving regularities and conventions. Genre is viewed as a form of social action that is "centred not on the substance or the form of the discourse but on the action it is used to accomplish" (Miller, 1994, p.24) and as "a flexible instrument in the hands of expert community users" (Hyland, 2004, p.36).

Unlike the SFL school, the NR perspectives of genre are not informed by a linguistic framework; rather, as Hyland (2004) points out, they draw on postmodern social and literary theories (e.g. Bakhtin, 1986) and North American research into L1 rhetoric and composition (e.g. Freedman & Medway, 1994). More attention has been devoted to investigating how the linguistic similarities of texts are related to regularities of social activity than to describing the instructional implication of such similarities.

The educational context of the NR approach has always been university and professions. In line with NR's theoretical focus on sociocontextual aspects of genres is the concern with its role in helping university students and novice professionals understand the social functions or actions of genres and the contexts in which these genres are used (Hyland, 2004). Therefore, NR has generally lacked explicit instructional framework for language teaching. Actually, a number of researchers in the NR fields have expressed doubts over the usefulness of explicit instruction of genre knowledge in the classroom. For example, Freedman (1993) proposes that explicit genre teaching has only restricted value in improving students' writing. Instead, as she claims, genre teaching is generally "unnecessary" (p. 245) and can even be dangerous if the instructor has inaccurate genre knowledge. Other reasons for such scepticism originate from the view that genre is so "shifting and variable" that it cannot be taught statically and the concern that "genres become artefacts for study rather than resources for communication" because of the "inauthentic context" represented by the classroom (Hyland, 2004, p.39). Most importantly, NR claims that the focus on modelling instruction of genres can easily fall into the dangers of regarding genres as "materially objective things" and "fixed templates" (Hyland, 2004, p.42) and therefore fails to help learners develop effective critical literacy.

2.6.1.3 The English for Specific Purposes School

The intended context, audience and goal of the English for Specific Purposes (ESP) school of genre can be clearly identified in Hyland's (2004) summary:

Researchers in English for Specific Purposes (ESP) are interested in genre as a tool for understanding and teaching the kinds of writing required of *non-native English speakers in academic and professional contexts*. The ability to function competently in a range of written genres is often a central concern for ESL learners as it can determine their access to career opportunities, positive identities, and life choices. As a result, ESP investigates *the structures and meanings* of texts, the *demands* placed by academic or workplace contexts on communicative behaviors, and the *pedagogic practices* by which these behaviours can be developed. (Hyland, 2004, p.43, italic added by author for emphasis)

A most commonly cited definition of genre is offered by Swales: genres are “communicative events” that are characterized both by their “communicative purposes” and by various patterns of “structure, style, content and intended audience” recognized by members of the “discourse community” (Swales, 1990, p. 58). According to Hyland (2004), such a conceptualization of genre is rooted in the eclectic theoretical foundation that steers between the position of SFL and NR, i.e. on the one hand, it draws on the SFL’s understanding of text structures and principles of pedagogy; on the other, it employs the NR’s notions of dialogism and contextual situatedness. At the same time, the ESP’s intended context and audience bring about a cross-cultural and Second Language (L2) dimension that is often lacking in SFL and NR work.

2.6.1.4 Towards Integrative and Critical Perspectives of Genre Study

To summarize, the three schools of genre theories are similar in that they all see language as a central feature of human behaviour, which, through genres, helps to

construct meaning and social context. Therefore, the relationship of writing to particular contexts becomes their common goal. However, the three schools differ in their theoretical roots, their educational contexts, their focus, and their application of genres in the classroom. For a concise and cogent summary of these three perspectives on genre, see Hyland, 2004, pp. 50 --51.

With the evolution of the genre movement, there has been a tendency towards the complementation and integration among these different perspectives, which indicates that any genre study or genre-based pedagogy can be justified as long as it is effective for its intended context and goals. For example, some First Language (L1) scholars in the NR fields have followed the SFL school and become more concerned with the application of genre knowledge in instruction, such as Freedman and Medway's work *Learning and teaching genre*. Some ESP scholars borrowed from NR the contextual and functional issues to define the texts and aims for GBP (e.g. Swales, 1990; Bhatia, 1993). And in the SFL school, it has been realized that a balance should be struck between modelling instruction of genres and critical analysis for development and change, the latter of which is learned from the critical stance of the NR school (e.g. Cope & Kalantzis, 1993).

Also, in genre studies, more and more scholars draw our attention to a critical orientation in genre analysis and GBP. Genre analysis reflects ESP's traditional attention to linguistic features of texts, their rhetorical purposes, and pedagogical application, but genre analysis should go beyond text analysis and be used as

“discourse analysis as explanation” (Bhatia, 1993, p.10) to give the place for “a critical, ideological approach in the teaching of academic and professional texts” (Hyon, 1996, p.716). The power and politics of genre are discussed by Bhatia (1997). He pointed out two aspects of genre, which are seemingly contradictory but actually complementary: generic integrity and the propensity for innovation. Generic integrity is the product of the conventional features of a specific generic construct which often constrains the use of linguistic resources. But within generic boundaries, experienced users of genre often manage to exercise considerable freedom to manipulate generic conventions, or even to create new forms of discourse. As for newcomers to the generic boundaries, Hyland (2004) claimed that a critical understanding of the genres of the powerful not only provides them access to those genres, but also allows them to see how genres represent the interests of the powerful and how they can be scrutinized and challenged, turning “transmission pedagogy” to “transformation pedagogy”.

The present research tries to gain a foothold among these different perspectives and benefit from the insight brought about by an eclecticism of genre theories. Aiming at non-native tertiary-level ESP learners in the EFL context, it will draw on ESP’s concern with academic and professional genres and make use of the genre teaching model offered by the SFL school in an intervention study. The NR’s macroscopical focus on social purposes and contexts will be realized in needs analysis in target learning and working situations. The SFL’s microscopical focus on text structures displayed in both register and genre levels will be utilized to investigate how

teaching and learning happen within the genre-based pedagogy. The theoretical framework that combines these perspectives into an effective whole is Activity Theory. The next subsection will try to formulate genre from the perspectives of Activity Theory and relate it to critical needs analysis.

2.6.2 The Activity Theory of Genre

In 2.3, the importance of carrying out critical activity-based needs analysis from the perspective of Activity Theory is emphasized. In this subsection, genre is reconceptualised and genre analysis is related with activity-based needs analysis in the Activity Theory framework.

2.6.2.1 Reconceptualizing Genre in the Activity Theory Framework

- As previously discussed, the three schools of genre theories differ from each other in their emphasis on text and/or context: while the ESP and SFL school focus more on textual structures and relevant instruction in classroom, the NR approach stresses the social action that are realized through genres.

The SFL school addresses the text-context interaction at two levels: register and genre, but the unit of analysis remains largely text-as-discourse. The NR's concept of genre as operationalized social action (Miller, 1994) provides us a more dynamic view, as Russell points out below:

Genres are not merely texts that share some formal features; they are shared expectations among some groups(s) of people. Genres are ways of recognizing and predicting how certain tools (including vocalizations and inscriptions), in

certain typified–typical, reoccurring-conditions, may be used to help participants act together purposefully (Russell, 1997, p.513).

A more dynamic and interactive view of genre can be conceptualized from the perspective of Activity Theory by linking the macro-level social and political structures (as stressed by NR) with the micro-level actions of genre-based learning (as focused by SFL). In 2.4, an activity system is conceptualized as ongoing, object-motivated, historically conditioned, dialectically structured, tool-mediated human interaction. It is mutually constructed and reconstructed by subjects in a community who share the same object of activity to achieve the outcome through the mediation of internal or external tools. The Activity Theory framework makes possible the discovery of the recognizable and recurring patterns of academic language (genres) that a certain field of professionals utilizes in their communities of practice. As Smart (1998) notes, “a set of workplace genres can be seen as an element in an “activity system” --- a local sphere of collaborative endeavor, where intellectual accomplishment is enabled and shaped by a matrix of physical settings, symbol systems, analytic methods, technologies, and structured social interaction” (p. 112).

From this perspective, the activities in ESP field can be reconceptualised as activity systems that are made up of both experienced professionals and novice who use genres as mediational tool to achieve certain social purposes. Hence, the unit of analysis of genre is expanded from text to activities. This expansion allows genres to be located as tool-in-use in an activity system that can be analyzed in its historical

development and its interaction with other components such as division of labour and rules.

To enable the Activity Theory analysis of genres, Russell (1997, pp.513-519) suggests a four-step process:

- a. Reconceptualizing genres as *typified ways* of purposefully interacting in and among some activity system(s) rather than as a set of formally definable text features that certain texts have in common across various contexts.
- b. Reconceptualizing discourse (vocalizations and inscriptions) as *one kind of tool* among many others and relating genres to other kinds of material actions, i.e. genre is the typified use of material tools of many types by an activity system.
- c. Reconceptualizing genres as *mediator* of the individual actions with others in collectives (activity systems) to create stabilized-for-now structures of action and identity.
- d. Reconceptualizing genre as *operationalized social actions* that helps account for change in individual through appropriation.

The reconceptualization of genre from the perspective of Activity Theory treats “context not as a separate set of variables but as an ongoing, dynamic accomplishment of people acting together with shared tools, including – most powerfully – writing” (Russell, 1997, p.509); context is not the container of texts, rather, it is the system, the collectives that constructs, and are constructed and reconstructed by individual appropriation of genres. In this way, the Activity Theory of genre not only addresses the problems caused by the division of text and context, but also unfolds the dialectical relations between individual actions (newcomers’ appropriation of genres and experts’ innovative use of genres) and collective

activities (the formulation of genres in the community of practice). Most importantly, the change and development of the community of practice can also be explained, as Russell (1997), borrowing from Engestrom (1987), states:

Moreover, as an individual appropriates (learn to use) the ways with words of others, they may (or may not) also appropriate the object/motives, and subjectivity (identity) of the collective, or a new activity system. The process of learning (to write) new genres is a part of a process of expanding one's involvement with activity systems. (Russell, 1997, p. 516)

With the Activity-theory reconceptualised genre, if we move the community of practice in the workplace to educational context, it will be possible to consider the role of GBP in the ESP course. We will find, like genre, GBP mediates the activity system of EMP instruction in a similar way that genre mediates the formulation of the activity system of professionals. The expansive learning that is brought about by this mediation will be the focus of next subsection. Before that, it is necessary to reorientate genre analysis within the ideas central to critical needs analysis.

2.6.2.2 Genre Analysis in the Activity-Based Needs Analysis

In 2.1.3, activity-based needs analysis is suggested as a more advanced form of needs analysis because it helps to bring insight into the macro contexts of English learning and using, and to find out how English, as a linguistic symbol and conceptual tool, mediates the activities of the community of practice. It also helps to explain how individual actions integrate with the collective activity of the community of practice. Above all, it enables the tracing of the development of learning activity, to identify

the changing needs as the object of learning evolves in the ongoing interaction inside and outside the activity system.

In activity-based needs analysis, after identifying the activities that learners as future professionals will have to be involved in, the Activity Theory analysis of genres can be made use of to further analyze these activities. Genres will be identified as tools or mediators of the individual learning actions in the collective learning activity system to create stabilized-for-now structures of action and identity.

Critical needs analysis aims at not only describing the existing conditions, but also searching for possible areas of change towards greater equality for learners (Benesch 1996). The Activity Theory analysis of genres will help to achieve these purposes. Brought into the learning system through GBP, the concepts of genre will bring about a series of changes that will, to a certain extent, develop or even transform the current learning activity system, including the reconceptualized object and motive of learning activity. Expansive learning is expected to happen both on the part of the teacher and the students in the activity system of ESP instruction (See Figure 2.12). Moreover, potential expansive learning will also happen to the person who helps to bring GBP into the ESP activity system (in the case of the present research it is the researcher) through boundary-crossing. Section 2.6.4 will introduce a GBP-mediated expansive learning model that can help to observe expansive learning happening to different subjects and different dimensions. But before that, why GBP is used as a new mediating tool in the present research is summarized in Section 2.6.3.

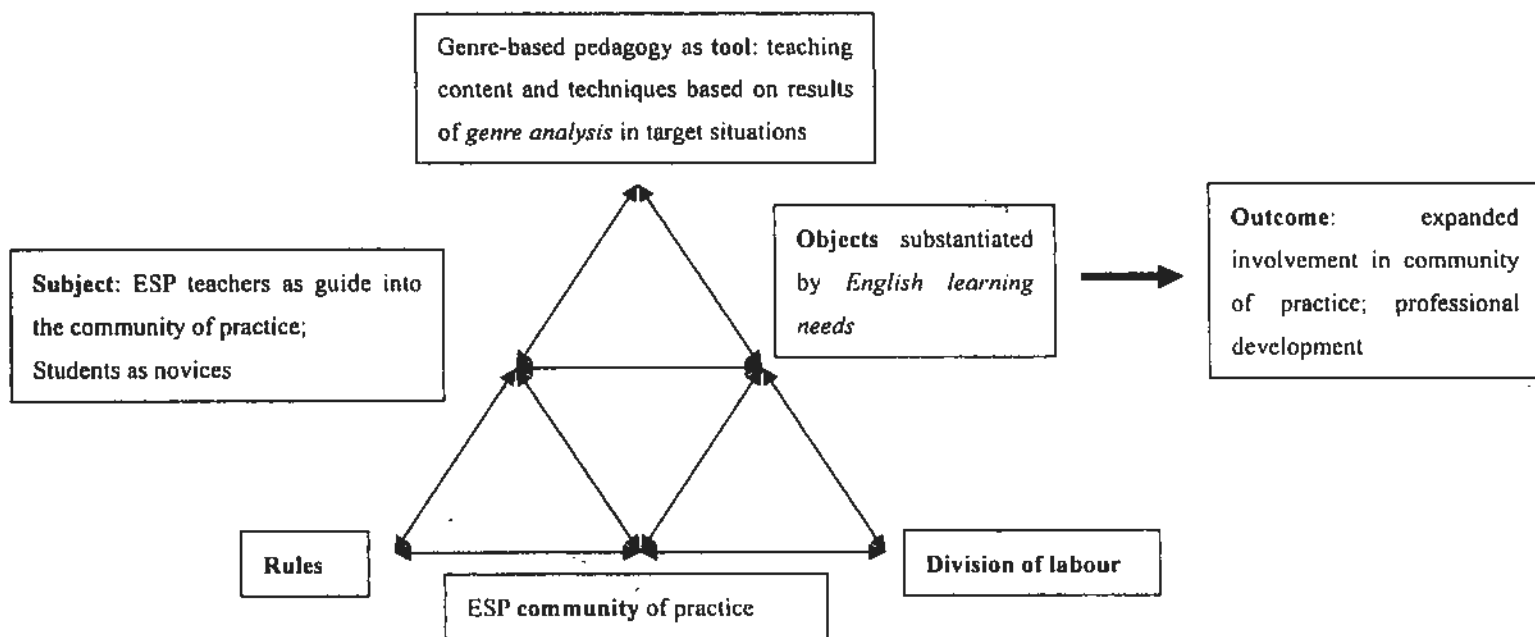


Figure 2.12: Genre-based Pedagogy in the Activity System of ESP Instruction

2.6.3 Genre-Based Pedagogy as a New Mediating Tool

This subsection aims at justifying the use of GBP as a new mediating tool in the present research by summarizing the theoretical insight in Section 2.6.1 and 2.6.2.

There are several reasons why GBP is used in the present research. Firstly, there have been increased attention given to the analysis and teaching of genres in language learning. This is especially the case in the teaching of ESP (Paltridge, 2001).

The benefits of genre teaching are summarized by Paltridge in the following way:

Genres provide ways for responding to recurring communicative situations. They further provide a frame that enables individuals to orient to and interpret particular communicative events. Making this genre knowledge explicit can provide language learners with the knowledge and skills they need to communicate successfully in particular discourse communities. It can also

provide learners with access to socially powerful forms of language. (Paltridge, 2001, p.3)

GBP therefore becomes an immediate candidate to facilitate the ME course in the present research by providing the medical students opportunities to learn the genres of their community of practice and benefit from the multiple aspects of genre learning mentioned above.

Secondly, GBP introduces the English use in target situations in students' future career, and in so doing helps to raise their awareness of the academic needs of English. As Gee (1997) argues, a development of genre awareness in terms of types of genre and their characteristic features is essential for learners so that they are aware of the expectations of the context of communication and the purposes that different genres serve. GBP may help the medical students to foresee the usage of English in their future medical study as well as career development and motivate the students to learn English more actively and reflectively instead of being de-motivated by the overwhelming institutional desires to promote English learning disregarding the situations of English use.

Moreover, GBP serves as ready-made teaching methodology for the ME teachers in the investigated context of the present research. These teachers are originally medical subject teachers or medical doctors who know little about language teaching methodologies and are not confident to teach medical English. GBP will give the medical English teachers a more central role in preparing teaching materials and

activities for the ME course. It will empower the teachers by offering them “ways to analyze texts, to reflect on the working of language, and to provide more robust and targeted support for learners” (Hyland, 2007, p.162).

Finally, as Section 2.6.2 discusses, reconceptualized in the Activity Theory framework, GBP can be an important conceptual tool to mediate the EMP instruction, bring about learning not just about the use of language, but also about new understanding of the motives and identities as the students become more and more involved into the activities of their community of practice. Russell (1997) has rightly pointed out the potential expansive learning that may happen in the process of learning a new genre. “[A]s an individual appropriates (learns to use) the ways with words of others, they may (or may not) also appropriate the object/motives, and subjectivity (identity) of the collective, or a new activity system. The process of learning (to write) new genres is a part of a process of expanding one’s involvement with activity systems” (Russell, 1997, p. 516). In this sense, expansive learning may happen in the genre-based framework of instruction.

Because of these reasons, GBP was selected as a new mediating tool in the ME class in the present research. How/whether it helped to bring about expansive learning and resolve some of the contradictions of the ME activity system will be discussed in detail in Chapter 6, 7, 8, and 9. In the following subsection, a GBP-mediated expansive learning model will be formulated to provide different dimensions to

illustrate the expansive learning that may happen in the genre-based framework of the ME class.

2.6.4 Genre-based Pedagogy Mediated Expansive Learning

In this subsection, the multi-dimensions of expansive learning are used to develop a GBP mediated expansive learning model that can be used to observe the learning behaviors in the present research.

2.6.4.1 Learning in the Genre-based Framework

Research on learning in the genre-based framework is most of the time language-based and practice-based. It is necessary to study genre-based learning happening in the classroom context with the focus on the learners and the process of learning.

A most commonly discussed effect of genre-based writing pedagogy on learners is the linguistic awareness of disciplinary genres (e.g. Marshall, 1991; Mustafa, 1995; Burns, 2001; Henry & Roseberry, 1998; So, 2005; Cheng, 2007). This major theme of study also emerges in the, relatively fewer, studies about the effect of GBP on learners' other language skills, e.g. Fox (2002) on genre-based listening instruction, Cunningham (1999) on genre-based speaking instruction, Hyon (2001) and Littlefair (1991) on genre-based reading course. Paltridge's (1995) study is exceptional in that GBP was utilized in teaching all four skills components in a language program.

Only in a few cases do the effects of GBP go beyond language-based learning. In a case study of one geology student, Dressen-Hammouda (2008) studied how

disciplinary identity could be structurally related to the specialist genres the student had to learn. The student's developing disciplinary identity allowed him to gradually produce a key written genre in geology with increasing expertise. The development of disciplinary identity is the indication of how learning can happen in a vertical dimension as the learner moves up the ladder of specialism.

Sengupta, et. al (1999) showed how GBP was applied in conceptualizing a funded staff development program in a Hong Kong university. It was found that instead of being treated as a prescriptive, structural model, GBP was seen as a pedagogy of possibilities, a framework within which participants were able to express their own voices, to break generic conventions and to re-interpretate GBP. The process of concept formation of GBP is, though not explicitly stated by the authors, actually the process of expansive learning.

The theory [GBP] provides a foundation that allows us to move forward and lends itself to revision as a result of our own reflection on the participants' reactions and feedback. Through this reflective practice we are able to strengthen and expand our practice and enrich our product. (Sengupta, et. al, 1999, p.S20)

Tardy (2006) summarized the key findings from 60 data-driven studies of student learning in the genre-based framework and found that research has typically studied genre learning as it occurs either through professional or disciplinary practice or through classroom instruction. Compared with practice-based genre learning, classroom-based instructional contexts have been a far less common domain of study;

moreover, “studies of genre and instruction have so far remained primarily theoretical and anecdotal” (Tardy, 2006, p.89).

Another recent comprehensive review of genre-based learning was conducted by Cheng (2006). He pointed out that among the studies of discipline-specific genre analyses, many have strived to focus on both the recurring generic features and the disciplinary and rhetorical contexts of the targeted genres (e.g., Swales, 1990 & 2004), while some have translated many genre descriptions into pedagogical proposals and teaching materials (e.g. Bhatia, 1993; Flowerdew, 1993; Johns, 2002; Paltridge, 2001; Swales & Feak, 2000 & 2004; Weissberg & Buker, 1990). But, generally speaking, genre-based approach largely remains an approach “which privileges the analysis of learner’s target genre needs and the preparation of teaching materials but has relatively little to say about the actual learning by the learners who are consigned to learn in such an approach” (Cheng, 2006, p.77). Therefore, Cheng calls for more learner- and learning-focused, context-sensitive research that examines learners’ learning of genre and their development of generic/rhetorical consciousness. In other words, it is necessary to expand the research horizons from genre/text-focused to learner-focused investigations, especially in the field of ESP, which has long been noted as paying ‘scant attention to *how* people learn, focusing instead on the question of *what* people learn” (Hutchinson & Waters, 1987, p.2, italics original). A recent yet similar comment is made by Belcher (2006) who calls for more diversity in ESP research because “the ESP gaze” has been focused more on products rather than process.

Cheng (2006) uncovered two deeper issues that can potentially transmit changes to the current ESP genre-based research agenda. Firstly, he feels the need for more attention to the full intricacies of being a learner in ESP genre-oriented classroom and secondly, he believes that there is a lack of theories of learning that are sensitive to the unique conceptual framework and pedagogical realities of ESP genre-based writing classroom. The research opportunities that these two deeper issues generate are, as Cheng pointed out, to explore learner dynamics in the ESP genre-based classroom and to develop theories of learning applicable to this context. In his words:

Specifically, I am interested in how a clearly articulated conceptualization of learning ... can generate a set of systematic and clarifying observational dimensions that can cover various aspects of discovery-based genre learning (cognitive, affective, and critical; text, learner, and teacher; goal, process, and assessment). These observational dimensions can then lead ESP genre-based researchers and practitioners to ask questions and to design studies ... that can shed light on the various parameters of learning in ESP genre-oriented pedagogy. (Cheng, 2006, p.86)

Responding to Cheng's call, the present research aims at establishing a model to observe and research what learners learn and how they learn under the genre-based instruction. This model will have multi-observational dimensions to inquire about the "various parameters of learning in ESP genre-oriented pedagogy" (Cheng, 2006, p.86).

Developing theories of learning applicable to ESP classroom instruction implies the exciting possibilities of cross-sectioning GBP with approaches that explicitly address

genre-based learning such as Language Awareness, Learner Autonomy and, in general, a constructivist view of learning (Cheng, 2006). In the following subsection, I will propose the “cross-sectioning” of GBP with expansive learning theory and formulate a GBP mediated expansive learning model that provides observational dimensions to investigate the process, as well as the products of genre-based learning.

2.6.4.2 A GBP Mediated Expansive Learning Model

In Section 2.3, expansive learning is introduced as a historically new type of learning, theoretically developed from sociocultural theory in general and Activity Theory in particular. It is learning that emerges as practitioners struggle through developmental transformations in their activity systems, moving across collective zones of proximal development (Engestrom, 1987 & 1999). Two dimensions of development are identified in this theory: horizontal movement across *borders* as two or more activity systems collaborate and vertical movement across *levels* when subjects of an activity system progress from a culturally less advanced form of activity to a culturally more advanced form (Engestrom, 1996).

In particular, expansive learning is conceptualized as concept formation and boundary-crossing. The former refers to the process of how new mediational conceptual tool come into being and is utilized in the current activity system to create a new form of activity. The latter is about how concept is collectively formed across the boundaries between different activity systems.

To explicate how expansive learning may happen and be investigated in the ESP instructional context (in the present research, the medical English class), the GBP-mediated expansive learning model has been formulated. In the following model (Figure, 2.13), the multi-dimensions of expansive learning are realized through the mediation of GBP. Learning happens both vertically and horizontally; it also happens on both the part of the medical English teacher and the students. The horizontal dimension is mainly realized through boundary-crossing between the activity system of the ME course and that of the general English course (the researcher being a general English teacher). GBP is introduced from the activity system of the general English course into the activity system of ME course by the general English teacher (although GBP is a cornerstone approach in the field of ESP, in the investigated context, the ME teacher is the medical subject teacher who knows little about language teaching approaches, thus GBP is new to her.).

The way the concept of GBP is appropriated, utilized or even changed is the process of concept formation, which, according to Engeström (2001a), embraces both vertical and horizontal development, hence is represented by a diagonal line in the model. Through classroom instruction, the ME teacher introduces GBP to the students; therefore, concept formation also happens on the part of the students. At the same time, the ME teacher's individual learning action of mastering GBP is transformed into the collective learning activity of her students.

In the vertical dimension, with the mediation of GBP, the medical students are exposed to the real-life use of English in future learning and working situations in the

form of special genres. One can thus argue that their conception of the object of learning English will then be reconceptualized and the whole learning activity system will be transformed to a culturally more advanced form.

In this way, altogether three observational dimensions are provided by this model: the boundary-crossing dimension, the concept formation dimension, and the object transformation dimension. It is hoped that, with this model, the genre-based learning in the instructional context can be better investigated and more insight of the learning process can be brought about by this investigation.

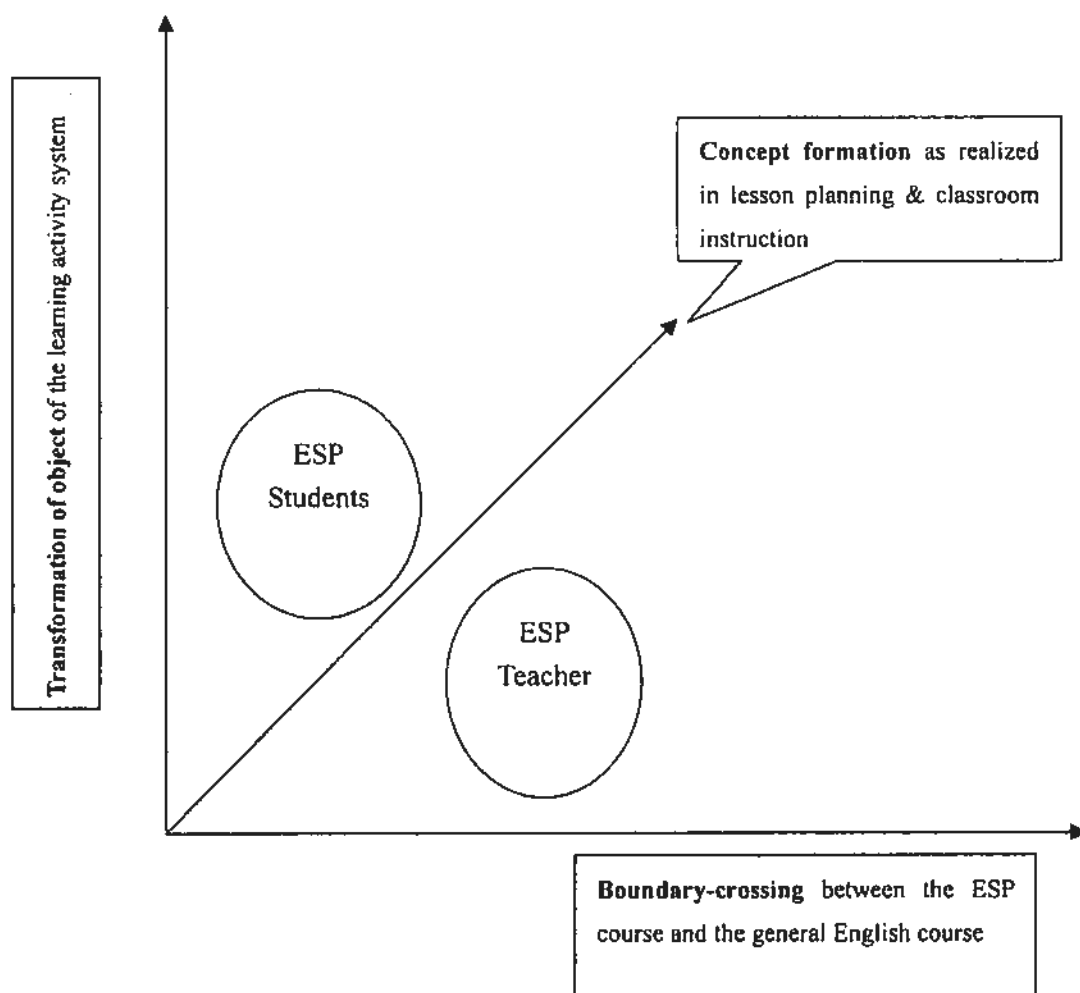


Figure 2.13: The GBP Mediated Expansive Learning Model

2.7 The theoretical framework of the present research

Based on the above review of relevant literature, the theoretical framework of the current study is presented as a triad conceptually supported by critical and sociocultural theories. Activity Theory, GBP teaching model, and GBP-mediated expansive learning model triangulate this framework contextually, procedurally, and observationally (see Figure 2.14).

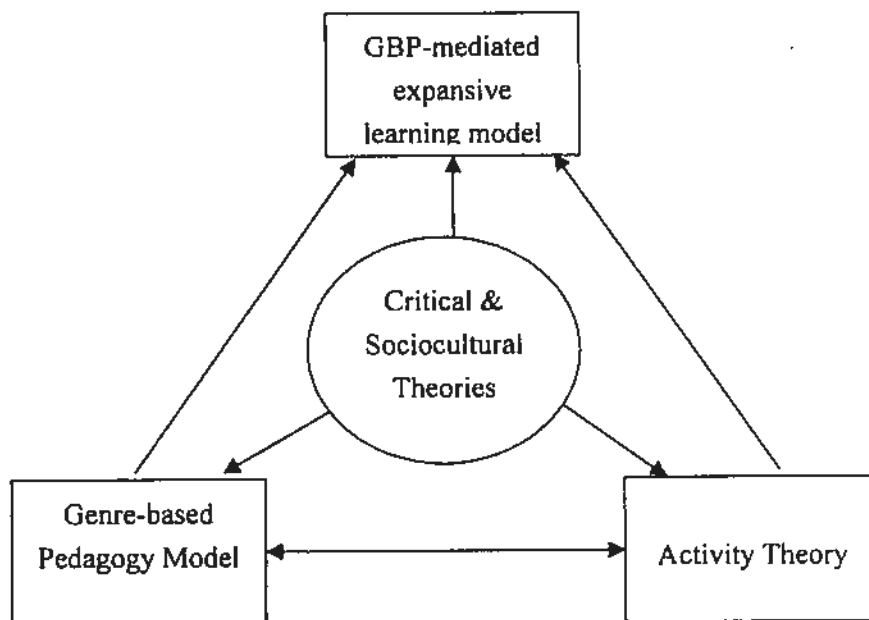


Figure 2.14: A Triadic Theoretical Framework

2.7.1 Critical Theories and Sociocultural Theories --- a Conceptual Tool

The critical and sociocultural perspectives of ESP research that have been discussed in section 2.1 and 2.2 serve as a conceptual tool in this framework. These perspectives enrich the research bringing forth a "paradigm shift" from product-orientation to praxis-orientation. In other words, they bring about changes in the pedagogical values that English is learnt not as a neutral tool for expression and communication in academic situations, but as a social practice that constructs, and is

constructed by how learners understand themselves, their social environment, and their professional possibilities for the future. This social process of English learning is characterized by active participation and reflection by learners, teachers, and researchers. The following models that make up the overall theoretical framework all come in line with this conceptualization of English learning, teaching, and researching.

2.7.2 Activity Theory --- a Contextualizing and Analytical Model

For a long time, contextualization in language education has been done within the confines of the language and the objectives of the classroom (microcontextualization) and tends to ignore the most significant contextual factors in language learning, the social setting in which it takes place (Osborn, 2000). Activity Theory can be used as a contextualizing model to achieve macrocontextualization⁷. Theoretically rooted in the sociocultural theories, Activity Theory maintains that the prime unit of analysis of human interaction should be the tool-mediated object-oriented activity (Figure 2.3), or the interconnected activity systems (Figure 2.4). In this way, any human activity can only be understood in the complex interrelations between the individual subject and the community and among the networks of multiple activity systems. This reconceptualization of human activities enables Activity Theory to help macrocontextualize EMP research and teaching by systematically examining

⁷ According to Osborn (2000), "macrocontextualization is the process of planning and implementing language instruction by incorporating the local political, economic, and cultural factors relating to linguistic diversity with the intent of developing students' skills in understanding the role that language plays in society". (Osborn, 2000, p.114)

practices and institutional structures alongside the activities of learners and professionals.

Activity Theory has been chosen in the present research because it clearly is a very powerful analytical tool. In this framework, learning needs are identified as the object of the learning activity system that guide the subjects' individual learning actions in the community of medical English teaching and learning; perceptions of and attitudes towards English learning are the conceptual tools through which learners achieve the outcome of their actions; different perceptions of learning needs are regarded as representation of the multi-voicedness and multi-perspectives of the activity systems; and critical needs analysis is conducted through a critical analysis of the complex interrelation inside and between the various levels of activity systems. The results of critical needs analysis are the revelation of the existing contradictions and the seeking of resolution to these contradictions that will lead to changes, development, or even transformation of the current activity system. The conceptualization of needs analysis in this framework enabled the researcher to look into individual learning actions as mediated by perceptions of English learning during the interaction with other components (tools, rules, objects, division of labour, etc.) inside and outside the collective learning activity system, and to take corresponding action to resolve problems and expand learning.

2.7.3 Genre-based Pedagogy --- an Operational Model

In section 2.6, GBP in the present study is claimed to have integrated the sociocultural and critical stands from the three schools of genre theories and is introduced as a potential mediating tool in the medical English teaching/learning activity system that can help to achieve expansive learning. Specifically, the GBP model used by the Systemic Functional School (see Figure 2.11) was adopted in the second stage of the research to carry out innovative teaching and learning activities. The three-staged teaching model (deconstruction, joint construction and independent construction) provided the ME teacher with specific teaching techniques for both overt instruction and critical analysis of the target genres, helping the medical students to foresee the use of English in future situations.

Moreover, in the framework of Activity, genre is the typified, operational social action that mediates the academic activities in academic situations. This reconceptualization of genre links genre analysis with needs analysis theoretically and practically. GBP becomes an operational model in which critical needs analysis is realized by analyzing genres, introducing genres and teaching/learning genres.

2.7.4 The Expansive Learning Model --- an Observational Model

The GBP mediated expansive learning model (Figure 2.12) provides observational dimensions to study expansive learning within the framework of genre-based instruction. Based on the expansive learning theory, it identifies horizontal dimensional learning realized by boundary-crossing and vertical dimensional learning realized by the transformation of learning object. Also, how the concept of

GBP is formed, changed, and developed on both part of the students and the teacher through classroom instruction offers a complementary dimension, both horizontally and vertically, for us to inquire into the process of how individual teaching action (the teacher's GBP instruction) is transformed into the students' collective GBP learning activity.

2.7.5 A Triadic Theoretical Framework of EMP Research

The models discussed above make up a triadic EMP research framework (see Figure 2.14 above). In this framework, the critical and socialcultural insights provide conceptual common ground for the three models, which complement and triangulate to facilitate successful operation in each stage of curricular innovation and research.

This triadic theoretical framework is the cornerstone of the present research. It is based on this framework that the research questions have been formulated, and the research has been designed accordingly, which will be elaborated in the next chapter.

2.8 A Summary of the Key Concepts of the Present Research

The key concepts in the present research are summarized as working definitions in order to highlight the continually recurring ideas of this thesis.

Needs analysis: In the present research, need analysis refers to the research process during which both objective expectations and subjective desires should be negotiated, both textual and contextual factors should be considered, and both insider and outsider perspectives should be included. It involves both the investigation of the

objective expectations and subjective desires of the learners in their social contexts through triangulated methods and sources and the critical analysis of how these needs are displayed as the academic and social activities the learners have to accomplish in social and academic interaction and how possible inequality is revealed. From the perspective of the Activity Theory, needs analysis also involves the analysis of how different subjects in different activity systems perceive the object of learning activity and how contradictions are generated from the multi-perspectives.

Critical needs analysis: In the present research, critical needs analysis is conceptualized as the process of expansive learning beginning with the questioning and analyzing of the learning needs of the current learning activity system, followed by the formulation and implementation of new mediational tool (a new concept, model, or methodology), and concluding with reconceptualized and transformed learning needs in a culturally more advanced activity system. It aims at acknowledging the existing conditions of learning while searching for possible areas of change towards greater equality for learners (Benesch, 1993 & 1996).

Activity Theory: Rooted in the sociocultural theory of mental development, Activity Theory believes that human actions are tool-mediated and goal-directed that happen in collective, artifact-mediated and object-oriented activity systems which are inherently dynamic, evolving, and multi-voiced. An activity system may be changed or developed, or even, in the process of change, undergo qualitative transformation, because of its inner contradictions.

Contradictions: An individual's activity is located within a collective system regulated by the rules and division of labor of a community and guided by the mediating tools to achieve the object. With this conceptualization of human activities, contradictions are the historically accumulating structural tensions or conflicts within and between the activity systems. They exist all the time and resolutions to them help provide sources of change and development (Engestrom, 1987 & 1993).

Genre-based pedagogy: Genre-based pedagogy refers to the teaching practices that offer learners explicit understanding of how texts in target genres are structured and why they are written in the ways they are (Hyland, 2003 & 2004). In the current research, it includes relevant lesson plans, teaching materials and actual classroom practice that are shaped by the genre-based pedagogical principles.

Expansive learning: Expansive learning is a historically new conceptual view of learning which emerges as practitioners struggle through developmental transformations in their activity systems with the help of collective efforts. It has both vertical and horizontal dimensions of development which are realized through reconceptualization of activity object, concept formation or boundary crossing (Engeström, 1987, 1999, 2001a & 2001b).

Concept formation: Concept formation is the process of development of understanding from abstract theoretical idea or concept to concrete and complex manifestations in practice. It may result in the new form of practice or activity (Engeström, 1987 & 2004).

Boundary-crossing: Boundary-crossing is the crossing of boundaries between different activity systems to achieve new forms of activities through the mediation of new conceptual tools. It requires two-way interaction and mutual engagement and commitment to embrace change in practice. The changes may happen in any component of the original activity systems and lead to transformed or even new forms of identities, beliefs or values of the subject and new form of activity (Engeström, 2001b; Engeström et al., 1995).

Conclusion

This chapter has reviewed the development in the relevant research areas of ESP and

EMP, paying special attention to the missing perspectives of EMP research in China. It then explores two important theories which share their theoretical roots in sociocultural theories: Activity Theory and genre theories. The strengths of genre studies in the Activity Theory framework has been highlighted as well. The theory of expansive learning developed from Activity Theory is then utilized to formulate a model to observe the learning behaviors that may happen in the GBP-mediated ME instruction.

The discussion of the expansive learning happening in the genre-based framework of ME instruction is based on an ideal type of expansive learning model. To make it happen and to evaluate it in the real classroom context, feasible and practical research actions need to be taken. As Kumaravadivelu (2006) states, “admirable intentions need to be translated into attainable goals, which, in turn, need to be supported by attainable plans” (p.76). The research intentions need to be translated into attainable goals (research questions), and turned into attainable plans (research design and plans). With this aim in mind the thesis turns to the chapter on research methodology.

Chapter 3: Research Methodology

Introduction

The present research makes use of different methodological perspectives drawing on ethnography, case study and developmental intervention study. Ethnography is the overarching method; case study brings about in-depth understanding; and developmental intervention study leads to the attempted transformation of the current situation.

This chapter begins with the introduction of three research methods: ethnography, case study and developmental and interventionist methods, which are compatible and complementary methodological perspectives for an expansive developmental research model in the present research. The overall research design and specific stages are then presented. Techniques of data collection and analysis and strategies to make up for the limitations of the study are also delineated.

3.1 Research Methodology

In this section, ethnography, case study, and developmental and interventionist methods are introduced. Where appropriate, the ways in which these research methods enlighten and enrich the present research are highlighted, thus establishing the methodological arguments for the research design to be introduced in the next section.

3.1.1 Ethnography

Ethnography, with its anthropological root, has diffused broadly into education. This subsection traces its development from the field of anthropology to education and highlights the latest trend in critical ethnography, which is in line with the critical stance of the present research. The defining features of ethnography as a research model are also summarized.

3.1.1.1 The Development of Ethnography

Ethnography is rooted in anthropology and is considered as one primary contribution of anthropology to the field of education (Spindler & Hammond, 2000). Particularly, it grew from the design of cultural theorists and social scientist to discover the non-Western-European world in late nineteenth and early twentieth century. Among them, Malinowski, the Polish anthropologist, is renowned as one of anthropology's most skilled ethnographers because of his pioneering work on ethnographic fieldwork. In the 1920s and 1930s, ethnographic field studies were conducted by sociologists in the United States to document life in familiar, usually urban, communities, Robert Park, Everett Hughes, and Louis Wirth of the Chicago school being some of the names that represent at such work.

Although ethnographies of schooling have been done by a small group of anthropologists for some time (e.g Jules Henry, George Spindler and Louise Spindler), the ethnography “movement” did not begin in the field of education until

the late 1960s and early 1970s (Anderson, 1989). A sudden popularity was witnessed after this time. George Spindler, an anthropologist specializing in the ethnography of schooling, has identified three varieties of ethnography in education: *anthroethnography* (for anthropological ethnography), *socioethnography* (for sociological ethnography), and *psychoethnography* (for psychological ethnography) (Spindler & Spindler, 1982). Ethnography has proliferated the field of education to such an extent that, according to Spindler & Hammond (2000), “not only has ethnography become a major contribution of anthropology to education, but virtually anything resembling qualitative research seems to be called ethnography” (Spindler & Hammond, 2000, p.40).

Later LeCompte & Preissle (1993) have added *critical ethnography*, considering it, together with the three varieties identified by the Spindlers, to fall into the broad category of educational ethnography. Educational ethnography has been used to provide rich, descriptive data about the contexts, activities, and beliefs of participants in educational settings, to generate theory, and to evaluate educational programs. According to LeCompte & Preissle (1993), it is neither an independent discipline nor a well-defined field of investigation. It is practiced by researchers from different traditions and is therefore under various disciplinary influences, including educational anthropology, educational sociology, educational psychology, critical studies, postmodernism, and poststructuralism.

3.1.1.2 Descriptive Ethnography vs. Critical Ethnography

With the movement of ethnography and qualitative research design from marginal and complementary methods in the social sciences and education to a position of assured legitimacy in the 1980s, critical theorists, including feminists, neo-Marxists, postmodernists, and poststructuralists, have integrated the interpretative methods of cultural anthropology and fieldwork sociology with an activist critical theory to contribute to the emergence of *critical ethnography*. The critical thrust raises serious questions about the role of schools in the social and cultural reproduction of social classes, gender roles, and racial and ethnic prejudice; also, there emerges a focus on human agency and local knowledge in their discussion of the practice of ethnography and the nature of culture. Critical ethnography has developed quickly as an effective research genre.

The traditional descriptive ethnography aims at providing a descriptive and interpretive explanatory account of people's behavior in a given setting and examining how behavior and interaction are socially organized and how the social rules, interactional expectations, and cultural values underlie behavior (Watson-Gegeo, 1988), while critical ethnography seeks research accounts sensitive to the dialectical relationship between the social structural constraints on human actors and the relative autonomy of human agency with the overriding goal to free individuals from sources of domination and repression (Anderson, 1989). Canagarajah (1993 & 1999) summarizes the advantages of a critical ethnography over a descriptive ethnography as follows:

- a. Traditional ethnography's microscopic focus on the local tends to ignore the larger, macro-level, socio-political forces, while critical ethnography tries to provide a cultural description sensitive to macro-social structures and wider political concerns;
- b. Limiting practice in descriptive ethnography also comes from its ahistorical perspective that tends to describe culture captured in a static and existential state, but critical ethnography tries to historicize the ethnographic present by situating the linguistic and cultural practices in their changing historical contexts
- c. Descriptive ethnography holds a detached, value-free, egalitarian view of culture, whereas critical ethnography builds an element of ideological critique into cultural description, bringing about better understanding of the potential of culture and leading it towards a way of developing awareness of domination or empowerment.
- d. Descriptive ethnographers treat words of the informants from the community as sacrosanct, while critical ethnographers enjoy more interpretative freedom to articulate the meanings of the informants, to analyze the words in relation to the larger historical processes and social contradictions, and to search for the hidden forces that structure life;
- e. While descriptive ethnography would attempt to smooth over the contradictions, critical ethnography looks for the explanation of these contradictions.

At the same time, a critical edge has been brought into the ethnographic research in ELT. Canagarajah's (1993) study of 22 tertiary-level Tamil students following a mandatory English course reveals the contradiction between the students' opposition to the alienating discourses inscribed in a U.S. textbook and their strong motivation to study English. The contradiction was interpreted as reflecting the conflict students

face between cultural integrity, on the one hand, and socioeconomic mobility, on the other. In the same setting, Canagarajah (1999) went deeper into this issue of double bind. He interpreted the situations as “a tension students [and teachers] face between the threats of ideological domination experienced at an intuitive level and the promises of a socio-economic necessity acknowledged at a more conscious level” (Canagarajah, 1999, p.174). In negotiating the conflicts they face, the students and teachers showed remarkable agency by gesturing towards an appropriation of the discourses, codes, and grammar of English in terms of their own traditions and needs.

Ramanathan (1999) examined the ways in which the Indian middle class, with its relatively easy access to English, represented an inner circle of power and privilege, while lower income and lower caste groups were kept out of the reach of English and hence remained in the outer circle of the Indian society. A 7-year critical ethnographic study enabled Ramanathan (2005) to investigate how English had been playing a divisive role in the postcolonial communities of India. As a simultaneous insider-outsider, Ramanathan managed to offer two-way investigation: one on the effects of globalization within the postcolonial contexts, the other on how local practices and cultures in turn react to, resist and reshape the forces of internationalization, how English has been nativized or vernacularized within postcolonial contexts, and how individual actors negotiate this interaction.

The present research also tries to adopt the critical edge in the ethnographic study. It

has set out to conduct a critical analysis of medical students' English learning needs in China as a starting point for an exploration of how medical English can be better taught to satisfy the students' learning needs. As discussed in 2.3.2, critical needs analysis not only entails the investigation and analysis of the current situations of learning and teaching, but also the possible solutions that lead to improvement or even transformation of the existing conditions. Reconceptualizing English learning as happening in a tool-mediated, object-directed activity system constrained by rules and division of labor in a community should enable us to view English learning needs as the object perceived by different subjects in the medical college. Such a critical stance brought into needs analysis requires critical ethnographic research for, firstly, a holistic and contextualized description of how different parties perceive the medical students' English learning needs; secondly, a critical analysis of why and how similarities and differences happen, and thirdly, research on possible changes towards more empowered (and perhaps more equal) learners in the chosen educational context.

3.1.1.3 The Defining Features and Embodiment in the Present Research

A commonly asked question is *what makes a study ethnographic*. Definitions of ethnography range from the most simple to the most elaborate. Ethnography is "the description of culture" (Shaul & Furbee, 1998, p.16) or ethnography is "the art and science of describing a group of culture" (Fetterman, 1989, p.11). Simple as these definitions, two important features of ethnography are revealed: the cultural

emphasis and group focus (Johnson, 1992). More elaborate definitions are provided by David Nunan: ethnography is “a *non-manipulative* study of the *cultural characteristics of a group* in *real-world* rather than laboratory settings, utilizing *ethnographic techniques* and providing a *sociocultural interpretation* of the research data (Nunan, 1992, p.230)”.

Thus, drawing from Lecompte & Preissle (1993), Fetterman (1989), Steward (1998), Johnson (1992), Agar (1980) and Nunan (1992), the defining features of ethnographic study can be synthesized as a research method that: (1) has an emic perspective, (2) is process-orientation, (3) is holistic, (3) is conducted in naturally occurring settings, and (5) is multifaceted.

Emic Perspective

Emic perspective, “the insiders or native’s perspective of reality” (Fetterman, 1989, p.30), is thought to be at the heart of most ethnographic studies. Johnson (1992) believes that the most important goal of ethnographic inquiry is to discover the insider’s view.

Derived from this emic perspective is a *nonjudgmental orientation* that requires the ethnographer to suspend personal valuation of any given cultural practice. However, a researcher cannot be completely neutral (Fetterman, 1989), and “the reality of a cultural scene is the product of multiple perceptions, including that of the researcher and that produced by the interaction between researchers and the people they study”

(LeCompte & Preissle, 1993). Especially when the different realities of various insiders are in conflict, an ethnographic perspective is necessary in interpretation. Therefore, although emic perspective stands out as the most important feature of ethnographic study, good ethnographers have to strike a sensitive balance between the emic and the etic (outsider's) perspective.

Process Orientation

Lecompte & Preissle (1993) regard ethnography as both a product --- the book which tells a story about a group of people, and a process --- a way of studying human life, the method of inquiring which leads to the production of the book. It can be argued that what distinguishes ethnography from other research methodologies is the *dynamic, interactive and reflective* research process.

By dynamic, it means the research questions are posed broadly and flexibly at the onset of the study and are gradually developed more specifically in the process of field work. Sometimes the questions and hypotheses even emerge on site. Thus the research process is dynamic rather than static, as compared with an experimental study. At the same time, the process is interactive because there is ongoing interaction between questions and data collection and interpretation. So the researcher has to keep an open mind to "explore rich, untapped sources of data not mapped out in [original] research design (Fetterman, 1989, p12)". Another point that puts ethnography more on the process end is the reflective role played by the researcher. He/she has to be sensitive to any data coming out of field work that may

be used to refine or refocus the research. In this recursive process, being reflective is essential.

Holism

The “encoding core meaning of holism for anthropology [is] that culture [or society] is an integrated whole and that individuals can only be understood within the context of that whole” (Johnson & Johnson, 1990, cited in Steward, 1998, p6). This concern with holism and the way it treats cultures as integral to the analysis, but not just as one of many factors to take into considerations, are aspects that make ethnography differ from other forms of qualitative research (Watson-Gegeo, 1988).

A holistic perspective enables the ethnographer to contextualize the participants of the study in seeking of a comprehensive and complete picture of a social group. To achieve a holistic perspective, a great deal of time in the field is required to gather the many kinds of data that together create a picture of the social whole. It is also essential that multiple methods and multiple hypotheses be adopted to ensure that the researcher covers all angles. The result of the holistic exploration is the contextualized explanation of the participants’ behaviors and the “thick” sociocultural description of the research object, society and culture.

Naturalism

Contrary to experimental studies, ethnographic studies are conducted as unobtrusively as possible in settings where behavior occurs naturally so that data

collected is not contaminated and can best reflect the insider's views. Time is also important for ethnographers. They have to stay in the native environment for a long period of time to study the object world in all its wonders and complexity. To achieve these goals, ethnographers employ *participant observation* as its central data collection technique because it involves the ethnographer in prolonged immersion in the life of a group, community, or organization in order to learn about people's habits and thoughts (Punch, 1986). Participant observation means that the ethnographer both observes and participates in the cultural setting. But the role options are so subtle that he/she has to adjust the roles all the time. Nash (1963) suggests "detached involvement". Johnson (1992) thinks "a part-time teacher" is a better role for the researcher in the school setting because of its feasibility and flexibility.

Multifaceted research method

As a method, ethnography includes the techniques of observation (particularly participant-observation), informal and formal interviewing of the participants observed in situations, audio- or videotaping of interactions for close analysis, collection of relevant or available documents and other materials from the setting, and other techniques that are required to answer the research questions. Among these techniques, intensive, detailed observation of a setting over a long period of time is considered to be the hallmark of ethnographic method (Watson-Gegeo, 1988).

These defining features of ethnography have served as the guidelines in designing the present research. As an insider, an English teacher of the medical college, I had

been teaching in the investigated context for 14 years before the study began. This offered me numerous opportunities to observe and consider the object of research at close quarters imperceptibly. I was able to obtain relevant documents and information easily because of this insider identity. At the same time, as a researcher, I tried to “make familiar strange” (Ericson, 1984, p.62) and bring in new perspectives, analyzing the object critically and seeking for changes. The field work, spanning 14 months from the beginning of the pilot studies to the end of the main study, combined multiple methods such as interviews, participant observations, and focus group discussions to obtain holistic perspectives in producing contextualized description of the object of research. The research process was dynamic, interactive, and reflective as expected of a model of developmental research -- to be introduced in the next section.

The methodological philosophies of critical ethnographic research provide the present research general guidelines in the overall design. Case study approach and developmental interventionist method help to bring about more specific design on the unit of investigation and research steps. The following subsections will introduce them and their contribution towards shaping the present research.

3.1.2 Case Study

Case study has been defined in different ways. Some popular definitions are that a case study is:

‘[A]n empirical inquiry that investigates a contemporary phenomenon within its

real life context: when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used' (Yin, 2003, p.13)

'[T]he detailed presentation of ethnographic data relating to some sequence of events from which the analyst seeks to make some theoretical inference' (Mitchell, 1984, p.237)

'The basic idea is that one case (or perhaps a small number of cases) will be studied in detail, using whatever methods seem appropriate. While there may be a variety of specific purposes and research questions, the general objective is to develop as full an understanding of that case as possible' (K. Punch, 1998. p.150).

The case study is a study of a 'bounded system'. (Stake, 1988, p.258)

The choices of words in these definitions suggest that case study involves contextualized, ethnographic data collection that is achieved through in-depth investigation from multiple sources and aimed at improving understanding of a relatively 'bounded system' such as a teacher, a classroom, a school, an agency, an institution, or a community. Holism, contextualization, naturalism, and multi-source are terms that are highlighted in case study research.

Firstly, case study is designed deliberately to cover contextual conditions with a belief that they might be highly pertinent to the phenomenon of study (Yin, 2003). It investigates and reports the complex dynamic and unfolding interactions of events, human relationships and other factors with the recognition that every context is unique and dynamic (Cohen, et al., 2000). This emphasis on contextual factors is

shared by ethnographic study.

Secondly, the case is investigated in its naturally occurring state and environment, if compared with experimental research. But as Johnson (1992) also points out, a variety of methods, naturalistic or otherwise, can be used to address the research questions. Some intervention techniques are possible in a case study.

Thirdly, case study is a multi-method approach, within which different sub-methods are used (Gillham, 2000). Thus the collected evidence comes from multiple sources to provide in-depth investigation and thick description of what is happening in the real-life context. Its evidence even comes from 'the prior development of theoretical propositions' (Yin, 2003, p.14). It is both 'grounded in data' and 'informed by theory' (Hyland, 1998, p.260). This triangulation from different methodological standpoints is also in accord with the multifaceted research model advocated by ethnographic study.

Moreover, although the qualitative dimension is primary in the case study, it is not limited to qualitative methods or data. Instead, it can be based on any mix of quantitative and qualitative evidence (Yin, 2003). Just as Gillham states:

Quantitative data has a special place in case study research in so far as it extends the range of evidence on the topics under investigation-- and qualifies what we have learnt from other sources (Gillham, 2000, p.86).

Case study is so similar to ethnography that in some cases it is used interchangeably with ethnography (Merriam, 1988). But case studies tend to focus on a particular group, situation, event, program, or phenomenon, which provides the researcher with

more powerful insight into the target group, situation, or phenomenon. Such a specific focus “makes it an especially good design for practical problem – for questions, situations, or puzzling occurrences arising from everyday practice” (Merriam, 1988, p.11). On the other hand, ethnographic study tends to focus more on the cultural interpretation of behavior and relies more on participant observation as a strategy. This is where the complementarities of case study and ethnographic study emerge: the particularity combined with the long-term on-site observation.

To evaluate the results of the genre-based instruction in the ME class, the research has to turn from comprehensive investigation to in-depth investigation focus because the results of the intervention aiming to resolve the existing contradictions needs to be evaluated and therefore requires the analysis of a relatively ‘bounded system’. The second stage of the present research is an evaluative case study, with the triple aims of description, explanation, and judgment (Merriam, 1988). According to Merriam, the strength of evaluative case study in education lies in its ability to explain the causal links in real-life *interventions* that are too complex for the survey of experimental strategies and that have no clear, single set of outcome. Unlike other aspects of learning that can be judged or measured through survey or testing, the expansive learning that may take place during the intervention is complicated and multi-dimensional and can only be investigated by means of direct observation in natural settings as well as by skillful access to subjective factors (e.g. thoughts, feelings, and desires). Therefore, it was deemed crucial for this study to adopt the case study approach

Now that both ethnography and case study have been introduced, the following subsection turns to developmental and interventional method, which helps to formulate specific research steps.

3.1.3 Developmental and Interventionist Method

According to Vygotsky, to analyze higher mental functions, the research methods must follow three principles: the analysis with a focus on the process rather than the object; the analysis be explanatory rather than descriptive; and a developmental analysis that returns to the source and reconstructs all the points in the development of a given structure (Vygotsky, 1978). This approach is coined “genetic method” or “developmental method”.

The fundamental claim in Vygotsky’s genetic or developmental analysis is that human mental process can be understood only by considering how and where they occur in growth (Wertsch, 1985). This claim attaches greater importance to the process of development than the product. “We need to concentrate not on the *product* of development but on the very *process* by which higher forms are established” (Vygotsky, 1978, p.64, italic original). This methodological insight is utilized in a great deal of L2 research, in which a greater focus is upon the language learning process and the contribution of the learner to that process. For example, there are increasing concerns on how process-oriented teaching methods have influenced the L2 learning process and how the learners are positively involved in this process.

Vygotsky's major focus in genetic analysis was on developmental processes as they normally occurred, but he also examined the effect of disruptions and intervention (Wertsch, 1985). Thus, understanding (research) is not separated from transformation (concrete action) in research guided by sociocultural theories, and Activity Theory in particular. According to Engestrom (2004), "development may be understood as local qualitative reorganization of activity system, attempting to resolve their inner contradictions....the direction of development is an issue of local negotiation and struggle"(p.156). The strength of a developmental and interventionist method is the best supplement for traditional ethnography because:

.... ethnographic studies have traditionally been preoccupied with observing and understanding stable orders, routines, and repeatable procedures. The issue of change has been relatively alien to them.... Developmental theorizing has been largely avoided by ethnographers, possibly fearing deterministic and evolutionist implications. (Engestrom, 2004, p.155)

If, as Spindler & Hammond (2000) put it, research is a "problem-solving device" for practitioner researchers, understanding and explanation of the current situations offered by the ethnographic observation and inquiry is only "an enlightening step" in this problem-solving process. The developmental and interventionist method help to push the research one step further for remediation and resolution. It "encourages engaged critical inquiry wherein an investigation should afford an analysis that would lead to the development of material and symbolic-conceptual tools necessary to enact positive interventions" (Thorne, 2004, p.52).

Although the developmental method does not establish specific research techniques like the other research methods, the process-orientation and interventionism it advocates appeal to some ethnographers and ethnographic intervention studies (or “ethnography of change”, as termed by Hasu (2005)) are conducted in the workplace and school education. Engestrom has conducted ethnographic developmental studies in the clinical workplace (Engestrom 1993, 1995, 2001, 2007a & 2007b). In one of these studies (2007a), “boundary Crossing Laboratory” was introduced to create new space for coordination among patients, practitioners, and specialist in a health care center in Helsinki. In another instance, after articulating the problems and contradictions in a teacher education program at the University of Pennsylvania, Roth & Tobin (2002) used co-teaching and co-generative dialoguing model to replace the traditional approach underlying “student teaching”. Such intervention study produced more participatory and democratic forms of relations between new teachers, cooperating teachers, and supervisors. Another interventionist study (Tsui & Law, 2007) stands out in the EFL context in Hong Kong. In this study, lesson plan was used as a new mediating tool to resolve contradictions inherent in the boundary zone of university tutors, mentor teachers, and student teachers in the school-university partnership, leading to expansive learning of all parties involved.

In Chapter two, critical needs analysis has been conceptualized as the process of understanding the existing conditions and transforming them. Considered from the methodological perspective, critical needs analysis is actually the interventionist research in which concrete action is taken to achieve the objectives of analysis,

criticism and transformation. These triple research aims of analysis, criticism and transformation are embodied in the three research questions posed for the present research, as repeated here again.

- 1) *Analysis*: What are the medical students' English learning needs as perceived by different parties (i.e. students, teachers, administrators and medical doctors) concerned with the Medical English course?
- 2) *Criticism*: What contradictions, if any, are revealed through critical analysis of the English learning needs?
- 3) *Transformation*: How can some of the contradictions be resolved through genre-based pedagogy mediated expansive learning?

The present research can be summarized as a multi-method critical ethnographic study of medical students' English learning needs in the Chinese context. It is armed with three research objectives embodied in the three research questions, which are informed by the methodological perspectives of critical ethnography, case study and developmental and interventionist methods. It is multi-method because it has made use of both qualitative and quantitative methods in data collection. The following section will turn to the introduction of the overall research design and specific research actions and methods in each stage.

3.2 Research Design

Based on the preceding discussions of the strengths of critical ethnography, case study, and developmental and interventionist method, a research design has been formulated following an expansive developmental research model. In this section,

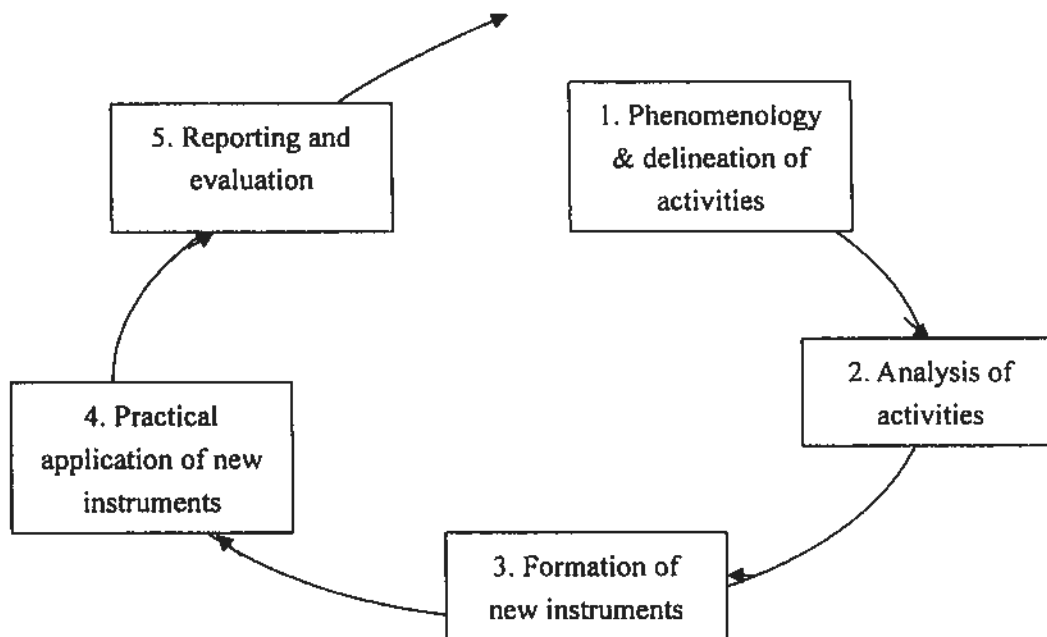
the research design is explained from general to specific, from the introduction of the overall research design to the delineation of research aims, research methods, research instruments and data analysis in the pilot studies and in each stage of the main study.

3.2.1 The Expansive Developmental Research Model

Ethnography, case study, and developmental and interventionist method, the three research methods introduced above, contribute to an expansive developmental research model, based on which the present research is designed. Such a model is adopted from Engestrom (1987) who defined the research tasks in the following way:

Expansive developmental research aims at making cycles of expansive transition collectively mastered journeys through zones of proximal development. In other words, it aims at furnishing people with tertiary and secondary instruments necessary for the mastery of qualitative transformations of their activity systems.
(1987, p.278)

The expansive developmental research is a five-step cycle (see Figure 3.1). One should note that this cycle is open, indicating that more rounds of expansive developmental research may follow.



- Step 1** Gaining a preliminary phenomenological insight into the nature of the activities and delineating the activity systems under investigation
- Step 2** Conducting rigorous analyses of the activity systems
- Step 3** Formulating qualitatively new models as genuine keys for resolving the contradictions
- Step 4** Implementing the new instruments in selected strategic tasks which represent the points of probable breakthroughs into the qualitatively more advanced form of practice
- Step 5** Reporting and evaluating the outcome of the expansive research by employing a set of multiple methods, ranging from phenomenological and anthropological observation and historical analysis to rigorous cognitive analysis of performances, conceptions and discourse processes

Figure 3.1: An Expansive Developmental Research Model (Engestrom, 1987)

Based on this research model, the research steps in the main study are designed as follows:

- 1) Doing an ethnographical investigation of the medical students' English learning needs in the investigated context;
- 2) Conducting an activity-based critical analysis of the medical students' English learning needs that become apparent from step 1;
- 3) On the basis of the needs uncovered, formulating Genre-based Pedagogy as a new instrument in the current EMP practice of the investigated context;
- 4) Applying Genre-based Pedagogy in medical English class; and
- 5) Evaluating the outcome of learning in the Genre-based mediated medical

English class.

Two major research stages can be found in this study: the investigation of medical students' English learning needs (i.e. needs analysis) which comprised steps 1) and 2) and the intervention case study which involves steps 3), 4), and 5). Before the two stages there were two pilot studies, one for the needs analysis and the other for the intervention case study.

So far, the theoretical framework (Figure 2.14), research questions and research steps (Figure 3.1) have been presented. Figure 3.2 should help us visualize their relationship. In this figure, critical and sociocultural theories serve as the theoretical base of the multi-method critical ethnographic study. Activity theory will mainly be used as a contextualizing and analyzing tool in research stage one, during which step one is expected to answer research question one and step two research question two. Genre-based pedagogy model will be an operational tool to formulate and implement the intervention study which will be realized in step three and four. As an observational tool, the GBP mediated expansive learning model will help to evaluate the outcome of the intervention study in step five. Together, steps three, four and five are expected to answer the three sub-questions in research question three.

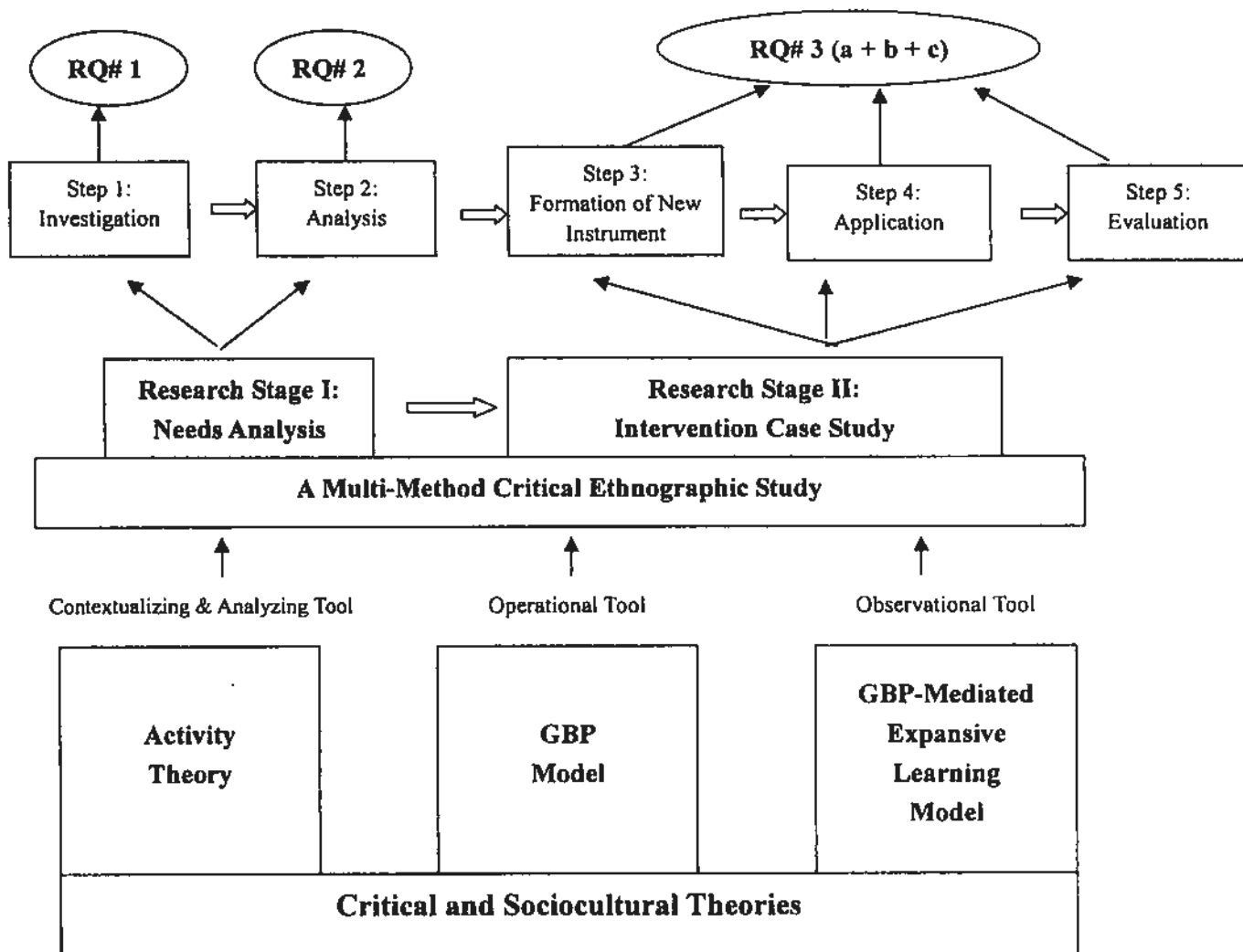


Figure 3.2: The Research Framework

3.2.2 The Overall Design of the Study

This subsection introduces the overall design of the study in terms of the research questions, the kinds of data collected and how the data were collected. The main question posed for the study is: In what ways, if at all, does Genre-based pedagogy, informed by critical needs analysis, transform Medical English instruction and lead to expansive learning? This was answered from three perspectives, each one deriving from the previous step, as presented in Figure 3.3 :

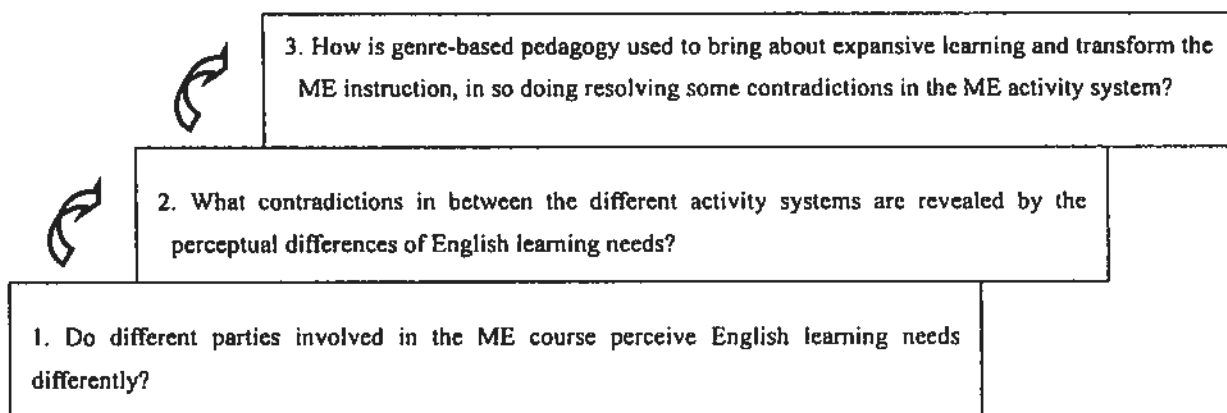


Figure 3.3: Three Step-up Perspectives to the Main Research Question

In the third perspective, namely how genre-based pedagogy is used to bring about expansive learning and transform the ME instruction so that some contradictions in the ME activity system can be resolved, three dimensions to observe the expansive learning in the genre-based framework are identified according to a GBP mediated expansive learning model (see Figure 2.13). It is hoped that some contradictions identified in the previous ME activity system can be resolved in the process of expansive learning.

Data were collected in two stages, namely needs analysis and intervention case study, through various methods, qualitative and quantitative. Each stage was preceded by a pilot study. A summary of the research procedures is presented in Table 3.1.

Table 3.1: The Flowchart of the Research Procedures

Pilot Study (For Needs Analysis)	
Aims	<ul style="list-style-type: none"> ● To provide a practical rationale for the main study ● To establish the workability of the research questions ● To test the effectiveness of data collection instruments and data analysis methods
↓	
Main Study -- Stage I (Needs Analysis)	
Aims	<ul style="list-style-type: none"> ● To investigate the medical students' English learning needs ● To identify the gaps of perceptions between different parties ● To formulate the gaps of perceptions in forms of contradiction
↓	
Pilot Study (For Intervention Study)	
Aims	<ul style="list-style-type: none"> ● To design sample genre-based medical English lesson plan and materials ● To try out team-teaching with a medical English teacher ● To check the initial learning results of the genre-based instruction
↓	
Main Study -- Stage II (Intervention Case Study)	
Aims	<ul style="list-style-type: none"> ● To design genre-based lesson plans and teaching materials for the ME class ● To implement genre-based instruction in the ME class ● To evaluate the genre-based learning results in terms of <ul style="list-style-type: none"> ✓ Students' perceptions of English learning ✓ The concept formation of genre-based pedagogy among students and teacher ✓ The collaboration of medical English teacher with general English teacher indicated by boundary-crossing actions

3.2.2.1 The Investigated Context and Groups

The research was conducted in a medical college of a comprehensive university in south China. The university is the only one in the southeast part of the province. It is selected into the "211 Project", a project launched by the State Department to develop about 100 comprehensive universities into key universities with internationally or nationally advanced academic levels. What makes the university special is the sustained financial support from a foundation founded by an overseas Chinese billionaire ever since its establishment in 1981.

The medical college has about 2000 students and 450 staff (not including the staff in the 5 affiliated hospitals). Besides part-time programs for doctors and nurses in service, it offers full-time course at three levels of schooling: the 4-year level for nursing, the 5-year level for clinical medicine, and the 7-year level for clinical medicine and medical image. Curricular innovations have been pursued for some time in the college. The English Immersion Project began five years ago to fit in the schedule of learning English into a semester (a normal schedule lasts as long as two school years, as required by the College English Curricular Standards), during which medical students would spend about 22 hours every week learning general English as compared to six hours every week in the previous two-school-year schedule. The innovation in medical curriculum is also in process, with different medical subjects re-organized and integrated in a framework of modular instruction.

The subject of interest in the present research is the ME (Medical English) course. Before it was formally set up in March, 2008, the college used to run the course for second- and third-year students, which was at first taught by the general English teachers. My experience of teaching the course happened in 2002 (see the introduction in Section 1.1.1.2) when it was run for the first time. Without a prescribed syllabus or any textbooks, the course was sometimes confused with scientific and technological English, and the teachers taught anything they felt was appropriate. Two years later, a foreign English teacher took over the job. She had no medical background but put in great efforts to teach medical terms and body structures. The students who used to sit for her class have been heard complaining

that they were fed up with what was taught in the class: they spent all the class time copying terms from power-point slides and memorizing them for the exam. In 2005, a Chinese Canadian major in medicine came to the college and taught the course as a volunteer. He seemed a better candidate for the job, with proven language proficiency and medical training. But his sudden departure left the ME course suspended. A formal ME course began in March, 2008. For the first time, there was a syllabus written by a physiology professor who also published a book on medical English three years ago. Several teachers or doctors who have either been trained abroad or passed the college's English instruction qualification evaluation⁸ were invited to join in the ME teaching team. The textbook is *New Medical English* (Zhang, et al., 2005) edited by the physiology professor. The first-year students in the 7-year schooling system are required to take the course.

The medical students under investigation in the present research are in the 7-year schooling system. They take undergraduate courses in the first five years and are trained as postgraduates in the last two years, including internship. Upon graduation, they are granted a master's degree in medicine.

3.2.2.2 The Participants' Roles in the Research

Two main participants in the present research are the researcher and the ME teacher. I, the researcher, played double roles: an insider as an English teacher and an

⁸ To pass the college's English instruction qualification evaluation, applicants present a sample lesson using English as the medium of instruction and their performance is graded by committee whose members are professors with experience of working abroad.

outsider as a teacher-researcher who possessed knowledge about the research context and participants and thus could act as an innovator as well. The roles enabled me to become submerged into the investigated context, conduct the analysis, and carry out intervening actions.

First of all, I have been teaching as an English teacher in the investigated context for nearly 14 years. The familiarity with this context strengthened me with necessary background information of the “what” and “how” of this institution. I could make use of the relations (or Guanxi, a term popular to describe social relations in the Chinese society) to carry out the investigation more conveniently. Another advantage of being an insider is that I also taught during the time of field work, namely from September, 2008 when needs analysis began to May, 2009 when the case study ended. This provided me opportunities to directly come into contact with the group of students under investigation. Although I taught general English rather than medical English, I was able to talk to students and listen to their opinions during the breaks or after classes. Moreover, the class I taught was also used in the intervention case study, and as a result I got to know the students in person and knew them so well that I could use informed judgement to choose the ones most suitable for in-depth study. The students were so familiar with my presence that they thought it was natural to see me in the medical English class, together with the medical English teacher, carrying out the innovative instructional activities.

At the same time, I was also a researcher from outside the medical English class. The etic perspective of an ethnographer has guided my attention towards issues that had never drawn much of my attention before, such as the other teachers' attitude towards English learning and relevant language policies in medical subject courses. I observed medical English classes and medical subject classes, had informal talks with subject teachers on the school shuttles or in the teacher's staffrooms, and visited some of them in their offices for questionnaire survey or interviews. On each occasion, I clearly explained my research purposes and emphasized my position as a researcher rather than a colleague who wanted to probe into other people's business. But as a teacher-researcher, somehow the distinction between an insider and outsider could not be clear-cut. All the time, I have tried to strike a sensitive balance between emic (insider's) and etic (outsider's) perspectives.

Compared with other research, being an intervenor into the process of medical English instruction may be the most unusual role for me to play. As Russell (1997) states, "a single newcomer may change an activity system as she expands her involvement with it over time" (p.522). As the research progressed, my involvement into the activity system of medical English course increased. Dudley-Evans & St. John (1998) identify three levels of cooperation between ESP teacher and the subject specialists: cooperation, collaboration, and team-teaching. My cooperation as a researcher and general English teacher with the medical English teacher can also be described in a similar way as attempted below:

- **Cooperation:** I took the initiative for asking the subject teachers and ME teachers questions and gathering information about the syllabus, teaching materials and teaching activities of the course as well as the tasks the students have to carry out in the medical academic situations.
- **Collaboration:** I invited the medical English teacher whose class was chosen for case study to work with me outside the classroom to analyze the existent problems and work out new instructional activities based on the new concepts brought about by Genre-based Pedagogy.
- **Team-teaching:** I taught with the medical English teacher to implement the lesson plans in the ME class and evaluated the learning results.

As my involvement into the activity system expanded, my role as an intervenor became more and more obvious and secure. Such an evolving role enabled me to move the research process step by step and finally achieve the research purposes.

Another key participant in the research is the medical English teacher in the case study. She also played multiple roles: the teaching practitioner, the research participant and the researcher. When undertaking the responsibility of teaching the ME course as assigned by the college, she was the 'observed' of this research whose behaviours, opinions and feelings were the object of this study. At the same time, as part of boundary-crossing, she was also invited to analyze her own current teaching activities, discuss the potential changes, design lesson plans, carry out classroom practice, and evaluate the learning results with the researcher. In this sense, she was also the observer and the researcher. But her role as a researcher is different from this writer's (my) role as a researcher in that I initiated the research actions at the beginning. In the design of the current study, the ME teacher assumed the major role

of a reflective research participant.

3.2.3 The Pilot Studies

This subsection describes the two pilot studies in essential details: aims, research method, instruments, data analysis, and insights gained for the main study.

3.2.3.1 The Pilot Needs Analysis

(1) Research Aims

First of all, this pilot study aimed to provide information about the selected research site so as to provide a practical background rationale for the main study. For example, interviews with the ME teachers and students helped to provide details of the current curriculum, e.g. how the Medical English curriculum is integrated into the general curriculum for the medical students, how division of labor is made among the teachers, how student learning is assessed, etc. Secondly, this pilot study was intended to establish the workability of the research questions. The first and second research questions presented previously are the results of revision based on insights from this pilot study. The last but not the least aim of the pilot study was to test the effectiveness of the data collecting instruments (e.g. questionnaire, interviews prompts or observation protocol) which were formally used in the main study.

The questions posed for this pilot study are:

- a. What are the needs of learning English as perceived by different participants

involved in the instruction of Medical English?

- b. What are the possible conflicts of these needs and how do the conflicts happen?
- c. How can the conflicts be solved through a critical needs analysis?

(2) Research Design

The pilot needs analysis lasted for one month, during which data were collected through documentary analysis, observations, questionnaire survey, focus group discussions and interviews. It was hoped that data collected from these sources would help to establish an initial case of English learning, ME learning in particular, in the investigated context which tells how English learning needs are perceived by different stakeholders, namely the medical students, the medical teachers, the college, and the medical doctors, and to what extent these needs are (or are not) fulfilled. This comprehensive investigation (as indicated by the purposes of different research methods in Table 3.2 below) is theoretically based on the broad concept of needs analysis presented in Chapter 2.

Most documents were collected from the college websites, where notices concerning the ME course and English policies were available. Some documents were obtained from the head of the ME teaching team, namely the teacher who participated in the intervention case study.

Six students from each grade (totally six grades only⁹) were randomly chosen for the questionnaire survey and altogether 36 questionnaires were distributed outside class

⁹ The college began to enroll the seven-year medical students in 2002. When the pilot study began in April, 2008, there were only six grades of seven-year students.

through my personal contact with the students with the help of the tutors in each grade who had the students' contact numbers. All the students were informed of the purpose of the questionnaire survey and agreed to fill in the questionnaire for free. Finally 32 were returned and all but one was complete and valid (response rate = 86%). The students from each grade were then invited to join in focus group discussions with the researcher, four conducted in the classroom after class and two in the office of the Foreign Languages Department. The length of the focus group discussions ranged from one hour to one and a half hours. How this data collecting method was developed is introduced in Section 3.4 of the pilot needs analysis report in Appendix 5A.

At the same time as the focus group discussions, 6 classroom observations were carried out (four third-year classes and 2 second-year classes). Five ME teachers whose classes had been observed were randomly chosen to fill in the questionnaire that paralleled the student version, three of whom were interviewed right after the observations or two days later (of the other two teachers, one showed reluctance to be interviewed and the other left for a conference the day after the observation).

The investigation among the medical doctors was carried out with a pediatrician from an affiliated hospital of the Medical College through workplace activities recording and retrospective interview. The pediatrician was first given an activity sheet to record her workplace activity in a day shift and was interviewed the next morning. How this research method was developed is introduced in Section 3.4 of

the pilot needs analysis report in Appendix 5A.

The research methods, purposes, and participants of the pilot needs analysis are summarized in Table 3.2 below.

Table 3.2: Research Methods, Purposes, and Participants of the Pilot Needs Analysis

Methods	Purposes	Participants (numbers as indicated in the blackest)
Documentary Analysis	To gather information about the English policies including teaching and learning of the college; To gather information about the ME course.	
Questionnaire Survey	To investigate the medical students' purposes of learning English and their perceptions of the current medical English course.	Students: Grade 2002 (5); Grade 2003 (4) Grade 2004 (5) Grade 2005 (6) Grade 2006 (6) Grade 2007 (5) Total (31) Teachers: (5)
Classroom Observations	To identify the common class activities; To collect evidence of the students' attitudes towards English learning from their responses to these activities; To identify possible unfulfilled learning needs.	6 classes taught by different ME teachers
Focus Group Discussion	To provide a more in-depth view of learning needs by eliciting explanations regarding the student's previous and present English learning experiences; To find out the students' expectations of the Medical English course and to what extent the expectations are fulfilled;	6 group discussions with different groups of students from grade 2002 (4), 2003 (4), 2004 (5), 2005 (6), 2006 (6), 2007 (5).
Post-observation interviews	To investigate the teachers' own English learning needs and English learning/teaching experiences which may influence their teaching of the ME class; To find out the teacher's perception of English learning needs for medical students and medical professionals	3 teachers who teach ME
Retrospective interview	To identify the common activities that a medical professional usually engages in work; To identify the role of English and English learning in their routine jobs	A pediatrician in the first affiliated hospital of the Medical College

(3) Research Instruments

The research instruments used in this pilot study are English learning questionnaire, classroom observation protocol, focus group discussion prompts, post-class interview prompts, doctor's workplace activity sheet, and retrospective interview prompts. They are introduced in the following subsections.

(A) English Learning Questionnaire

At the very outset, the questionnaire aimed at a comprehensive investigation of English learning among the medical students. It referred to some questionnaires used in language learning needs analysis and whose research purposes are more or less similar to the present ones (e.g. Zughoul & Hussein, 1985; Chia, et al. 1999; Boshier & Smallkoski, 2002). For the subjects to understand the questionnaire better in their mother tongue, the questionnaire was translated into Chinese when used. The Chinese version was checked by the English teacher who also checked the categorization of the articles on medical English published in Chinese journals (see Section 2.2.2) to make sure that it was equivalent to the English one. There are altogether six sections (for details see Appendix 1A¹⁰):

- Section one on personal background information;
- Section two on students' purposes of learning English;
- Section three on the importance of learning English and various linguistic skills required in the medical field;

¹⁰ Materials that were used in the pilot needs analysis and the pilot intervention case study and were revised later to be used in the main study are appended in Appendix 1 and 2. Those that were not revised after piloting and were used again in the main study are appended in Appendix 3 and 4.

- Section four on students' self-evaluation of their linguistic proficiency;
- Section five on the current ME course; and
- Section six on students' preferred ways of learning English inside and outside the classroom.

After piloting, the English learning questionnaire was revised (see Appendix 1B for a second version of Section two) and piloted again until a final version was decided for the main study (see Appendix 3A). Section 3.5 of the pilot needs analysis report (see Appendix 5A) introduces how the English learning questionnaire was revised and piloted.

(B) Classroom Observation Protocol (for needs analysis)

The classroom observation protocol was designed to record the ME classes that were observed so as to identify the common class activities, to gather evidence of the students' attitudes towards English learning from their responses in these activities, and to identify unfulfilled learning needs, if any.¹¹ It was used at the same time when classroom observations were conducted.

The classroom observations were conducted to answer the following questions which would illuminate the answers to the main research questions:

- ◇ What are the common class activities in the medical English class?
- ◇ What evidence can be found from students' responses in these activities to indicate their attitudes towards English learning?

¹¹ The unfulfilled learning needs may not be observed directly from the classroom. But data about what the ME teacher intended to teach and how the students responded in the class, when triangulated with data from other sources such as the questionnaire survey, can help to identify the unfulfilled learning need.

- ◇ To what extent was the classroom instruction able to satisfy students' English learning needs?

It contains two sections:

- A table with 9 items to fill in to delineate the instructional activities in the ME classes, including the specific activity, activity type, time spent on the activity, medium of instruction, student involvement, student activity, teacher activity, the purposes of the activities, and the instructional aids. The activity types used here to describe the classroom activities follow Richards & Lockhart's categories (2000). For a detailed introduction of these activity types, please see Section 4.3.1.
- An open question reminding the researcher to record anything that can explicitly or implicitly indicate what and how the teacher wants the students to learn or what and how the students want to learn.

The classroom observation protocol was piloted and proved to be effective in recording the instructional activities in the ME class (for reference see Appendix 3B). The same version of classroom observation protocol was used in the main study.

(C) Focus group discussion prompts

The focus group discussion with the students aimed at answering the following questions:

- What activities are related to English learning and used in the students' academic and personal everyday life?
- What are the students' perceived English learning needs?
- What are the student's expectations from the medical English course and to

what extent are their expectations satisfied?

The focus group discussion prompts include nine open questions asking the medical students' views about English learning and, in particular, the medical English course, so as to provide more in-depth views of student's self-reported perceptions of English learning needs (see Appendix 3C).

(D) Post-observation Interview Prompts

The post-observation interview prompts are made up of four groups of open questions, inquiring about the ME teachers' English learning experience, their own English learning needs, their views of the students' English learning needs, and their views of the ME course (See Appendix 3D). The ME teachers' needs of using English as medical professionals would help to identify the medical students' English learning needs as teachers or researchers in university in the future.

(E) Doctor's Workplace Activity Sheet

The doctor's workplace activity sheet was given to the doctor to record her activities in a typical workday, which are described in a table composed of these items: activity time, venue, participants, purposes, language used, and tools that are used in the activity (See Appendix 3E).

(F) Retrospective Interview Prompts

The retrospective interview with the doctor took place one day after the workplace

activity sheet was filled in by the doctor. Six open questions in the retrospective interview prompts asked for more detailed information of the doctor's workplace activities and the roles English plays in their routine work and daily life (See Appendix 3F). It was hoped that by investigating the medical doctor's needs of using English, the students' English learning needs as medical doctors in the future could be identified.

(4) Data Analysis

The data from the questionnaire survey were tabulated on computer sheets. The students participating in questionnaire survey were divided into three levels: elementary level (the first- and second-year students), intermediate level (the third- and fourth-year students), and higher level (the fifth- and sixth-year students). Means of all items were calculated among different levels. In the teacher group, means were also computerized, which were then compared with the student group.

All verbal data from the focus group discussions and interviews were transcribed and read through until general patterns emerged after several rounds of reading. They were coded and put into different categories for further analysis. The collected documents and classroom observation protocol were categorized and summarized. The multiple sources of data were then cross-referred and triangulated to seek answers to the research questions.

(5) Insights Gained for the Main Study

The insights gained from the pilot needs analysis for the main study can be summarized as follows (for detailed discussion see Section 3 of the pilot needs analysis report in Appendix 5A).

- The research design was revised to become a five-stepped developmental model to conduct critical needs analysis.
- The research questions were revised or formulated based on the results of the pilot needs analysis.
- Directions for further literature search became evident in order to decide on the methods to implement the genre-based instruction in the ME class and observe and analyze the genre-based learning.
- Some data collecting methods were further developed for the main study, such as the focus group discussions with the students and the retrospective interviews with the doctors.
- The effectiveness of the data collecting instruments was tested, among which the English learning questionnaire was revised and piloted again.

3.2.3.2 The Pilot Intervention Case Study

(1) Research Aims

The pilot study for intervention case study was conducted with the following aims:

- To design and pilot some teaching materials developed from the genre-based pedagogy that would be used in the case study;
- To explore the effectiveness of team-teaching between general English teacher (the researcher) and medical English teacher;
- To try out specific research instruments; and
- To check the initial learning results of the genre-based instruction.

The Research questions are:

- a. What are the students' responses to the new teaching materials and activities based on genre-based pedagogy?
- b. In what ways does genre-based instruction impact on the students' learning?
- c. In what ways does genre-based instruction impact on the medical English teacher and the researcher as a result of the team-teaching?
- d. How do the ME teacher and the researcher go about team teaching and what factors influence its effectiveness?

(2) Research Design:

This pilot study followed the design of the intervention case study although the length of the study is much shorter (the classroom instruction was only one quarter of the case study in length, i.e. 5 hours). The researcher cooperated with a medical English teacher (introduced in the next paragraph) in lesson planning and classroom instruction by introducing genre-based pedagogy into the medical English class. The impact of this intervention on both the students and the teacher was checked.

To avoid possible contamination of data for the formal study, the medical English teacher who had been selected for the case study was not chosen for the pilot study. The final candidate was decided on a pediatrician (hereafter called Xiao by pseudonym) who has been teaching medical English ever since the course was set up in March, 2008. During the first stage of the study, i.e. the needs analysis, the researcher observed her class, interviewed her, and observed her presentation in the medical English symposium held by the college. Data of this stage of study indicated that this teacher not only showed great interest in teaching but also the initiative to

reflect on her instruction.

When the pilot study was about to begin, Xiao was teaching two classes of first-year medical students, one of which had been decided as the case of inquiry in the subsequent formal study. So the other class of 47 students was selected.

One pre-unit discussion and one post-unit discussion with Xiao were conducted in Chinese. A lesson plan for the unit (The original teaching schedule stipulated the content of each unit. The unit for the pilot study is about the urinary system) was designed through several email exchanges, a face-to-face discussion and several discussions through telephone. Before the face-to-face discussion, Xiao sent her original lesson plan and teaching Power Point to the researcher and the researcher made some revisions and sent them back to Xiao. The discussions went on through email exchanges until an initial lesson plan was formulated (see Appendix 2D for the lesson plan used in the pilot intervention case study). The pre-unit focus discussion was arranged one week before the classroom instruction and lasted for about 85 minutes.

The classroom instruction took place on Monday and Wednesday afternoons (3 hours and 2 hours respectively) within the same week. Both classes were video-taped with the students' permission. After the class on Wednesday afternoon, a genre-based instruction questionnaire was distributed to the students and collected right after they finished the class. Totally 46 completed and valid questionnaires were collected.

A post-unit reflective log was given to Xiao for her to records her reflections and evaluation of the team-teaching. Post-unit focus discussion with Xiao was arranged two days later on Friday morning, which was based on the finished reflective log and lasted about 96 minutes. During the period of the pilot study, the researcher kept writing research diaries after each focus discussion and classroom instruction.

(3) Research Instruments

The research instruments used in this pilot study were genre-based instruction questionnaire, classroom observation protocols, focus discussion prompts and reflective log. They are introduced as follows.

(A) Genre-based Instruction Questionnaire

The genre-based instruction questionnaire aimed at finding information about the students' responses to the classroom activities, the teaching materials, and the teachers' instruction and what they have learned from the unit of teaching. For the students to better understand the questionnaire, the questionnaire was also translated into Chinese at the time of use, which was checked by the English teacher who had helped with the categorization of the research articles on EMP in China (see Section 2.2.2) and check the Chinese version of the English learning questionnaire (see Section 3.2.3.1). Here is a detailed explanation of the genre-based instruction questionnaire (see Appendix 2B). It contained two sections:

- Twelve 5-point Likert-scale statements (ranging from strongly agree (5 points) to strongly disagree (1 point)) asking about the students' evaluation of the

- usefulness of the unit of lesson in their study (Items 1, 2 and 3), the usefulness of the materials used (Item 4), the helpfulness of the classroom activities in their study (Items 5a, 5b, 5c, and 5d), the effectiveness of both teachers' instruction (Items 6a and 6b), and the effectiveness of and their interest in the teaching approach used for the unit (Items 7 and 8).
- Four open-ended questions inquiring about the students' perceptions of learning from the unit of study (Item 9), their likes and dislikes of the lesson (Items 10 and 11), and, finally, any comments they want to give on the lesson.

(B) Focus Discussion Prompts

The focus discussion prompts centered on four topics, the first three of which were discussed in the pre-unit discussion and the last one in the post-unit discussion.

These consisted of discussion of the:

- ◆ current medical English class including the current problems and possible ways of improvement;
- ◆ genre-based pedagogy including the theoretical framework and implementation inside the classroom;
- ◆ design of lesson plans including teaching material and activities; and
- ◆ ideas about the genre-based instruction including the teacher's and the students' reactions to the genre-based instruction, possible ways to improve it and the teacher's developmental understanding of genre-based pedagogy, if any.

The focus discussion prompts piloted in the intervention case study were used again in the formal case study. See Appendix 4C for the list of questions raised for the focus discussion.

(C) Classroom Observation Protocol (for pilot case study)

The classroom observation protocol for the pilot case study¹² is a table of 7 items describing the students' responses to the seven activities of the unit including different instructional sections and student activities. Besides, there is an open question asking the observer to think about anything pertaining to the instruction that deserves further discussion with the ME teacher. This classroom observation protocol was later used in the case study. But because different units of instruction had different activities, the items of observation for each unit varied. Later in the case study, the observation protocol for each unit was designed according to the lesson plans. Appendix 2C provides the observation protocol used in the pilot intervention case study.

(D) Post-unit Reflective Log

The reflective log contains a similar table with the classroom observation protocol (see Appendix 4E). It was important to ensure that the ME teacher would reflect on the same items as the observer so that, in the post-unit focus discussion, they could exchange ideas based on the reflection log and the observation protocol. Also included were five open questions inquiring about the ME teacher's evaluation of the classroom activities, the students' learning and her own learning from the experience of genre-based instruction.

The following table presents how different instruments were utilized to collect data for this pilot study.

¹² There are two kinds of classroom observation protocols in the present research, one for the needs analysis and the other for the case study.

Table 3.3: Research Questions and Instruments of Pilot Intervention Case Study

Research Questions	Research Instruments
What are the students' responses to the new teaching materials and activities added into the medical English class?	Class observations Post-unit questionnaire
In what ways does genre-based instruction impact on the students' learning ?	Post-unit questionnaire
In what ways does genre-based instruction impact on the medical English teacher and the researcher as a result of the team-teaching ?	Reflective log Pre- and post-unit focus discussions Research diaries
How do the ME teacher and the researcher go about team teaching and what factors influence its effectiveness and weaknesses, if any ?	Reflective log Pre- and post-unit focus discussions Research diaries

(4) Data Analysis:

The questionnaire data were subjected to Statistical Package for Social Sciences (SPSS) yielding mainly descriptive data. The open-ended question data were compiled and categorized. The recorded focus discussions were recorded and summarized. The classroom activities on students' oral practice are transcribed and treated as the oral products of the students in the class. This data was categorized and summarized. The observation protocol, reflective log and research diaries were also analyzed and summarized. The multiple sources of data were then cross-referred and triangulated to seek answers to the research questions.

(5) Insights Gained for the Main Study

The insights gained from the pilot intervention case study for the main study can be summarized as follows (for detailed discussion see Section 3 of the pilot intervention case study report in Appendix 5B):

- ◆ The pilot study indicated some areas of improvement for the teaching activities and materials to be used in the formal case study, such as adding video materials, integrating written materials with oral practices, and more effectively staging the classroom activities.
- ◆ The pilot study also pointed out possible ways to enhance the students' learning from the genre-based instruction, which included explicit instruction of English use in different medical situations and the highlighting of important concepts in GBP to develop the students' understanding.
- ◆ The pilot study suggested ways to improve the team-teaching between the ME teacher and the researcher, such as prolonging the pre-class negotiation and discussion and developing more efficient interview techniques to skillfully elicit the medical teacher's opinions.

3.2.4 The Main study

This subsection introduces the main study in two stages, namely needs analysis and intervention case study.

3.2.4.1 The Needs analysis

This subsection provides information about how needs analysis was conducted. It will introduce the purposes of the study, research design and instruments, and data analysis.

(1) Research aims

The needs analysis aimed to investigate the medical students' English learning needs and identify the existent contradictions in the investigated context. Two research questions are posed at this stage:

- 1) What are the medical students' English learning needs as perceived by different parties (i.e. students, teachers, administrators and medical doctors) concerned with the Medical English course?
- 2) What contradictions, if any, are revealed through critical analysis of the English learning needs?

(2) Research Design

This stage of study made use of different data-collection techniques such as documentary analysis, classroom observation, interview, and focus discussion in combination with questionnaire survey to investigate the medical students' English learning needs in the investigated context. At the same time, various sources of information were obtained, including the students from different grades, the teachers in different teaching and/or administrative posts, and the doctors in different departments of a hospital. The triangulation of sources and methods in needs analysis, as advocated by Long (2005), is presented in Table 3.4 and the implementation of each research method is introduced subsequently. When appropriate, research instruments are also described.

Table 3.4: The Source-Method Triangulation in Needs Analysis

Sources	Methods				
	Questionnaire	Interviews	Focus Discussion	Classroom observation	Document analysis
Medical students from different grades	✓		✓	✓	
Subject teachers	✓	✓			
Medical English teacher	✓	✓	✓	✓	
College administrators	✓	✓			
Medical doctors		✓			
Documents, syllabus, textbook, handout, etc.					✓

(3) Research Methods and Instruments

(A) Documentary Analysis

Documents were collected and analyzed to provide contextual information about the ME course and the college policies about English teaching and learning. Many documents had been collected in the pilot needs analysis from the college websites or obtained from the head of the ME teaching team. During the main study, more documents related to the college policies on English teaching and learning were gathered. The following is a list of the documents that had been collected:

- A). Medical English syllabus designed by the teaching team;
- B). The textbook “*New Medical English*” used by the ME course (Chinese Science and Technology Press, 2005);
- C). A teaching evaluation form used by the Medical College;
- D). A questionnaire used by the Medical English team to investigate the teachers and students’ opinions of the course;
- E). College notices concerning the college language policies such as bilingual instruction and English instruction;
- F). College notices concerning the selection of students for further study in Japan, Canada and Britain, the selection of students to attend the English Immersion class (EIC)¹³, the requirement of postgraduate students to present English report, and notices of academic seminars presented by foreign medical experts on campus;
- G). A statistical table provided by the Employment Guidance Centre of the Medical College concerning the employment of graduates in the year 2004, 2005, and 2006; and
- H). A statistical table provided by the Student Affaire Office about the number of

¹³ Students in the EIC class will take medical subject courses in English all the time and they will be trained to sit for the United States Medical Licensing Examination (USMLE). For more information see 4.1.1.

students who have been sent abroad for further study or academic activities from September 2005 to August 2007.

(B) The Questionnaire Survey

◆ Subjects and Procedure

A survey that intended to investigate medical students' English learning needs was conducted through questionnaire among different parties, namely medical students, ME teachers, medical subject teachers, and college administrators. Because students' learning needs may change during their course of study (Chamber, 1980; Robinson, 1991), students from different grades were included as subject of investigation to provide a comprehensive and systematic assessment of their English learning needs. Altogether, 689 complete and valid questionnaires were collected, 37 to college staff and 652 to students from different grades.

The distribution of the questionnaire among the college staff was “politically” sensitive because, my insider privilege suggested that the language policy of the college was a controversial issue among the teachers, but, as in other contexts in China, people did not talk about it openly. To avoid misunderstanding, I explained my research purposes via personal communication and distributed the questionnaire face to face. Although the subjects were randomly chosen, two principles were followed: first, the teachers should come from different teaching departments¹⁴; second, the teachers should be of different age levels and educational levels. In this

¹⁴ These teaching departments are Pathology, Physics & Communication, Chemistry, Anatomy, Histology & Embryology, Physiology, Biology & Immunology, Pharmacology, Pathogenic Biology, and Public Health & Preventive Medicine.

way, the survey results were made sure to have come from a more comprehensive group of teaching staff. Table 3.5 provides the statistics of the distribution of questionnaire among the college staff.

Table 3.5: Descriptive Statistics of Questionnaire Survey Subjects Among College Staff

Subjects	Number	Age Level			Educational Level		
ME teachers	6		20-40	56.76%		Bachelor	8.10%
Administrators	5	40-60	43.24%	Master	32.43%		
Medical Subject teachers	26			PhD	59.46%		

The questionnaire was distributed to the students in different ways. I taught general English to three classes of first-year students and therefore, had the opportunity to give the questionnaire to the students during the morning breaks, which was in between two subject classes and lasted for 20 minutes. One of my colleagues in the Foreign Languages Department helped with the distribution among the other three first-year classes, which she taught. The questionnaire was also distributed at the morning breaks among the second-, third-, and fourth-year students when the whole grade gathered together in big auditoriums for lectures. I explained my survey purposes to the students and requested them to finish the questionnaire during the break, which I collected afterwards. For the fifth-, sixth, and seventh-year students who have internship in hospitals, a contact person in each hospital was found with the help of the tutors. The questionnaires were then distributed and collected for me by the contact person from the intern students' dormitories. Because some students were interning in the hospitals in other cities, the response rates of these three grades are relatively low. Table 3.6 presents the descriptive statistics for the distribution of the questionnaire among the students.

Table 3.6: Statistics of Questionnaire Survey Subjects Among Students

Grade	Students' Total Number¹⁵	Number of Collected Questionnaire	Response Rate
1 st Year	198	182	91.91%
2 nd Year	178	107	60.11%
3 rd Year	179	103	57.54%
4 th Year	176	118	67.04%
5 th Year	165	83	50.30%
6 th Year	132	50	37.88%
7 th Year	25	9	36.00%
Total	1053	652	61.91%

◆ Design of the Questionnaire

The English learning questionnaire retained the same format as the one that had been piloted in the pilot needs analysis. The questionnaire had been designed to answer these questions:

- ◆ Why do the teachers/students think medical students need to learn English?
- ◆ How important is English learning for medical students' study and career development? And, more specifically, **what** English language skills are considered important and should be included in the teaching content?
- ◆ **How** do the teachers/students think English should be learned, in their context, through the instruction of medical English? This question is answered from two perspectives:
 - ✓ What do they expect from the medical English course?
 - ✓ How do they evaluate the teaching content, materials and activities in the current medical English class?

Therefore, in the present research, the medical students' English learning needs are investigated from three aspects: why to learn, what to learn, and how to learn.

To elicit data to answer the first question, items are designed according to a theoretical framework of motivation in foreign language learning (Dornyei, 1990,

¹⁵ The total number of students was obtained from the Medical College's document on student statistics.

1994 & 2001). According to Dornyei (1990), there are two motivation subsystems: *Instrumental motivational subsystem* (the *intrinsic* or *extrinsic* motives organized by the individual's future career striving) and *Integrative Motivational subsystem* (the attitudes, orientations, and motives centered around the individual's L2-related affective predispositions, which consists of four dimensions: *interest in foreign languages, cultures, and people, desire to broaden one's view and avoid provincialism, desire to integrate into a new community, and desire for new stimuli and challenges*). Thus, a total of two categories with six sub-categories or dimensions are formulated to ask the teachers'/students' perceived purposes or reasons for learning English. To increase the reliability, each dimension has three items that clarify it in different ways.

The English learning questionnaire contained 3 main sections:

- Eighteen 5-point Likert-scale statements (5 points as strongly agree and 1 point as strongly disagree) asking about the subjects' views of medical students' purposes and reasons for learning English.
- Four 5-point Likert-scale questions with a total of 39 items (5 points as the most important and 1 point as the least important) asking about the subjects' views of the importance of various English skills in the medical study and future career.
- Twelve questions asking about the subjects' views of the current ME course. Some questions provided dichotomous or multiple choices, while some offered 5-point Likert-scale choices (5 points as the most frequent or the most preferable and 1 point as the least frequent or the least preferable).

The sections, main categories and items of the questionnaire are summarized in Table

3.7 (For details please see Appendix 3A¹⁶).

Table 3.7: English Learning Questionnaire Structure

Section	Category	Sub-category	Item
I. Personal background	Age, sex, grade, length of English study and experience of going abroad		1--5
II. Purposes and reasons of learning English	Instrumental motivational subsystem	Intrinsic motives	6, 12, 18
		Extrinsic motives	7, 13, 19
		Interest in foreign languages, cultures, and people	8, 14, 20
	Integrative motivational subsystem	Desire to broaden one's view and avoid provincialism	9, 15, 21
		Desire to integrate into a new community	10, 16, 22
		Desire for new stimuli and challenges	11, 17, 23
III. Importance of English	Importance of English in medical study	General perception	24
		Importance of English skills in medical study	26 (a, b, c, d, e, f, g)
		Importance of English sub-skills in medical study	27(A, B, C, D, E, F, G)
	Importance of English in career development	25	
IV. Current medical English course	Necessity of ME course		28
	Expectations of ME course		29, 30, 35
	Evaluation of ME course		31, 32, 33, 34,

The questionnaire for medical English teachers and other subject teachers have parallel structure with the student version. The only difference in the version for other subject teachers is that items in Section IV only ask about the necessity of and

¹⁶ Because of the length limit, only the student version of the English learning questionnaire is provided. The teacher version has parallel items and is not included in the appendix.

expectations of the medical English course because they do not teach medical English and are not in the position to evaluate the course. All versions of questionnaire were again translated into Chinese so that the subjects could understand them best in their first language.

(C) The Classroom Observations

In the pilot needs analysis, six classroom observations (four third-year classes and two second-year classes) had been undertaken, which proved to be successful to collect the needed data. So these observation data were kept for the main study.¹⁷ With the classroom observation protocol (Appendix 3B) that had been piloted, two more observations (two first-year classes) were conducted in the main study. The eight classroom observations have a total length of 19.5 hours, including 7 ME teachers.

(D) Post-Observation Interviews with ME Teachers

The post-observation interviews with the ME teachers were also semi-structured, using the same interview prompts in the pilot study (See Appendix 3C). In addition to the three done in the pilot study, four more were conducted. A total of 368 minutes of interviews were recorded with the teachers' permission.

(E) Interviews with Subject Teachers (Including College Administrators)

¹⁷ This is one reason why some data used in the pilot study were included in the main study --- because there were only several ME teachers, excluding these pilot study participants would result in too small a sample in the main study. Another reason for using some pilot study data in the main study is that upon piloting, some research instruments proved to be effective and modifications did not have to be made. The data gathered by these instruments are of value for the main study. This is the case when some pilot study data gathered by interviews and focus group discussions were used in the main study in the present research. For the discussion of including pilot study data in the main study, see Edwin & Hundley 2001.

The interviews with the subject teachers were also semi-structured with the interview prompts that were similar to the ones used in the interviews with the ME teachers. The only difference was that the ME teachers were invited to talk about how they taught and evaluated the ME course, while the subject teachers were invited to talk about their ideas about the ME course, such as course objectives, teaching contents, etc. Fifteen subject teachers were interviewed, three of whom also had administrative responsibilities, namely the vice-dean, the chief of the Student Affairs Office, and the chief of the Human Resources Department. A total of 591 minutes of interviews were recorded with the teachers' permission.

(F) Focus Group Discussions with Students

Six focus group discussions with the students have been conducted in the pilot study and the data were kept for the main study. One more focus group discussion was done with the first-year students in the main study. So far, students from all learning levels were involved and the total of students joining in the discussion was 36. 360 minutes of discussions were recorded upon the students' permission. The focus group discussions used the prompts that had been piloted in the pilot study (See Appendix 3D).

(G) Retrospective Interviews with Medical Doctors

Following the procedure in the pilot study, the workplace activity sheet was first sent to the doctor to record a typical workday. Then a retrospective interview was arranged, which was also semi-structured with the interview prompts. All

interviewed doctors came from an affiliated hospital of the medical college where many intern students practice every year and a certain number of them get employment. They work in various departments including Pediatrics, General Surgery, Nutrition, Orthopedics, Pharmacy and Cardiovascular Medicine. Together with the one conducted in the pilot study, seven interviews with doctors were conducted, over a total time of 254 minutes. Among them, three were telephone interviews because the doctors could not spare the time for face-to-face talks. Both the workplace activity sheet and interview prompts had been piloted and reused in the main study (see Appendix 3E and Appendix 3F).

The obvious concern is that if there were problems with the research tool and modifications had to be made in the light of the findings from the pilot study, data could be flawed or inaccurate. However, where an established and validated tool is being used and the pilot study is determining other methodological aspects such as recruitment rates, it could be argued that such data should be of value.

To sum up, Table 3.8 provides an overall picture of how data were obtained through the research methods introduced above.

Table 3.8: Details of Research Methods in Needs Analysis

Research Method	Research Instrument	Subject (numbers as indicated in the brackets)	Length
Questionnaire Surveys	Questionnaire	Students (652) ME Teachers (6) Subject Teachers (including administrators) (31)	
Classroom Observations	Classroom Observation Protocol	ME teachers (7) students of first-year (2 classes) second-year (2 classes) third-year (4 classes)	19.5 hours
Post-Observation Interviews	Post-Observation Interview Prompts	ME teachers (7)	368 minutes
Interviews	Interview Prompts	Subject Teachers (including administrators) (15)	597 minutes
Focus Group Discussions	Focus Group Discussion Prompts	Students from 7 Grades (36)	360 minutes
Retrospective Interviews	Retrospective Interview Prompts	Medical Doctors (7)	254 minutes

(4) Data analysis

Quantitative data collected from the questionnaire survey were tabulated on computer sheets and put in the Statistical Packet for Social Science (SPSS). First, descriptive analysis was conducted through frequencies and percentages calculation. Statistical tests such as Chi-square, t-test, and ANOVA analyses were then used to determine the perceptions of English language needs of medical students, their teacher, and other parties to compare the perceptions held by various groups.

All verbal data including focus discussions and interviews were verbatim transcribed. This, together with the data from documents and teaching materials, underwent three stages of data transformation advanced by Wolcott (1994):

- **Description:** the presenting of information in chronological order or by using the researcher or narrator order. This process involved scanning the raw data to

check it for completeness, jotting notes and observations as the reading progressed, and initial analysis by examining groups in interaction, following an analytic framework, or showing different perspectives through the views of informants.

- **Analysis:** a sorting procedure which involves highlighting specific material introduced in the descriptive phase or displaying findings through tables, charts, diagrams, and figures. Specifically, broad outlines were established, and chunks of data assembled, fitting together to become a coherent whole. As patterned regularities emerged, conceptual techniques such as comparing, contrasting, aggregating, and ordering were utilized to establish linkage and relationships between the different sources of data and between the investigated groups and larger theoretical framework.
- **Interpretation:** arriving at interpretation of the meaning as informed by the literature, personal experiences, or theoretical perspectives. Inferences were drawn from the data and connected with theory to provide structures for interpretation.

(Wolcott, 1994; Creswell, 1998))

The data from various research methods were then cross-referred and triangulated to answer the research questions.

3.2.4.2 Intervention Case Study

Let us move to the operationalization of the intervention case study and its implementation in the context introduced previously (See 3.2.2.2).

(1) Research Aims

The major purpose of the case study was to check if intervention instruction (genre-based medical English instruction) can help to resolve some of the

contradictions identified in the needs analysis. It intends to answer the third research question and its three subsidiary questions presented once again as follows:

- 3) How can some of the contradictions be resolved through the Genre-based Pedagogy mediated expansive learning?
 - a) How, if at all, are the students' perceptions of English learning needs reconceptualized?
 - b) How is the concept of genre-based pedagogy conceptualized and transformed in the process of learning?
 - c) How, if at all, does boundary-crossing happen to facilitate the teacher's genre-based teaching?

(2) Research Design

In the intervention case study, I cooperated with a ME teacher in designing genre-based lesson plans and teaching activities, implementing the genre-based instruction in the ME class, and evaluating the learning results. The instruction was 20 hours long, covering 3 unit of the ME course. The classes were video-taped with the teacher and the students' permission. I had focus discussions with the ME teacher before, during and after the instruction. Soon after the instruction, an English learning questionnaire survey and a genre-based instruction questionnaire survey were administered to evaluate the students' learning brought about at the end of the instruction. Six students were selected for in-depth analysis. Post-unit interviews with them were held separately after the instruction of each unit.

(A) The Subjects

The ME teacher, Fang by pseudonym, selected for this intervention study is the head of the ME team. She graduated from a medical college in north China and worked in the same college for more than 20 years until she shifted to the present medical college after obtaining a doctoral degree in molecular genetics. When she was teaching medical subject in the previous medical college, she also taught medical English (see Section 7.1.1 for more introduction of her experience in teaching medical English) and edited a textbook with her colleagues there. She teaches physiology in the present college and was assigned to design and teach medical English in 2008. The textbook the ME course is currently using is the one that was edited by her and her previous colleagues. She also wrote the ME syllabus, scheduled the timetable, and designed the official evaluation form for this course. Therefore, she could be considered one of the most important informants in the investigation and would indeed enrich the case study considerably. Moreover, a close rapport had gradually developed between her and the researcher since the first pilot study began. She showed great interest in the research and told the researcher several times that she really wanted to improve her teaching. Her willingness to accept innovations and critically reflect on practice makes her an ideal candidate for the intervention study.

One intact class of first-year medical students (students No = 46) was chosen in the case study. The first-year students were selected because the ME course had only started for the first- and second-year students and all second-year students had already finished the course at the beginning of the study. This class was recommended by the medical English teacher. T-test showed that there is no

statistically significant difference between this class and the other classes in the same grade in terms of their English placement exam¹⁸ results and the questionnaire results in needs analysis. On an average, they had 8.13 years of exposure to English ---- learning English as a subject (the average years of exposure to English for the whole grade is 8.34). It can, therefore, be concluded that this class is a homogeneous group from the grade. As first-year students, they would have to sit for the College English Test¹⁹ (Band 4) about two months after the study.

The six students selected for in-depth analysis were not randomly chosen. Because I had an opportunity to teach the class general English in the previous semester, I was able to get the data of the students' views of medical English learning (see Appendix 4A for the open questions I raised in a workshop for the students to answer). This data, together with the medical English teacher's recommendation based on the students' performance in the ME class, helped us to select 6 students from the class for in-depth analysis. These students are divided into three groups according to their levels of motivation for learning medical English (high, medium, and low motivation) as reflected by their answers to the questions I raised. I then sought permission from the students to join in the interviews and have their classroom performance video-taped (focusing on the students' oral practice) and their written texts copied. Table 3.9 provides the profile of these students (all names are pseudonyms) and their motivational levels as well as their views of ME learning as indicated by their written

¹⁸ The English placement test is held every September when first-year students enter the university. It is designed and graded by the Foreign Languages Department of the medical college.

¹⁹ College English Test (CET) is the largest-scale national English examination sat by university students of non-English major in China. There are two bands, namely band 4 and band 6.

answers to the open questions. The citations in the table are original texts adopted from the students' answers. The original texts are all in English and there are some grammatical mistakes. To maintain authenticity, these mistakes were not corrected.

Table 3.9: Profile of the Six Students Selected for In-depth Analysis

Student	Sex	Age	Motivation Level	Views of ME Learning
Fan	M	19	High	It's a matter of curiosity. Before I touched this new field, I can see only the outline of it. Now, I've opened the door and stepped in. I've known there're so many things I have to know; the more findings, the more excited; the more strange, the more curious
Xiao	F	18	High	Learning ME is a great challenge, but I like challenges. I think it's hard but I'm curious about it, and I like it.
Hai	M	19	Medium	The first time I saw ME textbook, I felt quite annoyed and even threw it away. At past I always asked myself the same question – will it be useful if I work in China in the future? But now I felt much better. I have brave to put up my hands and have interest in reading the books about it.
Ke	M	19	Medium	At first, I felt a little confused about the medical terms because there are so may new words and it is hard to remember. I have doubted about my ability to remember words. Now I felt much better. I have adopted myself to it, I am more familiar with the medical words.
Fu	M	20	Low	I'm not interested in both (general English and ME). But I have to learn. Now I still think ME class is boring, difficult ...Even I hate it sometimes. I don't know how to describe. The knowledge, the terms, which I don't know or understand have become more and more so that I'm afraid I'll fail in the exam. Gosh, just tell me what to do...
Yuan	F	19	Low	When I first approach the Medical English, I didn't have clear feelings. I didn't know I hated it or liked it. I just ignored it. I didn't spend many time to learn it. I think that was my ignore made me not have the clear feelings. Now, I think I don't have the clear opinion about it.

(B) The Genre-based Instruction

The genre-based lesson plans and teaching materials played critical roles in the intervention case study. They were designed collaboratively by Fang and I through discussions. Before the delineation of the genre-based lessons plans and teaching materials, several considerations are presented below, namely how the intervention instruction fitted into the ME course, how contextual factors also affected the design, what principles the design followed to embody genre-based pedagogy, and how team-teaching was done.

◆ Fitting into the ME Course

The ME course is scheduled in two semesters, lasting for 30 weeks and having 96 hours' instruction. There are 19 units in the course, including seventeen medical topics on different human body systems and medical specialty and two general topics, one on the word-building of medical terms, the other on writing and translating skills. At the time of the case study, the course was opened for the five first-year classes. The workload was divided among the ME team, which usually had 6 to 8 members, depending on how many of them could spare the time from their own professional commitments. As team leader, Fang divided the pedagogical content into several modules and assigned these to different teachers, which means each teacher would only teach 2 to 3 units, repeating their teaching five times for the five classes. Fang taught 3 units: the circulatory system, the nervous system, and translating and writing

skills. The instructional time was 20 hours²⁰, accounting for about 21% of the total course length, which was considered adequate length for the interventional instruction to have some kind of influence on the students.

Although the case study was intended as an intervention, it was carried out with minimal restructuring or re-organization of the teaching environment, therefore, the genre-based instruction was generally designed on the base of Fang's own timetable and teaching plan. As will be introduced later, the original teaching objectives for each unit was revised to include more linguistic elements, instead of simply replacing them with totally new ones. In this way, the normal teaching schedule was not affected.

◆ Material Design Informed by Needs Analysis

Findings from the first stage of the research, i.e. needs analysis of medical students' English learning show that five English language skills stand out as very important (value > 4 points, 5 points being the most important) in medical study and medical career development. In each skill, some specific sub-skills are valued as more important than others. Table 3.10 displays the skills and sub-skills and their mean values calculated from all subjects of English learning questionnaire survey, including the students and the teachers²¹. In other words, these skills and sub-skills are recognized by both the students and the teachers as very important and, therefore,

²⁰ The unit for translating and writing was given five more hours for instruction. Normally each unit had only five hour's instruction time.

²¹ There are discrepancies between the students and the teachers in their perceptions of the importance of language skills, which will be discussed in Chapter 4.

should be considered as the focus of the ME course. But it is found that what the students want to learn (subjective needs) may not be what they really need to learn (objective needs). For example, having workplace conversations in English only happens in very few cases in the hospitals in the city where the medical college is located²². It is therefore not an important skill for the medical student to learn. But a lot of students showed great interest in the skill. As will be discussed below, the students' interests, together with other contextual factors, such as the students' learning levels and administration of the course, are considered in the genre-based lesson plans to make the instruction both needs-based and context-sensitive²³.

Table 3.10: Language Skills identified as Very Important in Needs Analysis

Skill	Value	Ranking	Sub-skills	Value	Ranking
Reading	4.68	1	Internet resources	4.32	1
			Medical journal articles	4.06	2
Listening	4.27	2	Following lectures/seminars	4.27	1
			Following class	4.06	2
Speaking	4.18	4	Participating in academic discussion	4.21	1
			Having daily conversations	4.13	2
			Having workplace conversations	4.08	3
			Presenting oral reports	4.07	4
Vocabulary	4.17	5	Understanding medical terminology in textbooks	4.36	1
			Understanding medical terminology in literature reading	4.31	2
			Using medical terminology in academic discussions	4.13	3
			Using medical terminology in writing	4.02	4
Writing	4.04	3	Research articles	4.23	1

²² Section 4.7.1 of the thesis discusses English use in the local doctors' workplace activities.

²³ This consideration of different aspects involved in needs analysis is what Dudley-Evans and St. John (1998) suggest a comprehensive concept of needs analysis. For detailed introduction see Section 2.3.1.

◆ Contextual Considerations

Factors other than learning objectives have to be considered as well so that the instruction based on the lesson plans and teaching materials can be effective in the specific teaching context. This is what is considered an adjunct to needs analysis, namely means analysis, which concerns the examination of the teaching environment in which the language course is to take place (Holliday & Cooke, 1983). Based on the results of needs analysis in the first stage of the research, the contextual factors that affected the design of the genre-based lesson plans and teaching materials include administrative restrictions, the ME teacher's schedule and the students' learning levels and interests.

Here administrative restrictions refer to the difficulties brought about by the original setting of the course. Because there were not enough ME teachers and those who were qualified (see Section 3.2.2.1 for how the ME teachers are qualified by the college) had to teach other medical subjects at the same time, each ME teacher only teaches 2 to 3 units, repeating their teaching five times for the five classes, which means that the case study with Fang could only cover a part of the course, namely 21% of the course length, as mentioned above. Moreover, the topics for the units had been decided at the very beginning and could not be changed. These restrictions in both teaching content and teaching time limited the length and pedagogical content of the intervention case study to a great extent.

Fang, the ME teacher who was willing to cooperate in the case study, had already

been following her own teaching plan. I did realize that the intervention study had to build on mutual understanding and respect to be successful and effective. Therefore, the final lesson plans are revised from Fang's original teaching plans after discussions with her. In each unit, the basic medical content was retained but some parts were simplified or shortened to allow time for new teaching content required by the genre-based pedagogy. All genre-based materials were selected according to the specific medical topics the students were learning in the same unit.

The students' learning levels also affected the ways in which genre-based instruction was designed. Some language sub-skills rank first in terms of their importance for the medical students, as shown in Table 3.11 above. For example, reading medical journal articles is the most important need in reading. But the students in the case study were just first-year students and had not yet learnt any medical subjects, which meant that reading medical journal articles was extremely difficult for them and it would be unrealistic to train them to read the academic articles in class. Additionally it was apparent from the interviews and focus discussions with the students in needs analysis that most students found it difficult to understand their medical textbooks. Therefore, the skills of reading medical textbooks outranked the skills of reading academic articles in lesson planning. Another example is writing skills. Although being able to write research articles is very important for the students' career development, the students' learning level made it impossible to train them to write any research article. So, in the writing module, only the writing of an abstract was taught to the students while the whole structure of a research article was only

introduced briefly.

The students' interests were always considered. Although having conversations in workplace was regarded as not very important for the medical students because a majority of them would practice medicine in the Mainland China and have very few opportunities to speak English in their workplace, former classroom observations did show that the students are always interested in the workplace conversations. In addition, practice on workplace conversations such as doctor-patient conversations and doctor-doctor conversations naturally linked what the students had learnt in the unit with what they could use, hence the high motivation visible in the classroom. The inclusion of case history writing was also based on this consideration.

◆ Principles of Genre-based Instruction

As discussed in Chapter two, the present research tries to gain a foothold among three perspectives of genre theories (i.e. Systemic Functional Linguistics (SFL), New Rhetoric (NR) and English for Specific Purposes (ESP) and benefit from the insight brought about by an eclectic combination of genre theories. Aiming at non-native tertiary-level ESP learners in the EFL (English as a foreign language) context, it draws on ESP's concern with academic and professional genres and makes use of the genre teaching model offered by the SFL school in the intervention case study. The NR's macroscopical focus on social purposes and contexts was embodied in the ethnographic needs analysis in target learning and working situations and realized in the instruction of the social purposes and contexts of each genre. The SFL's

microscopical focus on text structures displayed in both register level and genre level is applied in the genre-based instruction. The following principles stemming from this eclecticism guide the design of the genre-based lesson plans and teaching materials in the intervention case study:

- The importance attached to the teaching of certain language skills or sub-skills as displayed by needs analysis are realized in the introduction of concrete academic or professional contexts and specific genres that are used in these contexts.
- The instruction emphasizes the social functions or actions of genres and the contexts in which these genres are used.
- Explicit genre instruction is necessary in the EFL contexts as the students are novices in the medical profession and they urgently need explicit instruction of the “why” and “how” of the academic texts.
- The instructional framework follows the basic model provided by the SFL school which embraces three main stages: deconstruction (or modeling), joint construction, and independent construction.
- Texts are connected to particular contexts at two levels: register and genre. When these levels of language use are deconstructed, the students can have a clear idea of what they are going to do with language use in different contexts.

◆ **The Team-teaching**

The team-teaching in the case study resulted from extensive contacts and mutual understanding, and was characterised by two-way interaction before and after the class and a developing model in the class.

Fang was an apprentice insofar as GBP was concerned, and the researcher was an

apprentice insofar as the ME course was concerned. The collaboration between Fang and the researcher was built up upon mutual understanding of each other's communities of practice. And the team-teaching was the result of extensive contacts before the case study was really conducted. Fang was a key informant in the first stage of the research, namely the needs analysis, when she provided a lot of useful information about the ME course. The researcher observed her class twice and had several interviews or discussions with her, thus getting to know her education background and working experience. Fang also observed one of the researcher's general English classes on invitation. To prepare Fang for the genre-based lesson planning and teaching, the researcher selected materials on GBP and discussed them with Fang (see Section 8.1.4 for a more in-depth introduction to how the concept of genre and GBP were explained and discussed before the team-teaching happened).

The team-teaching in the case study was unusual also in that it comprised not only the behaviours of teaching together inside the classroom, but also a series of two-way interactions, mutual engagement and collaboration before and after the ME class. There were focus discussions between Fang and the researcher before, during, and after the ME class (see Table 3.13 for detailed introduction of the focuses of discussions) with the help of various research instruments such as focus discussions prompts, classroom observation protocol, and post-unit reflective log (for details see the introduction in the next subsection on research methods and instruments). Telephone calls, email exchanges, and informal talks in the school also contributed to the interaction.

The lesson planning was done mutually, coming out with teaching Power Point slides that covered both the medical knowledge and language use for each unit. The classroom instruction was implemented in cooperation as well. In the first two units of instruction (10 hours in total), the ME teacher was responsible for teaching the medical sections, and I for the linguistic sections²⁴. In the last unit (10 hours in total), the ME teacher taught most of the time, while I occasionally joined in discussions. The development of this team-teaching model will be discussed in Chapter 8.

◆ The Genre-based Lesson Plans

The lesson plans involved three units of learning: the circulatory system, the nervous system, and the writing and translation unit. Before the finalization of each lesson plan, Fang and I had several discussions, some face-to-face and some through telephone. In the first two units, I chose new materials and designed new activities based on her original lesson plans, which were sent to me in the form of Power Points early on. Then we discussed how the new activities could be integrated into the whole lesson plan, including the time allotment, the connection between different sections, and students' possible reactions. In the last unit, Fang played a much more important role in lesson planning because it is significant to see how Fang individually dealt with genre-based instruction as a way to find out what she had learnt about GBP. She revised her own lesson plan. We then went through it together

²⁴ It is obvious that language and content in the ESP courses are inter-related and cannot be demarcated so clearly. But in the lesson plans, there are sections that focus more on medical knowledge, such as those about the structure and functions of the circulatory system or the nervous system. And there are sections that emphasize the linguistic aspects, such as the introduction of the structure of sentence definition or the choices of word to express classification. For detailed division of work please see the introduction for the teaching materials in the genre-based lesson plans in Appendix 6.

with the researcher to finalize the details.

The focus of consideration for each unit are the genres the students need to master, the contexts in which language is used, and the linguistic skills that they need. For each genre, the register parameters (field, tenor, and mode) and genre structures were specified. Table 3.11 introduces the teaching schedule of the case study and Table 3.12 presents an outline of these lesson plans. Appendix 6 presents these lesson plans and teaching materials in great detail. In this appendix, the lesson plans are composed of two sections: teaching objectives and teaching activities. The teaching objectives include the original ones set by Fang herself and the revised one, as the result of our discussions, indicating how the current lesson plans came into being after negotiations. There are two sections in each set of teaching materials: introduction and student handout. In the introduction sections, key teaching points are listed to highlight the teaching/learning cycle of genre-based pedagogy such as deconstruction, joint construction, and independent construction. The student handouts provide reading materials, if any, and tasks that students have to accomplish.

Table 3.11: The Teaching Schedule of the Case Study

Unit	Date	Length	Total Time
Circulatory System	March 31, 2009	150 minutes	250 minutes
	April 2, 2009	100 minutes	
Nervous System	April 9, 2009	100 minutes	250 minutes
	April 14, 2009	150 minutes	
Translation	April 16, 2009	100 minutes	180 minutes
	April 28, 2009	80 minutes	
Writing	April 21, 2009	150 minutes	320 minutes
	April 23, 2009	100 minutes	
	April 28, 2009	70 minutes	

Table 3.12: The Design of Genre-based Instruction

Unit	Genre	Contexts of Language Use	Linguistic Skill
Circulatory system	*Definition ---sub-genre of description	Reading medical textbooks and other materials in medical learning contexts	Reading
	*Flash animation---Internet media that offer scientific videos	Listening to Internet resources in medical learning contexts	Listening
	* Doctor-patient oral interaction	Clinical consultation in clinical contexts	Speaking
Nervous system	* Classification---sub-genre of description	Reading medical textbooks and other materials in medical learning contexts	Reading
	* Flash animation---Internet media that offer scientific videos;	Listening to Internet resources in medical learning contexts	Listening
	* Medical classroom lecture--- Internet media that offer scientific videos		
	* Doctor-doctor oral interaction	Clinical discussion in clinical contexts	Speaking
Translation & Writing	* Abstract translation	Publishing in Chinese medical journals	Translating ²⁵
	* Case history	Writing medical records in clinical contexts	Writing
	* Abstract	Publishing in both Chinese and English medical journals	Writing
	* Cover letter and bio	Submission for publishing	Writing

²⁵ Although translating skill is not as important as the other skills listed in Table 3.10, the ME teacher had planned for it. The researcher decided to keep this part as a show of respect for the ME teacher's opinion.

(3) Research Methods and Instruments

The research methods adopted in the case study are questionnaire survey (including questionnaire for English learning and questionnaire for genre-based instruction), focus discussions, and interviews. These methods are introduced and research instruments are described below.

(A) Questionnaire Survey

◆ English Learning Questionnaire

In needs analysis, the English learning questionnaire was used to elicit the students' ideas about their purposes of learning English as medical students (why learn), their perceptions of the importance of different English language skills in future medical study and career development (what to learn), and their opinions about the current ME course (how to learn) (see 3.2.2.2 for detailed introduction and Appendix 3A for a whole sample). The class chosen for the case study finished the questionnaire in December, 2008. Because it was only 4 months before the case study, data from this survey was also treated as the students' pre-intervention perceptions. By the end of the case study, i.e. by April, 2009, the same questionnaire was adopted as the instrument in the post-intervention survey. The data from these two surveys can be compared to identify the changes, if any, of the students' perception of English learning due to the intervention instruction.

◆ Genre-based Instruction Questionnaire

The genre-based instruction questionnaire aimed at gathering data on students' ideas of learning from the genre-based instruction. It was administered in the last lesson, namely April 28, 2009 (See Table 3.11 for the teaching schedule). It had been piloted in the pilot intervention case study. Because some items of the survey asked about the students' opinions about classroom activities and teaching materials, and the teaching content for the pilot study and the case study were different, these items (all the Likert-scales statements) were changed. Again, for the students to understand the questionnaire better in their mother tongue, the questionnaire was also translated into Chinese when being used. It contained two sections: (see Appendix 4B for a sample of this questionnaire)

- Seventeen 5-point Likert-scale statements (ranging from strongly agree (5 points) to strongly disagree (1 point) asking about the students' views of the usefulness of the:
 - ◇ lessons on medical knowledge and terminologies (Items 1-4)
 - ◇ lessons in helping them understand the role and use of English in medical contexts (Items 5-6)
 - ◇ various learning activities (Items 7-15)
 - ◇ genre-based instruction (Items 16-17)
- Four open-ended questions inquiring about the students':
 - ◇ perceptions of learning (Item 18)
 - ◇ likes and dislikes of the lessons (Items 19-20)
 - ◇ comments they want to give on the lesson. (Item 21)

(B) Focus Discussions

The focus discussions with the ME teacher were carried out in three stages: pre-intervention, intervention, and post-intervention. The pre-intervention discussions took place about two weeks before the intervention study began. The intervention discussions took place one or two days before or after the teaching of each unit. The post-intervention discussions took place about one week after the intervention study. Because the ME teacher had a very tight schedule for teaching, sometimes she found it difficult to spare time for face-to-face discussions during the study, so some discussions were done through telephone calls and email exchanges. There were altogether seven face-to-face discussions and eight telephone discussions, totaling about 717 minutes. All discussions were recorded with Fang's permission. Table 3.13 provides the discussion focus and specific questions for discussions in each stage.

Table 3.13: Focus Discussions with ME Teacher in the Case Study

Stage	Discussion focus	Questions for discussion
Pre-intervention Discussion	◇ Analyzing existing problems in ME teaching;	✓ How do you evaluate the current ME course in terms of its strengths and limitations?
	◇ Discussing genre-based pedagogy	✓ How do you think the ME course can be improved? ✓ What do you know about genre-based pedagogy (GBP) and how do you understand it? (If Fang gives a positive answer to the question, then) ✓ What are the possible ways to integrate GBP with the ME class?
Intervention Discussion*	◇ Planning lessons and designing materials;	✓ What is the original lesson plan and how can it be revised to integrate GBP?
	◇ Post-class reflection	✓ What materials are needed for the GBP instruction? ✓ What activities can be organized for the GBP instruction? ✓ What effects does the GBP instruction bring to the previous unit? ✓ How can the GBP instruction be improved in the next unit? ✓ Has your understanding of GBP changed as a result of the teaching experience? How?
Post-intervention Discussion	◇ Reflecting on the whole study;	✓ What learning has happened to the students after the GBP instruction?
	◇ Evaluating learning outcomes	✓ What learning has happened to you? ✓ How do you evaluate the study in terms of its design and effectiveness? ✓ What are your ideas of developing a genre-based ME curriculum in the current context?

(C) Classroom Observations

In the needs analysis I sat in the classroom as an outsider and classroom observations were thus done more easily. In the case study, I observed and took notes when Fang was teaching. When it was my turn to teach, I took observation notes as soon as the teaching was over. At the same time, all classes were video-taped for later review.

The classroom observation protocol for the case study had also been piloted (see Appendix 4C for a sample designed for the first unit). There are two sections:

- ❖ A table of several items describing the students' responses to the activities of the unit including different instructional sections and student activities. Because the teaching content and activities for each unit varied, specific items for each unit's observation were different.
- ❖ An open question asking the observer to think about anything pertaining to the instruction that deserves further discussion with the ME teacher.

(D) Post-Unit Interviews

Originally, the interviews with the six students for in-depth analysis were planned to be face-to-face. But it was clear that the students found it difficult to spare time during the week days. As medical students, they had a very tight schedule. The interviews were finally conducted through telephone one or two days after each unit of learning. There were three rounds of post-unit interviews, totaling about 346 minutes.

Four groups of questions were raised in the interviews concerning the students':

- ❖ Opinions about the classroom activities of the unit
- ❖ Opinions about what they had learned in the unit
- ❖ Understanding of the concept of genre
- ❖ Understanding of English learning needs (this group of questions were only asked in the last interview)

For a sample of the post-unit interview prompts, please see Appendix 4D.

(E) Post-unit Reflective Log

To ensure that the focus discussions with the ME teacher were effective, post-unit

reflective logs were also used after each unit of instruction. Fang was requested to fill in the reflective log right after the instruction and brought it to the discussions.

The post-unit reflective log, which had also been piloted, contained a similar table to the classroom observation protocol. It made sure that Fang would reflect on the same items as I had observed so that, in the post-unit focus discussion, we could exchange ideas based on the reflective log and the observation protocol. There were also five open questions inquiring about Fang's evaluation of the classroom activities, the students' learning and her own learning from the genre-based instruction (see Appendix 4E for a sample of the reflective log for the first unit).

(F) Student Products

The student products refer to both oral and written ones. Because all classes were video-taped, I watched the videos for preliminary analysis and selected the segments showing students' performance in genre-based exercises (e.g. defining medical terms and having patient-doctor conversation) for later analysis. In particular, the oral practices of the six students were gathered as their oral products. In this way, some data were gathered to answer the second sub-question of the third research question, namely how the concepts of genre and GBP were developed and transformed in the students' process of learning. Inside and outside the class, the student finished some writing tasks and these written texts were copied and collected as their written products. Altogether, five kinds of written products were collected:

- ◇ An extended definition of CABG (Coronary Arteries Bypass Surgery)
- ◇ A short passage that introduces the functional categories of neutrons

- ◇ A case history
- ◇ A cover letter and a bio
- ◇ An abstract that is translated from Chinese into English

(G) Research Journals

I wrote research journals after each class and each discussion or interview, which helped to keep track of any new ideas about investigation, data collection or data analysis.

To sum up, Table 3.14 shows how different research instruments introduced above were utilized to collect data to answer the research questions posed for the case study.

Table 3.14: Research Questions and Instruments of Case Study

Research Questions	Research Instruments	Subjects
How can some of the contradictions be resolved as the outcome of Genre-based Pedagogy mediated expansive learning?		
a. How is the students' perception of English learning needs reconceptualized?	✓ Pre- & post-intervention English learning questionnaire	46 students in the case study class
	✓ Genre-based Instruction questionnaire	46 students in the case study class
	✓ Interviews	6 students
b. How is the concept of genre and genre-based pedagogy conceptualized and transformed in the process of learning?	✓ Pre- and post-unit focus discussions	ME teacher and researcher
	✓ Genre-based Instruction questionnaire	46 students in the case study class
	✓ Class observations	46 students, ME teacher, researcher
	✓ Student products	46 students
	✓ Post-unit Interviews	6 students
	✓ Post-unit Reflective logs	ME teacher
	✓ Research diaries	Researcher
c. How does boundary-crossing happen to facilitate the teacher's genre-based teaching?	✓ Pre- and post-unit focus discussions	ME teacher and researcher
	✓ Post-unit Reflective logs	ME teacher
	✓ Research diaries	Researcher

(4) Data Analysis

Quantitative data collected from the questionnaire survey were tabulated on computer sheets and input in SPSS was completed. Descriptive analysis was conducted through frequencies and percentages calculation. T-test was done to compare the data of the pre- and post-intervention English learning questionnaire to identify any changes in the students' perceptions of English learning needs.

All verbal data including focus discussions and interviews were verbatim transcribed. These data were triangulated with the data from the reflective logs and research diaries to provide answers for the case study.

Up till now all details of the research methodology have been introduced. Finally, to offer a comprehensive understanding of the design of the whole research, Table 3.15 presents the general schedule of the research methods in relations with the research questions.

Table 3.15: The General Schedule of Research Methods in Relations with Research Questions

Stages of study	Steps of study	Relations to research questions	Data collection techniques				
			Questionnaire Survey	Interview	Focus discussion	Classroom observation	Document analysis
1	1) Investigating	RQ 1	✓	✓	✓	✓	
	2) Critically analyzing	RQ 2			✓		✓
2	3) Formulating GBP	RQ 3 (a, b, c)			✓		
	4) Applying GBP				✓	✓	✓
	5) Evaluating learning		✓	✓	✓	✓	

3.3 Limitations of the Research Design and Remedial Strategies

The limitations of the research design are first discussed in general and then focus is

on the ethnographic and intervention study. Remedial strategies are introduced accordingly. Finally, strategies to enhance the reliability and validity of the research are summarized.

3.3.1 Limitations of the Overall Design

The present research is relatively long and complex, spanning a long time (i.e. 12 months) and involving various research methods. It was thus somewhat difficult for the researcher to handle. Several measures had been taken to make up for this limitation. First, prolonged field work allowed more time for reflections and revisions of research instruments. The two pilot studies helped to try out major research methods and data collection instruments. After the pilot studies, the researcher became more oriented to the research context and more skillful in using the instruments. Revisions of the research instruments and remedial actions were also taken to improve the overall design of the research.

Secondly, member checking was made use of in some occasions to improve the reliability of specific research instruments as listed below:

- When conducting a survey of the EMP research focus in China, the researcher got help from one of her colleagues who acted as co-rater to categorize the articles published in China Journal Net (see Section 2.2.2). Wherever there was disagreement, systematic negotiations took place until agreement was reached. In this way, the reliability of the survey was enhanced.
- The Chinese versions of the English learning questionnaire and the genre-based instruction questionnaire were also checked by the same

colleague to make sure that the Chinese versions displayed the same messages to the subjects as the English versions (see Section 3.2.3.1 and 3.2.4.2).

- During the intervention case study, one unit of teaching materials was reviewed by a foreign teacher specializing in microbiology in the medical college. He was very familiar with article publication in the international medical journals and used to teach medical English in Japan. The researcher had two discussions with him on the teaching materials and adopted some of his suggestions to revise them.

3.3.2 Limitations of Ethnography

Ethical problem: Researchers are always confronted with a fundamental dilemma in that an ideal balance is needed between the protection of subjects versus the freedom to conduct research and to publish researching findings (Punch, 1986). This conundrum particularly abounds in ethnographic studies because of their investigative nature and concerns with human subjects. To solve the ethical problem, the researcher, first of all, got “informed consent” from the participants--- ensuring that the research respects their rights to be informed that they are being researched and also the nature of the research (Punch, 1986). The researcher explained the research to the participants and promised to keep all data anonymous. Their participation in the study was optional. Secondly, she got permission from the participants to record their activities, e.g. copy their writings and record the interviews and group discussions. Finally, all transcriptions were sent back to the participants for clarification.

Subjectivity Problem: Ethnographic studies have always been criticized as being too subjective because it uses the researcher as the only essential instrument. Bias, assumption and observer effect may deviate from the reality and lead to partial truth. As Ericson points out, “the method [ethnography] is not that of objectivity, but of disciplined subjectivity (Ericson, 1984, p61)”. To achieve “disciplined subjectivity”, the researcher kept research journals, recording the ideas that came out during participant observations and reflecting on the research all the time. To promote the validity of the research, the ME teacher who cooperated in the case study was also involved in robust analysis of data and negotiation of the research outcome. According to Anderson (1989), this is an important strategy to enhance the validity of critical ethnography.

Insider/outsider Dilemma The insider/outsider dilemma is considered to be another major limitation of this research methodology (Cumming, 1994). In the present research, it is much easier for the researcher to conduct participant observations because she had been teaching in the investigated context for a long time and had preexisting networks of contacts. Claiming herself as a local teacher doing research helped her get entry into the field naturally and reduced the sense of intrusion. And following Johnson (1992) recommendation, the researcher worked as “a part-time teacher” as well. But at the same time, the pitfalls of being a native or “insider” (Colic-Peisker, 2004) were considered all the time. One pitfall is becoming assimilated and failing to interpret and judge as an outside researcher. Another pitfall is the partial and limited truths that are given by my participants due to my identity

as a local teacher. To avoid these pitfalls, multiple methods in data collection were used to help to triangulate the research results, thus making the results as rigorous as possible.

3.3.3 Limitations of the Intervention Case Study

Without an experimental design to inquire about how the genre-based instruction *alone* has impacted on the students' learning, in particular, without a control group, the intervention case study may not be able to exclude other factors that may be influencing the students at the same time, such as peer influences or the opportunities to learn English in their spare time. But the credibility of the research results is enhanced by objective data, namely the quantitative data obtained through questionnaire survey, and by multiple sources of evidence gathered through different instruments, namely English learning questionnaire, genre-based instruction questionnaire, classroom observation protocols, post-unit interview prompts and focus discussions prompts. The triangulation of different sources of data has indeed enhanced the credibility of the research results by "comparing and cross-checking the consistency of information derived at different times and by different means (Patton, 1990, p.467)".

To sum up, the following measures have been taken to remedy the limitations of the research design and to enhance the validity and reliability of the present research:

- ◆ **Prolonged observation and engagement** --- the research lasted one year, during which the researcher was immersed in the research context, established rapport with both the students and the teachers under investigation and participated in

prolonged participant observations of the classroom as well as the context.

- ◆ **Triangulation** --- triangulation involves multiple sources of data and various data-collection methods. Three kinds of triangulation were used in the present research, namely the triangulation of sources, triangulation of methods and triangulation in time.
 - ◇ *Triangulation of sources* ---the present research used students at different learning levels, teachers in different teaching posts, medical doctors of different specialties as major sources of evidence.
 - ◇ *Triangulation of methods* --- in the present research, the medical students' English learning needs were investigated by means of English learning questionnaire (mainly quantitative data), interviews (qualitative data), and focus group discussions (qualitative data). The students' learning from the genre-based instruction was investigated by means of genre-based questionnaire (quantitative and qualitative data) and interviews (qualitative data).
 - ◇ *Triangulation in time* --- Freeman (1989) uses triangulation in time to refer to collecting the same data over a given period of time. In the present research, triangulation in time was used in investigating the students' and ME teacher's understanding of genre and GBP, which is done three times during the case study and helped to display a process of development in their understanding.
- ◆ **Member Checking** --- the present research used member checking to co-rate the categorization of data, examine questionnaire versions, and review lesson plans and teaching materials. It also involved the ME teacher who cooperated in the case study in robust analysis of data and negotiation of the research outcome as a way to promote the validity of the research.

Conclusion

In this chapter, I have shown how the desires stemming from personal experiences and literature study are transformed into workable research plans by drawing on methodological perspectives from ethnography, case study, and developmental and interventionist study. The research process is presented as an expansive developmental cycle in which the researcher has explored the current situations, the

possible explanations, and, finally, the available transformations within the investigated subjects. It was a journey worthy of exploration as the following chapters will show by presenting the results of the exploration.

Chapter 4: Investigating the English Learning Needs

I don't like English, and I don't know how to learn it, though I know it is very important for me. ---- S02104's answer in the English learning questionnaire

Introduction

This chapter introduces the investigation results of the medical students' English learning needs in the investigated context with the attempt to answer the first research question:

- ◆ **What are the medical students' English learning needs as perceived by different parties (i.e. students, teachers, administrators and medical doctors) concerned with the Medical English course?**

To answer this questions, triangulation of various research methods, such as documentary analysis, questionnaire survey, classroom observation, interview, and focus discussion, from different key stakeholders, including students, teachers, administrators, and medical doctors, were used. The following subsections introduce the research findings from different data collection methods, namely the findings from the documentary analysis, from the questionnaire survey, from the classroom observations, from the interviews with the teachers, from the focus group discussions with the students, and from the retrospective interviews with the medical doctors.

4.1 Findings of the Documentary Analysis

Findings from the documentary analysis can be categorized in three segments related to the:

- language policies of the medical college,
- current Medical English course and
- English proficiency required of the students.

4.1.1 Findings Concerning the College Language Policies

The college advocates bilingual education in all medical subject courses, expressing the belief that medical students proficient in English will be more competitive in the medical world where English is the international language. The teachers prepare teaching slides in English and lecture in Chinese. In some departments, such as Pathology Department, teachers with better English abilities may lecture in English. To encourage using English as the medium of instruction, the college stipulates that the workload of lectures delivered in English is calculated as three times higher, that is, one hour's lecture in Chinese equals three hours' lecture in English. But the teachers who lecture in English must pass the English instruction qualification evaluation set up by the college (Footnote 8 on page 136 has explained how the evaluation is made).

In 2007, the college began to select some second-year students to study in the English Immersion (EIC) Class according to their performance in an institutional English examination. These students learn all medical subjects in English, including the textbooks and classroom instruction, and are expected to have high English proficiency upon graduation. While those not selected for the EIC class will only take the general English course for the first year and learn the medical subjects mainly in Chinese, except for reading English teaching slices, as required by the

college policy of bilingual education mentioned above. Teachers of the EIC class should also have passed the college English instruction qualification evaluation. The EIC students are expected to pass the United States Medical Licensing Examinations (USMLE) upon graduation. About 30 students were selected for EIC from Grade 2007, that is, the students who entered school in 2007. In 2008, another group of 28 students were selected from Grade 2008. To motivate the students, the college provides full scholarships for the EIC students, which cover the tuition fees for the seven-year study. The EIC class is highly competitive. Those who fail in the course exams are eliminated.

4.1.2 Findings Concerning the Current Medical English Course

According to the syllabus, Medical English course serves as a bridging course between general English course and medical subject learning in which the use of English as medium of instruction for students in the 7-year schooling is expected. The objectives are for the students to know the word-building and linguistic features of medical English terms, to master some basic medical English terminologies and standard expressions in medicine, and to develop the comprehensive abilities of English use in medical learning with the focus on listening, speaking, reading and writing. At the end of the course, the students are expected to be able to read medical journals articles published in English, write case histories in English, and perform routine medical activities, such as discussing case reports, in English.

The appointed textbook is *New Medical English* published by Chinese Science and

Technology Press in 2005, which is composed of 18 chapters. Except the first chapter that introduces the basic elements and patterns of medical words, all chapters introduce basic terms, structures and functions of various systems in human body, such as the digestive system, the respiratory system, etc. There are Chinese versions in each chapter. No exercises are provided. All the texts, either in English or Chinese, contain no figures or tables.

The ME course is scheduled to cover two semesters, lasting for 30 weeks and having 96 hours of instruction. All first-year students are required to take the course. But in March, 2008, when the course was first set up, even second-year students took the course.

4.1.3 Findings Concerning the Student's Required English Proficiency Levels

The Medical College requires all the seven-year medical students to pass College English Test Band 4 (CET 4) and Band 6 (CET 6) before graduation. Students usually take CET 4 in the first year and CET 6 in the second year. The one-year general English course and medical English course are compulsory for all first-year students. Students who want to apply for short-term study in sister universities abroad (e.g. Oxford University in Britain, Ehime University in Japan, and University of Manitoba in Canada) should have passed CET 6. And only those scoring 7.5 in IELTS can be recommended by the college to apply for master study in Oxford University. In the interviews co-hosted by the Medical College and the foreign universities, 40% of the credit goes to oral English abilities. According to a document

provided by the college Student Affairs Office, about 30 students are sent to study or attend academic activities abroad every year, accounting for about 2% of all the students in the college.

In job-hunting upon graduation, only students who have passed CET 6 have the opportunities to be interviewed for jobs in bigger hospitals (usually at municipal level). Those who want to apply for jobs in the four affiliated hospitals of the Medical College should have published at least one article in SCI (Science Citation Index) journals with impact factor higher than 2. Students who pursue doctoral study in the college also have to publish a SCI article with impact factor higher than 2 to be awarded the doctoral degree. Because few Chinese medical journals are included in SCI, these stipulations mean that the students have to attain a high level of English proficiency, especially in academic writing, to obtain jobs with brilliant prospects.

4.2 Findings of the Questionnaire Survey

The English learning questionnaire contained three main sections (for a detailed introduction see 3.2.4; for a sample see Appendix 3A) that attempted to explore the medical students' English learning needs related to the three categories of: why they need to learn English (*why to learn*), what specific English language skills are important for them to learn for medical study and career development (*what to learn*), and how they learn it in the medical English course (*how to learn*). The findings of the questionnaire survey are introduced separately in the following subsections.

4.2.1 Why to Learn ---- Purposes and Reasons

Eighteen items (from Item 6 to Item 23) constituted the first main section of the questionnaire, inquiring about the medical students' purposes and reasons of learning English. As introduced in 3.2.4, these items are designed according to a theoretical framework of motivation in foreign language learning (Dornyei, 1990, 1994 & 2001), which is divided into two motivation subsystems: *Instrumental motivational subsystem* (the *intrinsic* or *extrinsic* motives organized by the individual's future career striving) and *Integrative Motivational subsystem* (the attitudes, orientations, and motives centered around the individual's L2-related affective predispositions, which consists of four dimensions: *interest in foreign languages, cultures, and people, desire to broaden one's view and avoid provincialism, desire to integrate into a new community, and desire for new stimuli and challenges*). Table 3.8 has presented the layout of these items in this section. Table 4.1 reports the means and standard deviations of the six dimensions answered by the students and the teachers.

Table 4.1: Students' and Teachers' Perceived Purposes of English Learning

Motivational Subsystem	Motivational Dimension	Students		Teachers	
		M	SD	M	SD
Instrumental	Intrinsic motives (D1)	3.5835	0.3377	3.7477	0.0949
	Extrinsic motives (D2)	3.5195	0.4594	3.9369	0.4137
Integrative	Interest in foreign languages, cultures, and people (D3)	3.0382	0.2915	2.9945	0.3725
	Desire to broaden one's view and avoid provincialism (D4)	3.5697	0.2300	3.6036	0.2813
	Desire to integrate into a new community (D5)	2.1890	0.0985	2.1261	0.1560
	Desire for new stimuli and challenges (D6)	2.9034	0.3350	2.6757	0.2145

* The questionnaire statements that reflect the six dimensions are:

Items 6, 12, 18 for D1; Items 7, 13, 19 for D2;
 Items 8, 14, 20 for D3; Items 9, 15, 21 for D4;
 Items 10, 16, 22 for D5; Items 11, 17, 23 for D6

Several statistical steps were followed to analyze these data. First of all, one-way ANOVA was conducted inside the student group. The possible differences between the six dimensions of motivation as perceived by the students were checked to see if the students' understanding of English learning purposes differs in different motivational dimensions. The students were then divided into three learning levels (elementary, intermediate, and high) and one-way ANOVA was conducted to examine the possible variations between these learning levels. Secondly, within the teacher group, one-way ANOVA was also computed to check if the teachers have different perceptions in the six dimensions and if the teachers in different teaching team or administrative posts varied in their understanding of the students' purposes of learning English. Finally, t-test was done to test if the means of the student group and the teacher group in the six motivational dimensions are statistically different. Welch's t-test was used to remedy the unequal group sizes.

4.2.1.1 Comparison within the Student Group

One-way ANOVA was computed to check if the mean differences of the six motivational dimensions are significant in the student group. In Table 4.2, the combined significance value of 0.000 indicates that the students' perceptions of English learning purposes are different in these motivational dimensions. The mean difference between dimensions 1 and 4 (ranking first and second) is not statistically significant ($P=1.000>0.05$), so is the mean difference between dimensions 4 and 2 (ranking second and third, $P=0.904>0.05$) and the mean difference between dimensions 3 and 6 (ranking fourth and fifth, $P=0.121>0.05$), while the mean differences between dimensions 2 and 3 and between dimensions 6 and 5 are both significant ($P=0.000<0.05$). D1, 4, and 2 (the intrinsic and the extrinsic motives for future career striving and the desire to broaden their views) have means significantly higher than the other dimensions, indicating that these are the most important reasons for English learning for the medical students. Dimension 3, namely the interests in foreign languages, cultures, and people, also has higher mean ($M>3$), which means that they are also important aspects of English learning among these medical students, though not as important as Dimensions 1, 4, and 2. With means less than 3, dimensions 6 and 5, namely the desire for new stimuli and challenges and the desire to integrate into a new community, are clearly less important reasons.

Table 4.2: The ANOVA Results of Six Dimensions in the Student Group

Motivational Dimension	N	Ranking	Mean	Std. Deviation	Sig.	
					Between	Combined
D1	652	1	3.5806	.84575	1.000	.000
D4	652	2	3.5688	.96144	.904	
D2	652	3	3.5181	.78813	.000*	
D3	652	4	3.0387	.95667	.0121	
D6	652	5	2.9024	1.00162	.000*	
D5	652	6	2.1897	.94801		

* D1=intrinsic motives of future career striving, D2=extrinsic motives of future career striving, D3= interest in foreign languages, cultures, and people, D4= desire to broaden one's view and avoid provincialism, D5= desire to integrate into a new community, D6= desire for new stimuli and challenges

* Significant level = 0 .05

The students (N=652) were divided into three learning levels. The first- and second-year students were studying basic medical subjects and belonged to the elementary level (indicated as level 1 in the tables). The third- and four-year students began to study clinical subjects and were placed in the intermediate level (indicated as level 2 in the tables). The fifth-, sixth-, and seventh-year students had begun internship in the hospitals and were at the postgraduate learning stage, hence belonging to the high level (indicated as level 3 in the tables). The means of each dimension answered by the students in each learning level were calculated and subjected to one-way ANOVA, the results of which are summarized in Table 4.3 . It can be seen from the table that in the first, second, fourth, fifth, and sixth dimensions, the mean differences between different learning levels are significantly different ($P \leq$

0.05), indicating that the students' learning levels significantly influence their perception of why they need to learn English. Further analysis of the differences is shown in Tables 4.4, 4.5, 4.6, 4.7, and 4.8. Because the group sizes are unequal, Gabriel's method was adopted for the Post Hoc multiple comparisons and the harmonic mean of the group sizes was used.

Table 4.3: Descriptives and ANOVA Results of Each Dimension in Different Learning Levels

Learning Level	N	D1			D2			D3		
		Mean	SD	Sig.	Mean	SD	Sig.	Mean	SD	Sig.
1	289	3.4319	.81067		3.5666	.83692		3.1130	.91627	
2	221	3.5254	.84952	.005	3.6315	.76422	.000	2.9952	1.01927	.194
3	142	3.6958	.88313		3.2431	.65174		2.9552	.93189	

Learning Level	N	D4			D5			D6		
		Mean	SD	Sig.	Mean	SD	Sig.	Mean	SD	Sig.
1	289	3.7672	.86036		2.2876	.94961		3.0757	.94913	
2	221	3.4607	1.04865	.000	2.0848	.92041	.050	2.7542	1.03750	.000
3	142	3.3333	.94090		2.1535	.97340		2.7806	1.00079	

* Level 1 = elementary, Level 2 = intermediate, Level 3 = high

* Significance level = 0 .05

Table 4.4 indicates that in dimension 1, both the mean difference, between the elementary learning level and the intermediate learning level and that between the intermediate level and high level, are not significant, while the mean difference between the elementary learning level and the high learning level is significant. It seems that as the students advance in academic study, they tend to have more intrinsic motives to learn English.

Table 4.4: Comparison between the Learning Levels in Dimension 1

Learning level		Mean		
		Difference	Std. Error	Sig.
1	2	-.1704	.07507	.068
	3	-.2639(*)	.08609	.006
2	1	.1704	.07507	.068
	3	-.0935	.09035	.654
3	1	.2639(*)	.08609	.006
	2	.0935	.09035	.654

* Significance level = 0 .05

Table 4.5 shows that in dimension 2, all mean differences between the learning levels are significant. Students at the intermediate level appear to have the strongest extrinsic motives to learn English. And students at the high level appear to have the least extrinsic motives to learn English.

Table 4.5: Comparison between the Learning Levels in Dimension 2

Learning Level		Mean		
		Difference	Std. Error	Sig.
1	2	-.0649	.06928	.722
	3	.3235(*)	.07945	.000
2	1	.0649	.06928	.722
	3	.3884(*)	.08338	.000
3	1	-.3235(*)	.07945	.000
	2	-.3884(*)	.08338	.000

* Significance level = 0 .05

Table 4.6 shows that in dimension 4, both the mean difference between the elementary learning level and the intermediate learning level and that between the elementary level and high level are significant, while the mean difference between the intermediate level and the high level is not significant. It probably means that as the students become older, their desire to learn English so as to broaden their views is not as strong as they first enter the university.

Table 4.6: Comparison between the Learning Levels in Dimension 4

		Mean		
Learning Level		Difference	Std. Error	Sig.
1	2	.3064(*)	.08447	.001
	3	.4339(*)	.09688	.000
2	1	-.3064(*)	.08447	.001
	3	.1274	.10167	.502
3	1	-.4339(*)	.09688	.000
	2	-.1274	.10167	.502

* Significance level = 0 .05

It is shown in Table 4.7 that in dimension 5, only the mean difference between the elementary level and the intermediate level is significant. The students at the elementary level seem to have a relatively stronger desire to integrate into a new community than the students at the higher levels.

Table 4.7: Comparison between the Learning Levels in Dimension 5

		Mean		
Learning Level		Difference	Std. Error	Sig.
1	2	.2028(*)	.08445	.048
	3	.1341	.09685	.408
2	1	-.2028(*)	.08445	.048
	3	-.0687	.10164	.872
3	1	-.1341	.09685	.408
	2	.0687	.10164	.872

* Significance level = 0 .05

Table 4.8 indicates significant mean differences between the elementary level and intermediate level, between the elementary level and the high level. It seems that the students at the elementary level also have a stronger desire for new stimuli and challenges, learning English being one of them. Evidence of this also comes from the statements some first-year students made right after Section two in the questionnaire.

The original sentences are in Chinese and have been translated into English by the researcher.

“I learn English because speaking English fluently gives me a sense of achievement.” (01180's answer in the English learning questionnaire survey)

“I learn English because I want to prove that I can learn it well.” (01030's answer in the English learning questionnaire survey)

Table 4.8: Comparison between the Learning Levels in Dimension 6

		Mean		
Learning Level		Difference	Std. Error	Sig.
1	2	.3215(*)	.08856	.001
	3	.2951(*)	.10157	.010
2	1	-.3215(*)	.08856	.001
	3	-.0264	.10659	.992
3	1	-.2951(*)	.10157	.010
	2	.0264	.10659	.992

* Significance level = 0 .05

It can be concluded that the students' learning levels significantly influence their perception of why they need to learn English. In the first, second, fourth, fifth, and sixth dimensions, the mean differences between different learning levels are significantly different, revealing that as the students proceed in academic study, they tend to have stronger intrinsic motives and weaker extrinsic motives for making an effort towards English learning²⁶ for career development. They also do not feel the desire to broaden their views, to integrate into a new community and for new stimuli

²⁶ One of the most general and well-known distinctions in motivation theories is that of intrinsic versus extrinsic motivation (Vallerand, 1997), the former of which concerns behavior performed for its own sake in order to experience pleasure and satisfaction and the latter involves performing a behavior as a mean to an end, i.e. to receive some extrinsic reward or to avoid punishment. In Dornyei's motivation framework (1990, 1994 & 2001), this distinction is made between the motives internally inspired or externally required for the individual's future career striving. For example of these motives see the statements in the English learning questionnaire in Appendix 3A, in which statements 6, 12, 18 belong to intrinsic motives and statements 7, 13, 19 belong to extrinsic motives.

and challenges as strongly as when they first enter the university. One possible reason for these changes in the perceptions of English learning is that as the students are exposed to more chances of using English in the medical field, they come to realize the importance of learning English for their own interests in the future and their motives to learn the language turn from externally inspired to internally inspired.

4.2.1.2 Comparison inside the Teacher Group

One-way ANOVA was also computed to check if the mean differences of the six motivational dimensions are significant inside the teacher group. Table 4.9 presents the results of ANOVA analysis. The combined significance value indicates that the teachers do have different perceptions regarding why the students want to learn English in the six dimensions ($P=0.000<0.05$). The significance values between the mean differences of these dimensions reveal further information: the mean differences between dimension 2 and 1, between dimension 1 and 4, and between dimension 3 and 6 are not statistically different ($P=0.830$, $P=0.967$, $P=0.487$ respectively). It means that although dimension 2 has a higher mean than dimension 1 and dimension 1 has a mean higher than dimension 4, with means larger than 3, all of them, namely the extrinsic and intrinsic motives for career development and the desire to broaden one's views, are important reasons why the students want to learn English as perceived by the teachers. The other three dimensions, namely the interest in foreign languages, cultures and people, the desire for new stimuli and challenges,

and the desire to integrate into a new community, are, according to the teachers, not important reasons.

Table 4.9: The ANOVA Results of Six Dimensions in the Teacher Group

Motivational Dimension	N	Mean	Ranking	Std. Deviation	Sig.	
					Between	Combined
D2	37	3.9376	1	.66152	.830	.000
D1	37	3.7484	2	.68191	.967	
D4	37	3.6038	3	.87073	.012*	
D3	37	2.9822	4	.67054	.487	
D6	37	2.6746	5	.81127	.018*	
D5	37	2.1257	6	.59479		

* D1=intrinsic motives of future career striving, D2=extrinsic motives of future career striving, D3= interest in foreign languages, cultures, and people, D4= desire to broaden one's view and avoid provincialism, D5= desire to integrate into a new community, D6= desire for new stimuli and challenges

* Significance level = 0 .05

The teacher group were then divided into three subgroups according to their posts: the medical English (ME) group (the teachers who not only teach medical subjects, but also teach medical English), The medical subject (MS) group (the teachers who only teach medical subjects) and the administrative (Adm.) group (the teachers who teach medical subjects and hold administrative posts at the same time). One-way ANOVA was conducted again to check if there were variations within these subgroups. The results are shown in Table 4.10. In all dimensions, all combined significance values are bigger than 0.05, indicating that the differences of the means of the subgroups are not significant. It can be inferred that different posts might not

be an important factor to influence the teachers' perceptions of why the students want to learn English. But multiple comparisons in Post Hoc Tests provide further information. The mean differences in the subgroups in all dimensions except dimension 2 are not significant. In dimension 2, namely the extrinsic motives for career development, both the mean differences between the Admin group and the MS group and between the Admin group and ME group are significant ($P=0.047$ and $P=0.049$ respectively), indicating a gap in the perceptions of the Admin group and the other groups in that the other groups have a stronger feeling than the Admin Group believing that the students learn English because of the extrinsic motives connected to career development.

Table 4.10: Descriptives and ANOVA Results of Each Dimension in Different Teacher Subgroups

Subgroup	N	D1			D2			D3		
		Mean	SD	Sig.	Mean	SD	Sig.	Mean	SD	Sig.
ME	6	4.117	.54216		4.1667	.62433		3.2767	.57207	
Adm.	5	3.7340	.76041	.365	3.4680	.30020	.193	3.2000	.50443	.312
MS	26	3.6673	.69263		3.9750	.69255		2.8723	.70599	

Subgroup	N	D4			D5			D6		
		Mean	SD	Sig.	Mean	SD	Sig.	Mean	SD	Sig.
ME	6	3.7783	.58170		2.0000	.59592		3.1100	.62302	
Adm.	5	2.8000	.83666	.081	2.1340	.60719	.085	2.5320	.50509	.361
MS	26	3.7181	.87291		2.1531	.61224		2.6015	.87987	

* ME = medical English teachers, Adm. = administrators, MS = medical subject teachers

* D1=intrinsic motives of future career striving, D2=extrinsic motives of future career striving, D3= interest in foreign languages, cultures, and people, D4= desire to broaden one's view and avoid provincialism, D5= desire to integrate into a new community, D6= desire for new stimuli and challenges

*Significance level = 0 .05

4.2.1.3 Comparison between the Student Group and the Teacher Group

As can be seen from Table 4.11, there are both similarities and differences between the student group and the teacher group in terms of the ranking of importance of the six motivational dimensions. Both groups rank dimension 3, 6 and 5 as the less important ones (highlighted in bold-face in the table). The student group thinks dimension 1, namely the intrinsic motives for career development, is the most important one, while the teacher consider dimension 2, namely the extrinsic motives for career development, the most important one. Dimension 4, namely the desire to broaden one's views, come in second in the students' mind, while dimension 1, the intrinsic motives, come in second in the teachers' mind.

Table 4.11: A Comparison of the Ranking of Importance of the Motivational Dimensions between the Student Group and the Teacher Group

Ranking	Student Group		Teacher Group	
	Motivational Dimension	Mean	Motivational Dimension	Mean
1	D1	3.5806	D2	3.9376
2	D4	3.5688	D1	3.7484
3	D2	3.5181	D4	3.6038
4	D3	3.0387	D3	2.9822
5	D6	2.9024	D6	2.6746
6	D5	2.1897	D5	2.1257

As previously introduced, the mean differences between dimensions 1, 2 and 4, in both the student group and the teacher group, are not significant, indicating that in both groups, the three dimensions should all be regarded as the most important reasons why the students want to learn English. To reveal possible variations, t-test of each dimension between the student group and the teacher group was conducted.

Welch's t-test was used to remedy the unequal sample sizes. The significance test results are shown in Table 4.12. Only the mean difference of dimension 2 between the groups has a significant value smaller than 0.05 ($P=0.001$), indicating that the students and the teachers have rather mismatched perceptions in dimension 2. The teachers tend to believe that the students learn English more because of the extrinsic motives, while the students think they do it more out of intrinsic motives.

Table 4.12: The Results of the Welch T-Test of the Student Group and the Teacher Group

Motivational Dimension	Student Group	Teacher Group	Sig.
D1	3.5806	3.7484	.159
D2	3.5181	3.9376	.001*
D3	3.0387	2.9822	.630
D4	3.5688	3.6038	.814
D5	2.1897	2.1257	.544
D6	2.9024	2.6746	.109

* Significance level = 0 .05

To sum up, the intrinsic and extrinsic motives for career development, the desire to broaden their views and the interest in foreign languages, people and culture are important reasons for the students when asked to decide why they want to learn English. The students' learning levels significantly influence their perception of why they need to learn English. As the students reach a higher level of academic study, they tend to have more intrinsic motives and less extrinsic motives to learn English.

Inside the teacher group, the teachers also think the students want to learn English more because of the intrinsic and extrinsic motives for career development and the desire to broaden their views. Different posts might not be an important factor

influencing the teachers' perceptions of why the students want to learn English, but a gap in the perceptions between the Adm. (administrative) group and the other groups is found in that the teachers with administrative posts do not have as strong a feeling as the other teachers that the students learn English because of the extrinsic motives for career development.

The biggest difference between the student group and the teacher group in terms of why the students want to learn English is that the teachers tend to believe that the students learn English more because of the extrinsic motives, while the students think they do it more out of intrinsic motives. The students also think their interest in foreign languages, people and culture impels them to learn English, which is not fully recognized by the teachers.

4.2.2 What to learn ----the Importance of English Learning and Language Skills

The inquiries into "What to learn" for the medical students are answered by investigating how the students and teachers evaluate the importance of English learning in general and English language skills and sub-skills in particular, so that it can be known what language skills are important for medical students to learn. Again, analysis is done in three ways: comparison between the student group and the teacher group, comparison inside the student group, and comparison inside the teacher group.

4.2.2.1 Comparison between the Student Group and the Teacher Group

Items 24 and 25 ask about the importance of English to medical students' current medical studies and future careers. Welch's t-test reveals no statistical significance in the mean differences (see Table 4.13) between the student group and the teacher group, indicating that both groups believe that English is very important for medical studies and career development. That the teacher group has higher means implies that the teachers perceive English to be more important than the student do, confirming the finding of Chia, et al. (1999).

Table 4.13: Means and the Ranking of Perceived Importance of English Learning and Language Skills

Item	Student Group		Teacher Group		Sig.	
		Ranking		Ranking		
24	Mean	4.1842		4.2973	.418	
	SD	0.9176		0.8119		
25	Mean	4.2795		4.5135	.068	
	SD	0.8780		0.7311		
26a	Mean	4.6929	1	4.9189	1	.000*
	SD	0.6264		0.2767		
26b	Mean	4.0309	5	4.3784	3	.018*
	SD	0.9712		0.8284		
26c	Mean	4.1358	4	4.2162	4	.539
	SD	1.0417		0.7504		
26d	Mean	4.2651	2	4.4865	2	.072
	SD	0.9634		0.6921		
26e	Mean	3.8851	6	3.9730	6	.628
	SD	1.0460		1.0668		
26f	Mean	2.9643	7	3.5405	7	0.001*
	SD	1.1285		0.9602		
26g	Mean	4.1687	3	4.1622	5	.959
	SD	1.0043		0.7270		

* 26a = reading, 26b = writing, 26c = speaking, 26d = listening, 26e = translating, 26f = grammar, 26g = terminology

* Significance level = 0 .05

Item 26 contain questions regarding the importance of the seven language skills in medical studies, namely reading, writing, speaking, listening, translating, grammar, and terminology. Table 3.11 has introduced the language skills that are identified by both the students and the teachers as very important. In this subsection, the focus of discussion is the possible difference of perceived importance between the student group and the teacher group. Welch's t-test identifies three mean differences between the student group and the teacher group that are significant. These are: reading (26a, $P=0.000<0.05$), writing (26b, $P=0.018<0.05$), and grammar (26f, $P=0.001<0.05$). In all these items, the means of the teacher group are higher than that of the student group (as displayed in Table 4.13), indicating that the teachers attach more importance to reading, writing and grammar than the students do. The ranking of these language skills in terms of their perceived importance in medical studies is then compared between the student group and the teacher group. The biggest difference lies in the ranking of writing and terminology. While the students rank terminology in the third place and writing in the fifth, the teachers rank them reversely. It means that the students think terminology is much more important than writing skills, but the teachers think writing skills are much more important than terminology.

Item 27 tries to elicit more specific information about the language skills that are needed in medical studies. Thirty sub-skills related to the seven skills ---- reading, writing, speaking, listening, translating, grammar, and terminology ---- are listed for the students and teachers to grade the importance (see Appendix 3A). The means for these sub-skills in both groups are calculated. T-test shows that there is statistic

difference between the student group and teacher group ($P=0.039<0.05$), indicating that the teachers evaluate the importance of the language sub-skills differently from the student group.

The items that have values larger than 4 are identified as very important, given the length of the scale (i.e. 5 points). Table 4.14 presents the means of perceived importance of these sub-skills. The means that are larger than 4 in both the student group and the teacher group are in bold-face. Those that are larger than 4 in only the student group or the teacher group are in bold-face and italic. The teacher group identified more sub-skills that are very important. Reading medical textbooks, writing emails or letters, listening to radio or other audio materials, translating article abstracts from Chinese to English, and using grammar properly in writing are sub-skills that are considered to be very important by the teachers. The only sub-skill that is considered very important by the students but not by the teachers is having conversations in the workplace.

Table 4.14: Means of the Perceived Importance of Language Sub-skills

Language Skills	Sub-skills	Student Group	Teacher Group
27A. Reading	a. English textbooks	3.7112	4.0811
	b. Course handouts and assignments	3.7072	3.8919
	c. Medical journal articles	4.0462	4.2703
	d. Instructions for labs	3.6176	3.6216
	e. Internet resources	4.3256	4.1351
27B. Writing	a. Lab reports	3.8279	3.9189
	b. Assignments	3.5233	3.7297
	c. Lectures notes	3.5436	3.6486
	d. Medical records	3.7500	3.6757
	e. Examination questions	3.7395	3.7568
	f. Letters or emails	3.4605	4.1622
	g. Research articles	4.2164	4.4324
27C. Speaking	a. Having daily conversations	4.1163	4.4054
	b. Having conversations in workplace	4.0981	3.7297
	c. Presenting oral reports	4.0558	4.2432
	d. Participating in non-academic discussions	3.8096	3.6757
	e. Participating in academic discussions	4.2000	4.3784
27D. Listening	a. Following academic lectures/seminars	4.2639	4.4324
	b. Listening to class	4.0498	4.2432
	c. Listening to radio/other audio materials	3.9036	4.0811
27E. Translating	a. Translating academic articles from Chinese to English	3.6858	3.7297
	b. Translating academic articles from English to Chinese	3.9442	3.9730
	c. Translating article abstracts from Chinese to English	3.7214	4.2432
27F. Grammar	a. Using grammar properly in writing	3.7693	4.5405
	b. Using grammar properly in speaking	3.3318	3.3784
27G. Vocabulary	a. Understanding medical terminology in textbooks	4.3545	4.5135
	b. Understanding medical terminology in literature reading	4.3025	4.4595
	c. Pronouncing medical terminology properly	3.7008	3.8919
	d. Using medical terminology in writing	3.9985	4.4054
	e. Using medical terminology in academic discussions	4.1331	4.1622

4.2.2.2 Comparison inside the Student Group

The students at all learning levels consider learning English to be very important for both their medical studies and career development, with means for item 24 and 25 are rated as higher than 4 (see Table 4.15). One-way ANOVA finds no statistical

difference in item 24 in between the learning levels, but there is difference between level 1 and level 3 in item 25 ($P=0.004<0.05$), indicating that students at elementary level consider English to be more important for their future career development than the students at higher levels.

Table 4.15: Means of the Perceived Importance of English Learning and Language Skills of Student Learning Levels and Teacher Subgroups

Item	Student Group			Teacher Group		
	Level 1	Level 2	Level 3	ME	ADM.	MS.
24	4.2308	4.2018	4.0634	4.6667	4.6000	4.1923
25	4.3895	4.2477	4.1064	4.8333	4.4000	4.5385
26a	4.7631 (<i>1</i>)	4.7273 (<i>1</i>)	4.4965 (<i>1</i>)	4.6000 (<i>2</i>)	4.6000 (<i>1</i>)	4.9615 (<i>1</i>)
26b	4.1045 (<i>5</i>)	3.9772 (<i>5</i>)	3.9645 (<i>3</i>)	5.0000 (<i>1</i>)	4.4000 (<i>2</i>)	4.2308 (<i>3</i>)
26c	4.3693 (<i>4</i>)	4.1136 (<i>3</i>)	3.6950 (<i>6</i>)	4.1667 (<i>4</i>)	3.8000 (<i>5</i>)	4.2308 (<i>3</i>)
26d	4.4441 (<i>2</i>)	4.2785 (<i>2</i>)	3.8786 (<i>5</i>)	4.1667 (<i>4</i>)	4.1000 (<i>3</i>)	4.5769 (<i>2</i>)
26e	3.8780 (<i>6</i>)	3.8241 (<i>6</i>)	3.9929 (<i>2</i>)	4.3333 (<i>3</i>)	4.0000 (<i>4</i>)	3.8846 (<i>4</i>)
26f	3.0279 (<i>7</i>)	2.7419 (<i>7</i>)	3.1773 (<i>7</i>)	4.0000 (<i>5</i>)	3.1000 (<i>6</i>)	3.5000 (<i>5</i>)
26g	4.3902 (<i>3</i>)	4.0596 (<i>4</i>)	3.8865 (<i>4</i>)	4.1667 (<i>4</i>)	3.8000 (<i>5</i>)	4.2308 (<i>3</i>)

* The percentage is the proportion of the numbers of means higher than 4 to 30, the total of subskills.

As for the seven language skills, the students at all levels regard reading skills as the most important one and grammar as the least important one (see Table 4.15). The students at level 1 and level 2 have very similar opinions. The only difference lies in how they rank speaking skills and terminology. Students at level 1 rank terminology before speaking skills, while students at level 2 rank speaking skills before terminology (the ranking is indicated in italic numbers in brackets after each mean). Students at level 3 attach much more importance to writing and translating skills than students at other levels, ranking them as third and second.

As for the importance of the 30 language sub-skills, students at different levels vary

in their opinions. One-way ANOVA reveals statistical difference both between the elementary level and intermediate level and between the elementary level and the high level. The students at the elementary level identify 63.33% of these sub-skills as very important, the students at the intermediate level 23.33%, and the students at the high level 10.00% only (see Table 4.16), implying that from elementary level to high level there is a decrease in the number of sub-skills⁴ that are considered very important. But comparing the percentage of sub-skills with means larger than 4 in different grades of students indicates that there is a sudden increase in the number of sub-skills that are considered very important by the seventh-year students (see Table 4.17 for the mean of each item perceived by different grades of students and Figure 4.1 for a visual presentation of the changes).

Almost all the 12 sub-skills that are identified by the seventh-year students as very important, are all related to academic research, such as, reading academic articles, reading Internet materials, writing academic articles, participating in academic discussions, translating articles or abstract from Chinese to English or from English to Chinese, using grammar correctly in writing, understanding medical terminologies in literature reading and using medical terminologies in academic discussions. Compared with the first-year students' choices of 21 sub-skills, the seventh-year students' choices are more practical in the Chinese context, as will be confirmed by data from interviews and focus group discussions.

Table 4.16: Means of the Perceived Importance of English Language Sub-skills in Student Learning Levels

Language Skills	Sub-skills	Level 1	Level 2	Level 3
27A. Reading	a. English textbooks	3.8502	3.5324	3.7021
	b. Course handouts and assignments	3.9268	3.6343	3.3669
	c. Medical journal articles	4.1568	3.9727	3.9366
	d. Instructions for labs	3.8741	3.4083	3.4225
	e. Internet resources	4.0523	3.9174	3.8786
27B. Writing	a. Lab reports	4.2587	3.2752	3.5957
	b. Assignments	3.7666	3.3767	3.2535
	c. Lectures notes	3.9233	3.2930	3.1500
	d. Medical records	4.2334	3.4419	3.2394
	e. Examination questions	4.0035	3.6682	3.3121
	f. Letters or emails	3.5540	3.3871	3.3830
	g. Research articles	4.4460	4.0274	4.0426
27C. Speaking	a. Having daily conversations	4.3449	4.0324	3.7817
	b. Having conversations in workplace	4.4878	3.8525	3.6739
	c. Presenting oral reports	4.3659	3.8670	3.7143
	d. Participating in non-academic discussions	4.0035	3.7156	3.5603
	e. Participating in academic discussions	4.4685	4.1468	3.7376
27D. Listening	a. Following academic lectures/seminars	4.4564	4.1955	3.9787
	b. Listening to class	4.3624	3.8186	3.7660
	c. Listening to radio/other audio materials	4.2125	3.6620	3.6429
27E. Translating	a. Translating academic articles from Chinese to English	3.7875	3.4566	3.8357
	b. Translating academic articles from English to Chinese	4.0732	3.7373	4.0000
	c. Translating article abstracts from Chinese to English	3.8310	3.5349	3.7857
27F. Grammar	a. Using grammar properly in writing	3.9861	3.5161	3.7183
	b. Using grammar properly in speaking	3.4146	3.1843	3.3901
27G. Vocabulary	a. Understanding medical terminology in textbooks	4.5769	4.2982	3.9930
	b. Understanding medical terminology in literature reading	4.4948	4.2146	4.0493
	c. Pronouncing medical terminology properly	3.9755	3.4587	3.5177
	d. Using medical terminology in writing	4.1324	3.8848	3.9014
	e. Using medical terminology in academic discussions	4.3240	4.0415	3.8873
Percentage*		63.3%	23.3%	10.00%

* The percentage is the proportion of the numbers of means higher than 4 to 30, the total of sub-skills.

Table 4.17: Means of the Perceived Importance of English Learning and Language Skills in Different Grades of Students

	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th
Item	Year	Year	Year	Year	Year	Year	Year
24	4.2905	4.1308	4.2157	4.1897	4.2048	3.7600	4.4444
25	4.4833	4.2286	4.2647	4.2328	4.2317	3.8600	4.3333
26a	4.7778	4.7383	4.8039	4.6610	4.4819	4.4286	5.0000
26b	4.1444	4.0374	4.1275	3.8462	4.0723	3.7755	4.0000
26c	4.5444	4.0748	4.2255	4.0169	3.9639	3.3265	3.2222
26d	4.5222	4.3113	4.3824	4.1880	4.1098	3.6122	3.2222
26e	3.9056	3.8318	3.8687	3.7863	4.0602	3.8776	4.0000
26f	3.0722	2.9533	2.7800	2.7094	3.2289	3.1429	2.8889
26g	4.4833	4.2336	4.3500	3.8136	3.9398	3.7143	4.3333
27Aa	3.8111	3.9159	3.6970	3.3932	3.5422	3.3600	3.7500
27Ab	3.9167	3.9439	3.8400	3.4569	3.4337	3.2653	3.2500
27Ac	4.1833	4.1121	3.9216	4.0169	4.0000	3.7200	4.5556
27Ad	4.0389	3.5943	3.4902	3.3362	3.4458	3.3000	3.8889
27Ae	4.0722	4.0187	4.0392	3.8103	3.9012	3.7600	4.3333
27Ba	4.2849	4.2150	3.3333	3.2241	3.7561	3.3000	3.7778
27Bb	3.7611	3.7757	3.5600	3.2174	3.4819	2.9400	2.8889
27Bc	3.9889	3.8131	3.4545	3.1552	3.3580	2.8800	2.7778
27Bd	4.3222	4.0841	3.5248	3.3684	3.4699	2.9400	2.7778
27Be	3.9333	4.1215	4.0000	3.3793	3.4512	3.1800	2.7778
27Bf	3.5000	3.6449	3.3663	3.4052	3.5244	3.1400	3.4444
27Bg	4.5056	4.3458	3.9706	4.0769	4.0120	3.9796	4.6667
27Ca	4.4333	4.1963	4.0303	4.0342	4.0602	3.4200	3.2222
27Cb	4.5722	4.3458	3.9000	3.8120	3.9136	3.3750	3.1111
27Cc	4.4944	4.1495	4.0294	3.7241	3.9512	3.4286	3.1111
27Cd	4.0778	3.8785	3.6832	3.7436	3.7349	3.3878	2.8889
27Ce	4.6111	4.2264	4.1683	4.1282	3.8049	3.5800	4.0000
27Da	4.5222	4.3458	4.2353	4.1610	4.1220	3.8000	3.6667
27Db	4.3778	4.3364	3.9900	3.6696	3.8902	3.6200	3.4444
27Dc	4.2889	4.0841	3.6733	3.6522	3.7805	3.4490	3.4444
27Ea	3.7667	3.8224	3.4752	3.4407	3.7561	3.9200	4.1250
27Eb	4.0389	4.1308	3.7200	3.7521	3.8072	4.2600	4.3750
27Ec	3.7667	3.9423	3.4600	3.6000	3.7349	3.7347	4.6250
27Fa	4.0444	3.8879	3.5900	3.4530	3.7229	3.5800	4.4444
27Fb	3.5000	3.2710	3.2970	3.0862	3.4268	3.4000	3.0000
27Ga	4.6444	4.4623	4.4356	4.1795	4.0482	3.8000	4.5556
27Gb	4.5500	4.4019	4.2673	4.1695	4.0361	3.9800	4.5556
27Gc	4.2222	3.5566	3.4950	3.4274	3.6585	3.2800	3.5556
27Gd	4.1389	4.1215	3.9200	3.8547	4.0361	3.5800	4.4444
27Ge	4.3556	4.2710	4.0693	4.0172	3.9277	3.7800	4.1111
Percentage	70.00%	60.00%	30.00%	26.67%	23.33%	3.33%	40.00%

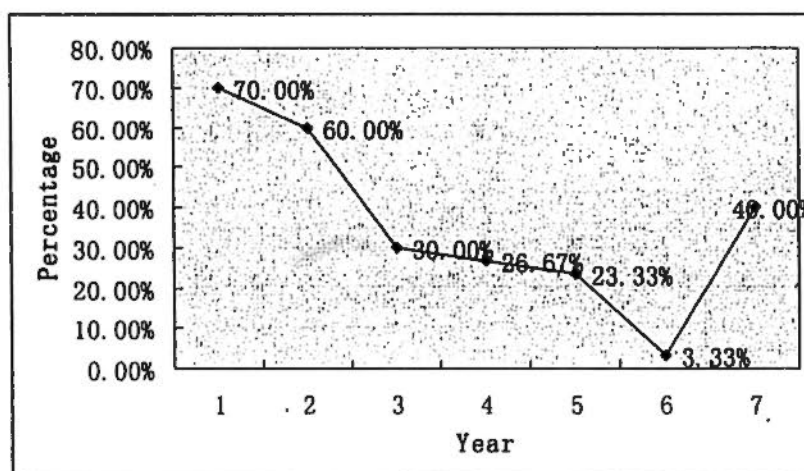


Figure 4.1: The Percentages of Sub-skills with Means Larger than 4 in Different Grades of Students

4.2.2.3 Comparison inside the Teacher group

One-way ANOVA reveals no statistic difference in the mean differences of the three teacher subgroups, namely the ME (medical English) group, the Adm. (administrative) group, and the MS (medical subject) group in items 24 and 25. Thus, we see that all the teachers agree with the high importance of English learning for medical students in both medical studies and career development.

As for the ranking of importance of the seven language skills, all groups think grammar is relatively less important. The ME group attach more importance to writing skills than the other groups (mean=5, see Table 4.15), while the MS group evaluate the importance of reading and listening skills much higher than the other groups (mean=4.9615 and mean=4.5769 respectively).

Among the 30 language sub-skills, the ME group identify 73.33% of them as very important, the Adm. group 66.67%, and the MS group 56.67% (see Table 4.18). One-way ANOVA reveals no statistical difference in these groups. The MS group

appears to be more practical than the other groups in that some sub-skills which are not frequently used in the Chinese contexts, such as reading English handouts, writing lab reports, writing assignments, having conversations in the workplace, are not listed as very important by them, as done by the other groups.

Table 4.18: Means of the Perceived Importance of English Language Sub-skills in Teacher Groups

Language Skills	Sub-skills	ME	ADM.	MS
27A. Reading	a. English textbooks	3.8333	3.0000	4.1923
	b. Course handouts and assignments	4.1667	3.2000	3.8846
	c. Medical journal articles	4.3333	4.6000	4.2308
	d. Instructions for labs	3.8333	3.5000	3.6154
	e. Internet resources	4.0000	4.6000	4.1154
27B. Writing	a. Lab reports	3.8333	4.1000	3.8846
	b. Assignments	4.1667	3.6000	3.6538
	c. Lectures notes	4.0000	3.7000	3.5385
	d. Medical records	4.3333	4.0000	3.4615
	e. Examination questions	4.3333	4.0000	3.5769
	f. Letters or emails	4.0000	4.6000	4.1923
	g. Research articles	4.5000	4.5000	4.3846
27C. Speaking	a. Having dally conversations	4.5000	5.0000	4.2692
	b. Having conversations in workplace	3.8333	4.8000	3.5385
	c. Presenting oral reports	4.3333	4.2000	4.2308
	d. Participating in non-academic discussions	3.6667	3.4000	3.6923
	e. Participating in academic discussions	4.3333	4.8000	4.3077
27D. Listening	a. Following academic lectures/seminars	4.5000	5.0000	4.3077
	b. Listening to class	4.0000	5.0000	4.1538
	c. Listening to radio/other audio materials	4.5000	3.7000	4.0385
27E. Translating	a. Translating academic articles from Chinese to English	4.0000	4.5000	3.5000
	b. Translating academic articles from English to Chinese	3.8333	4.4000	3.9231
	c. Translating article abstracts from Chinese to English	4.3333	4.5000	4.1923
27F. Grammar	a. Using grammar properly in writing	4.5000	4.8000	4.5769
	b. Using grammar properly in speaking	3.3333	3.2000	3.3846
27G. Vocabulary	a. Understanding medical terminology in textbooks	4.6667	4.8000	4.4615
	b. Understanding medical terminology in literature reading	4.6667	4.2000	4.4615
	c. Pronouncing medical terminology properly	3.8333	4.3000	3.8462
	d. Using medical terminology in writing	4.3333	3.9000	4.5000
	e. Using medical terminology in academic discussions	4.1667	3.9000	4.2308
Percentage*		73.33%	66.67%	56.67%

* The percentage is the proportion of the numbers of means higher than 4 to 30, the total of subskills.

To summarize, both the student group and the teacher group believe that English is very important for medical studies and career development. Among the seven language skills, the teachers attach more importance to reading, writing and grammar while students rank terminology before writing. In fact, the teacher group rank writing before terminology. The teachers identify more sub-skills as very important, such as reading medical textbooks, writing emails or letters, listening to radio or other audio materials, translating article abstracts from Chinese to English, and using grammar properly in writing, while the students think having workplace conversations is also important for them (teachers don't think workplace conversations in English is as important).

Inside the student group, the students at elementary level consider English to be more important for their future career development than the students at high level do. And the students at high level attach more importance to writing and translating skills. There is a decrease of number of sub-skills that are considered very important from elementary level to high level. Indeed a sudden increase of the sub-skills that are more closely related to academic study is found in the seventh-year students,.

Within the teacher group, all teachers agree with the high importance of English in medical studies and career development. Medical English teachers attach great importance to writing skills, while medical subject teachers think highly of reading and listening skills. The medical subject teachers appear to be more practical about the English use for medical professionals in the Chinese context and identify fewer

language sub-skills as important for medical students.

4.2.3 How to learn ---- Learning Medical English

The questionnaire subjects were asked about how they think about the medical English course as a way to investigate how they would like to learn English. The items in section four of the questionnaire fall into three categories: the necessity of ME course (Item 28), the expectation of ME course (Items 29, 30 and 35), and the evaluation of the current ME course (Items 31, 32, 33, and 34).

4.2.3.1 The Necessity of Medical English Course

Item 28 asks about the necessity of the ME course and requests the subjects to write down their reasons as well. Of the 652 students subjects, 107 (16.41%) gave negative answers. Three out of the 37 teacher subjects (8.11%) denied the necessity. However, a majority of students and teachers recognize the importance of the ME course and think it necessary for the medical students to learn.

It is also found that there is a decrease in the number of students who think of the ME course as unnecessary from elementary level to high level (see Figure 4.2). The reasons for the dubious necessity provided by these students fall into several categories. Reasons that are most frequently stated are listed below (the number in the brackets indicates the number of times the reason is stated). The students at the elementary level appear to complain more regarding reasons 2), 3), 4), 5) and 6).

- 1) ME takes up too much time and influences medical studies. The time can be better spent on medical studies (18)
- 2) The learning efficiency is low. What is learnt is easily forgotten. (12)
- 3) ME can be learnt by the students themselves if they are really interested. (8)
- 4) ME is too difficult to learn. (8)
- 5) ME course should be optional rather than compulsory. (6)
- 6) ME course is set for a handful of students who want to go abroad for further study. A majority of the students will stay inside China as medical doctors and it is not necessary for them to learn ME. (6)
- 7) ME course is not well designed to be connected with medical subject learning. It is better if it can be integrated with medical subjects learning and does not remain as an independent course. (5)

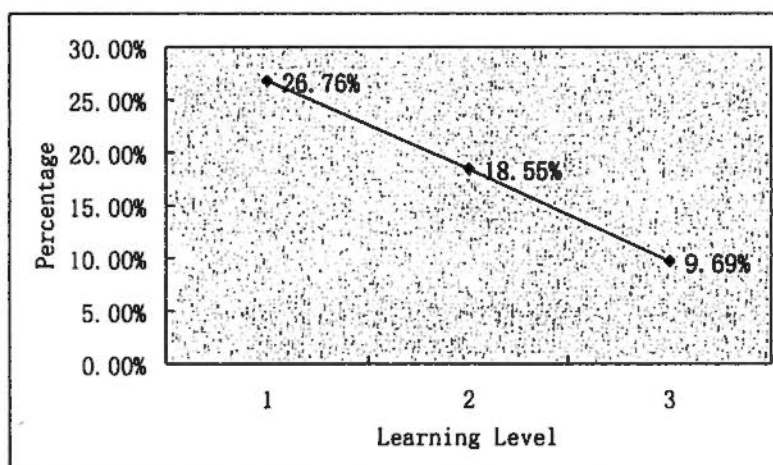


Figure 4.2: Percentage of Students Who View ME Course as Unnecessary in Different Learning Levels

Three teachers denied the necessity of ME course for the reasons that ME can be self-learnt, that learning efficiency is low, and that students with good English proficiency can easily learn medical subjects in English and do not have to take a transitional course like ME.

4.2.3.2 The Expectation of ME Course

Item 29 inquires about the focus of the ME course as understood by the subjects. The answers are summarized in Table 4.19. It can be seen that in both student group and teacher group, and in all learning levels and teacher subgroups, more than half of the subjects think the focus of the ME course should be on both medical knowledge and language skills. There is no one that thinks the focus should be on medical knowledge only in both the ME group and the Admin group.

Table 4.19: The Focus of ME Course as Understood by Different Subjects

Focus of ME course	Student Group				Teacher Group			
	level 1	level 2	level 3	Total	ME	Adm.	MS	Total
a. Medical knowledge	15.92%	8.10%	21.13%	17.79	0.00%	0.00%	23.08%	6.22%
b. Language skills	22.49%	22.62%	26.76%	23.47%	33.33%	0.00%	26.92%	29.73%
Both a and b	61.59%	59.28%	52.11%	58.74%	66.67%	60.00%	50.00%	54.05%

Item 30 lists seven language skills, namely writing, reading, listening, speaking, translating, grammar and terminology, and asks which skills should be the focus of the ME course. Those skills that are ticked out by the subjects were given one point and the total points were calculated. The quotients of the total points divided by the total numbers of subjects serve as the indices of importance perceived by the subjects. Table 4.20 lists the indices of importance in both the student and the teacher group. A look at the table shows that the ranking is consistent with what is presented in Table 4.13 about the perceived importance of different language skills. It means that both the students and the teachers think the ME course should be responsible for teaching the language skills that are most important for medical students. Section 4.3.3 will

help us determine whether these expectations are realized in the class practice.

Table 4.20: The Focus of the ME Course in terms of What Language Skills to teach

	Student Group		Teacher Group	
	Index of Importance	Ranking	Index of Importance	Ranking
Reading	0.7807	1	0.8919	1
Writing	0.4893	5	0.6216	3
Speaking	0.7009	3	0.5946	4
Listening	0.7270	2	0.7568	2
Translating	0.3620	6	0.3243	6
Grammar	0.1043	7	0.0541	7
Terminology	0.5736	4	0.4595	5

Item 35 asks about the best learning time for the ME course during the 7-year medical study. The idea that the ME course should be provided every year, from the first-year to the seventh, is supported by 35.14% of the teachers and 37.27% of the students. Both groups think a continuous ME course throughout the 7-year medical study is good for the students because such a course can be designed to follow a proper sequence which is consistent with the medical curriculum and thus help the students to understand medical knowledge better. Moreover, such a course will lessen the students' burden through the extending the learning time and spread it into different learning stages. Most importantly, many teachers and students agree that language learning is a slowly developing process demanding a lot of time and energy and the language abilities can not be achieved in an action. At the same time, 34.48% of the students think the best learning time is in the first year only. The most important reason, according to them, is that in the first year they do not have to learn a lot of medical subjects and can spare more time for ME, while in later school years, especially in the second year, the burden of medical learning is too heavy for them to

spare time for ME.

Only a very small proportion of students or teachers have made other choices in Item 35, such as ME should be learnt in the second year or third year, or in the fourth or fifth year. Therefore, it can be summed up that more students and teachers think the ME course should be taught in the first year, or every year. These rather extreme results reveal that, first, there is worry about availability of time to spare for a long-term ME course because of the burden of medical learning beginning from the second year; and yet, there is an awareness that a long-term ME course is important to achieve the best learning results and benefit the students most.

The ME syllabus framed by the medical college stipulates that the ME course is only set for the first-year students. Findings from the questionnaire indicates the necessity of redesigning the ME course to satisfy the students' English learning needs throughout all seven years and at the same time not to come into conflict with medical study.

4.2.3.3 The Evaluation of the ME Course

The evaluation of the ME course is investigated through Items 31, 32, 33, 34, which ask about which language skills are actually taught in the ME class, what activities take place in the ME class, and how the students like the activities and the materials used in the ME class. Because only the first-, second-, and third-year students have taken the ME course, data of these items are collected from these students only. And

only the ME teachers are asked the same questions.

The skills or activities (or materials) with means larger than 3 are considered to take place more frequently or are more preferred by the students, given the length of the scale (i.e. 5 points). These skills or activities (or materials) are listed in Table 4.21²⁷ and comparison is made between the student group and the teacher group. A look at the table shows that both the students and the teachers point out that terminology, listening, speaking, and reading are more frequently taught in the ME class. In particular, terminology is recognized by both groups as the most frequently taught one (mean = 4.1949 in the student group and mean = 5.0000 in the teacher group). But, as displayed in Table 4.20, terminology is not listed by both the students and the teachers as an important focus of the ME course (ranked 4th and 5th among the seven language skills by the students and the teachers respectively). While the most important focus of the course perceived by both groups, namely reading skill, only come in fourth in terms of its frequency of teaching in the class. These findings indicate the discrepancies between perceptions and practice, which will be further supported by the data from the classroom observations.

²⁷ The mean for the current textbook provided by the student group is smaller than 3, but it is listed in the table to present a contrast between the students' and the teachers' evaluation of the popularity of the textbook.

Table 4.21: The Evaluation of ME Course in terms of Language Skills and Class Activities

Item	Students		Teachers	
	Skills/Activities	Mean	Skills/Activities	Mean
31: Which English skills are taught in the Medical English course?	Terminology	4.1949	Terminology	5.0000
	Listening	3.4103	Listening,	4.4000
	Speaking	3.2359	Speaking	4.2000
	Reading	3.1128	Reading	4.0000
32: What kinds of teaching activities take place in the Medical English class?	Teacher lectures	4.6436	Teacher lectures	4.2000
	Student oral presentations	3.3128	Vocabulary drills	4.0000
	Vocabulary drills	3.2410	Activities involving audio/video playing	3.8000
	Activities involving audio/video playing	3.0179	Group discussions	3.8000
			Role playing	3.6000
			Reading exercises	3.0000
33: How do you/your students like the teaching activities in the Medical English class?	Teacher lectures	3.6624	Role playing	4.6000
	Activities involving	3.1525	Group discussions	4.2000
	Audio video playing		Teacher lectures	4.0000
	Role playing	3.1418	Activities involving audio/video playing	3.8000
	Student oral presentations	3.0103	Reading exercises	3.4000
			Vocabulary drills	3.0000
34: How do you/your students like the current teaching materials in the Medical English course?	Supplemental video materials	3.5604	Supplemental audio materials	4.2000
	Supplemental text materials	3.0668	supplemental video materials	3.8000
	Supplemental audio materials	3.0257	Supplemental text materials	3.6000
	The current textbook	2.9460	The current textbook	3.2000

Among the four activities the students identify as more frequently taking place in the ME class, teacher lectures are seen as most frequent (mean = 4.6436). Although vocabulary drills take place quite often (mean = 3.2410), it is not so favored by the students. Rather, role playing seems more preferred (mean= 3.1418). The teachers identify three more activities, namely role playing, group discussions, and reading exercises, and think their students like them better. As for the teaching materials, the

teacher think their students like all the materials listed in the questionnaire, but the students like the supplementary ones only. The textbook that is specified by the course does not appeal to the students as much as other materials. The focus group discussions with the students who were taking or had taken the ME course reveal that they did not spend a lot of time on the textbook except when they had to prepare for tests or examinations, which were mainly textbook-based. The students had not benefited from reading and studying the textbook as expected by the ME teachers.

To sum up, the majority of students and teachers think it necessary to have the ME course. Among the students, more negative responses are found in the elementary level than the higher levels. More than half of the subjects think the focus of the ME course should be on both medical knowledge and language skills. As for language skills, both the students and the teachers believe the most important focus of the ME course is teaching reading skills, but they all think terminologies rather than reading skills are actually the most frequently taught in the ME class.

A continuous ME course throughout the 7-year medical study wins more support from both the students and the teachers. But more than 30% of the students think that ME should be required only in the first year's study because of heavy load of study in later school years. The results suggest that the current ME course may not be able to fully serve students' needs. It is probably necessary to redesign the ME course to be more efficient for the students to learn and more consistent with the medical curriculum.

Among the various teaching activities, teacher lectures take place most frequently. Vocabulary drills and group discussions are often done in the class as well, but they are not favored by the students, while the teachers think students do like these. The students do not like the specified textbook, contrary to the ME teachers' belief once again. These findings indicate that, as participants of the ME class, sometimes the ME teacher and the students see things differently and there is a need for them to communicate with each other so that the ME course can be more effectively taught and learnt.

4.2.4 Summary of Findings from the Questionnaire Survey

This section introduces the findings of the questionnaire survey from three aspects: (1) why the medical students want to learn English, (2) what specific skills they need to learn, and (3) how they can learn English through the ME course. Some tentative conclusions can be made based on these findings:

- 1) The students have more interests in foreign languages, people and cultures than the teachers expect. This may be better made use of to motivate the students' English learning.
- 2) The teachers believe the students are more extrinsically motivated to learn for their career development, implying the need to balance the students' intrinsic and extrinsic motives so that English learning will not be something that is externally imposed on the students.
- 3) Two important, yet somewhat contrasting, views appear among the students and the teachers as for the timing of the ME course: to take it in the first year only so as to avoid heavy study load, or to take it every year to ensure better

learning results and better integration with the medical curriculum. This suggests the necessity to redesign the ME course and enhance teaching effectiveness.

- 4) There are different opinions about which language skills are more important for the medical students, what to learn from the ME course and how to learn in the class, implying the need to incorporate more communication and negotiation among both the students and the teachers so that better decisions can be made in terms of what are the best teaching content, materials and activities in the ME course.
- 5) The students at the elementary level appear to enter the university with more enthusiasm and longing for English use in medical studies and career. But they seem to become indifferent and less interested in English learning later. At high level, especially upon graduation, they adopt a more practical view of English learning and become better motivated again. It will be significant to look into the reasons behind these changes and seek better ways to motivate the students in English learning. It will also be significant to look into the conflicts between medical learning and English learning in later school years and redesign the ME course to better satisfy the students' English learning needs at different learning levels.
- 6) The teachers in different posts do not have many different ideas about the students' English learning needs. But the average teachers who neither teach the ME course nor take administrative posts are more practical about English use in the students' career development, indicating the need to look into the real contexts of English use in the students' future workplaces and identify the English learning needs broadly.
- 7) Both the students who have taken the ME course and the ME teachers do not want to give priority to terminology in the ME class, but they all identify terminology as the most frequently taught content. There appears to be a gap between their perceptions and classroom practice. This suggests the importance to see what is happening in the ME class and investigate the role

terminology plays in the ME course.

In the above conclusions, however, some caveats must be noted. First, though questionnaire survey has always been the most common methods of needs analysis to obtain “objective” information about learners on a large scale (West, 1994), it has the disadvantages of relatively artificial and impersonal (Brown, 2001). And the information and responses obtained tend to be limited by the pre-determined questions and response options (Long, 2005). It therefore fails to provide a more emic perspective for researchers and look into the specific sociocultural contexts in which learners learn and use language (Belcher, 2001). Secondly, although some statistical efforts have been made to remedy the unequal group sizes, such as Welch’s T-test and Gabriel’s method, some inferences based on statistical testing may not be significant enough and demand more evidence. Therefore, the above conclusions are tentative, and the data obtained from the questionnaire survey need to be cross-referred and triangulated with the findings from other sources and methods in later sections.

4.3 Findings of the Classroom Observations

The following subsections introduce the findings from the classroom observations within three aspects: common activities in the ME class, students’ responses, and the students’ satisfied/unsatisfied English learning needs.

4.3.1 Activities in the ME Class

The instructional activities that take place in the ME class are summarized in Table 4.22. The activity types used here to describe the classroom activities follow Richards & Lockhart's classifications (2000).

- ◆ *Presentation activities:* They are tasks in which new learning material is presented for the first time to introduce and clarify a new learning item. For example, the ME teacher introduces basic knowledge about the endocrine system, including the structures, functions, and common diseases of the endocrine system
- ◆ *Practice activities:* They are defined as tasks which involve performance or learning of an item that has been previously presented. For example, some students are invited to explain the key concepts of the endocrine system they have just learn, such as hormones, thyroid, or diabetes.
- ◆ *Memorization activities:* They are tasks involving memorization of information or learning materials. For example, the teacher requires the students to match terms with their definitions or explain the terms in their own words.
- ◆ *Application activities:* They are tasks which require learners to use, in a creative way, knowledge or skills that have been previously presented. For example, the students role play as doctors and patients to use the medical knowledge they have just learnt.
- ◆ *Comprehension activities:* They are activities in which students develop or demonstrate their understanding of written or spoken texts. For example, the students watch a video clip and answers the questions raised by the teacher.
- ◆ *Strategy activities:* They are tasks that develop particular learning strategies and approaches to learning. For example, the ME teacher explains some common bases, suffixes or prefixes in medical terms and gives the students a list of medical terms to guess the meanings.
- ◆ *Affective activities:* They refer to tasks which have no specific language learning goal but are intended to improve the motivational climate of the classroom and

to develop the students' interest, confidence, and positive attitudes. For example, the teacher invites one student to read a joke on medicine so that the class is not overly boring.

- ◆ *Assessment activities:* They are activities that enable the teacher or learner to evaluate the extent to which the goals of an activity or lesson have been successfully accomplished. For example, the teacher raises questions concerning the topic of last lecture to check if the students have learnt what have been taught.
- ◆ *Feedback activities:* They are activities that give feedback on learning or on some aspect of performance on the activity. For example, the teacher gives comments on the oral presentations the students have just made.

(Richards & Lockhart, 2000, pp.163-166)

The most common classroom activity is teacher presentation through Power Point slides, which focus on the explanation of human body systems and medical terms and takes up more than half of the total class time (56.49 %). In this activity, reading comprehension of the slides and listening comprehension of the teacher's lectures are practiced. The second common activity (27.77% of the class time) is students' group discussions, oral presentations, or role playing. Speaking is the focus of these activities. The distinctions between practice activities and application activities sometimes overlap. The students may simply explain a disease that has been introduced in the previous lecture, which fall into the practice type. But if students use the medical knowledge in a more creative way, such as role-playing as a patient who complains to the doctors, the activity falls into the application category. So group discussions, oral presentations, or role playing are all marked as practice/application type.

Table 4.22: Activities in the Medical English Classes

Activity type	Activities	Time spent on the activity (minutes)	percentage of total class time
Presentation activities	Teacher: Instruction/lecture	592	56.49%
Practice/application activities	Student: Oral presentation; Group discussion; Role playing	291	27.77%
Comprehension activities	Student: Listening to tapes; Watching video/drama; Reading textbooks	93	8.87%
Assessment/Memorization activities	Reviewing previous lectures; Doing in-class exercises	47	4.48%
Affective activities	Reading a joke on medicine	10	0.95%
Strategy activities	Word-formation	8	0.76%
Feedback activities	Teacher: Giving comments on oral presentations	7	0.67%
	Total	1048	100%

Comprehension activities rank third in the class activities, though they only account for 8.87% of the class time. In three of the observed classes, the students watch videos or listen to a passage and then answer the questions raised by the teacher. In one class, the teacher asked the student to open the textbook, read through the text and answer some questions to check their understanding.

There are two kinds of assessment activities in the ME classes that were observed. One is the review of the previous lecture at the beginning of the class. The teacher briefed on the pharmacological knowledge that had been taught in the previous lecture and asked some questions for the students to answer. It is noticed that the teacher graded the students' answers and noted the grades down. The other kind is vocabulary drills. In one

class, the teacher named some students to explain terms. In another, the students were asked to match medical terms with their definitions. Because all these activities focused on how well the students have memorized the teaching content, they are also marked as memorization activities.

Only one affective activity was found. The teacher asked one student to read out a joke which talked about a man who seeks medical aid. Another student was asked to translate the joke into Chinese. The major purpose of this activity, as the teacher later explained to the researcher, was to arouse the students' interest and make the class less boring.

The only strategy activity was an exercise on medical terms. The teacher first introduced some word bases of the cardiovascular system, such as *angi/o*, *aort/o*, and *cardi/o*, and provided a list of terms for the students to define by guessing meaning from the word bases and word combining. In this way, the students were trained in the strategy of guessing meaning of new words from word formation.

Feedback activity was only found in one teacher's class when she commented on the student's oral presentations and gave advice to improve PPT writing. Though there were other activities concerning student's oral production, the other teachers did not give any feedback, except that in one or two cases, they corrected the students' pronunciation of difficult terms²⁸.

²⁸ It may be argued that in comprehension activities, the teachers also gave feedback when they checked the students' understanding of the oral or written materials. But it was found that in those cases, the ME teachers simply provided short answers or gave brief comments to the students' answers, such as "Yes", "Right" and "Good". It is difficult to calculate the time devoted to these fragmentary feedback and therefore feedback provided during the comprehension activities were not included here.

It can be summed up that teacher lectures take place most frequently in the ME class, student oral practice, such as oral presentation, group discussions and role playing, comes in second, and listening and reading comprehension rank third. Skills that are frequently involved are terminology, listening, speaking, and reading. This is consistent with what is found out in the questionnaire about the frequency of skills and activities in the ME class (see the summary in Table 4.21).

4.3.2 The Students' Responses

The students' responses to the class activities were closely observed as clues that indicate their attitudes towards English learning. Stated by the students as the most preferred activity (mean=3.6624), teacher lectures do not bring about a lot of student involvement. During teacher presentation, students usually gave short responses such as "yeh" and "no" to the teacher' inquiries about their understanding. In all the classes observed, no one raised questions voluntarily. They only showed strong interest in pronunciation and always repeat some terms after the teacher. It was observed that if the teacher's presentation lasted for more than one hour, the students tended to show lower concentration at these times. In some classes, the students in the back seats even chatted or dozed off. In one class, it was noticed that the number of absent students increased from 10 in the first hour to 15 in the second hour (the total is 37).

In group discussions, the students were relatively more involved, but the involvement neither included all students nor was long-lasting. For example, in one class, the students were asked to explain the digestive system in groups. About half of the students actively

spoke English at the beginning. The other half read the textbooks or looked up words in the dictionary. Fifteen minutes later, most of the students had stopped talking. The students' responses to their peers' oral presentations or role-playing were similar. There were always students who read textbooks or chatted with peers when someone was presenting or role-playing. Therefore, although role-playing and group discussions were identified by the teachers as preferred by the students (mean=4.6 and mean=4.2 respectively), they did not seem to appeal to the students as much as the teachers claim.

That the students enjoy audio/video related activities (mean=3.1525 in the student group and mean=3.800 in the teacher group) is confirmed in the classroom observations. The students appeared to be most motivated and obviously concentrated fully when listening to audio materials or watching videos. In one class, the students listened to a passage about MRSA (Methicillin-resistant *Staphylococcus aureus*) infection. After a student was named to summarize the main points, another student asked a question voluntarily, which then gave rise to a discussion in which other students joined in. Such an active climate was not expected by the teacher himself, as he told the researcher after class.

In short, the students' performance inside the ME class indicates that they are not as ardent learners in the class as would be expected from their self reported perceptions. They are not actively involved in most of the class activities. The activities they claim to like better, such as teacher lecture, do not attract their attention all the time. And some students who were not involved in oral presentations or role playing appeared to be uninterested in the activities. The teachers also overrate the students' interests in these

activities, given that they select seven out of the nine classroom activities as the ones that the students like and give these higher grades than the students (see the grading of the popularity of these activities in Table 4.21). It can be tentatively concluded that in the ME class the students' attitudes towards English learning are passive and show a lack of enthusiasm, although the questionnaire data seems to indicate that they attach great importance to English learning and claim to like some of the class activities.

4.3.3 Satisfied/Unsatisfied Learning Needs

Supplemented by the questionnaire data, the observations inside the ME class help to see to what extent the students' English learning needs are satisfied in the ME course.

As introduced in 4.2.3.2 above, more than half of the students think the ME course should focus on both medical knowledge and language skills. Two out of the six ME teachers that were surveyed think the focus should be on language skills, and the other four ME teachers think the focus should be on both medical knowledge and language skills. But classroom observations show that medical knowledge and medical terms in particular constitute the main part of teaching content. This can be illustrated by the objectives of one class listed in the teacher's teaching slides:

- ◇ Describe the structures and main functions of the urinary system
- ◇ Know the structures of kidney and nephron
- ◇ Describe the process of urine formation
- ◇ Describe the process of urination
- ◇ Know the common diseases of the urinary system

The training of language skills is not emphasized. In the observed ME classes, although reading and listening are involved most of the time, actually there is no skill training at all. Reading in the class involves the reading of slides or the textbook. Students listen to the teachers' lecturing on terms and human structures, listen to other peers answering questions or making oral presentation, or listen to tapes or lines in videos. But, in no case do the teachers explain how reading comprehension and listening comprehension can be better achieved through certain approaches or strategies. Speaking is a regular activity in the class. Among the seven observed classes, five had group discussions or oral presentations. But, as pointed out in 4.3.1, because of lack of confidence in their own English proficiency, the ME teachers seldom give linguistic feedback after these oral practices, not to mention the introduction of speaking skills. It is also noteworthy that the students did not speak English all the time in group discussions. So English speaking practice seems rather limited.

The following activity procedures of a speaking activity (adopted from a teacher's teaching slides) are typically found in the ME class and can serve to demonstrate how speaking is taught in the ME class.

- ◇ The teacher displays a dialogue between a patient and a doctor in PPT.
- ◇ The teacher invites two students to read out the dialogue.
- ◇ The teacher provides some useful expressions and asks the students to have conversations in pair, role playing as a patient with urinary tract infection complaining to a doctor.
- ◇ The students practice the dialogue.
- ◇ Several pairs of students are invited to perform in front of the class.

Such a design of the speaking activity follows the audio-lingual approach of teaching speaking, though the teacher might have no idea about what approach she is using. The presentation of a model dialogue is meant to provide the students with a model text of the language, in the hope that they would imitate and repeat until they are able to speak in a similar way themselves. In the activity, the teacher does not contextualize the dialogue in actual life nor does the teacher draw the students' attention to conversational skills such as turn-taking and negotiation of meaning. Therefore, as some students commented in focus group discussions, their interest in speaking activities gradually disappeared because they felt they learnt little.

Though two teachers spent time on the instruction of academic writing, the students were given no opportunities to produce their own texts; hence no writing was practiced in the class. A close look at the activity procedures of the writing instruction in one class reveals that the major purpose of the writing instruction is the introduction of writing in medical field rather than skill training. It may be argued that when the teacher was presenting some sample texts to the students, she was more or less equipping the students with the writing skill of analyzing text structure, but this part of instruction only occupied a somewhat small segment of time.

- ✧ Introducing different types of medical English writing such as research papers, reviews, conference reports, case reports or theses.
- ✧ Introducing the functions and different types of abstract
- ✧ Presenting some sample texts to show the different sections of an abstract, such as objectives, methods, results, and conclusions.
- ✧ Introducing the structure of a research article and list the writing requirements in different parts.

Therefore, although various kinds of activities are carried out in the ME class, medical terms and medical knowledge are the most important teaching content, while language skills training is far from being the focus. This practice may have misled the students to think that the course objective is to learn medical terms and medical knowledge in English, therefore having to make great efforts to memorize the terms and understanding the knowledge, which is difficult to understand and can be easily forgotten. This may be why they think the course is very difficult and the learning efficiency is low, as reflected by the questionnaire data (see 4.2.3.1). Some learning need has been satisfied, namely the absolute necessity to learn medical knowledge and terminologies. But the students' desires to be trained in reading, speaking and listening are not fully satisfied.

4.3.4 Summary of Classroom Observations

The findings from the classroom observations corroborate existing views in the literature that medical vocabulary teaching is prominent in EMP courses and “the pedagogical method is often unimaginative” (Maher, 1986b, p.136). It was found out that the instruction of medical knowledge and terminology consumed the majority of the instruction time although the ME teachers think terminology is not an important focus, given that the index of importance is only 0.4595 in a scale of 1 (see Table 4.20). Questionnaire data also show that all ME teachers think the focus of the ME course should be on both medical knowledge and language skills training. Therefore, there is inconsistency in what the ME teachers think and what they practice. Such a discrepancy can be explained in a number of ways. It could be possible that the ME teachers

themselves are not sufficiently equipped with the approaches or strategies to train the students in acquiring appropriate language skills, given that none of them has been trained in language teaching. It may also be attributed to the long-term practice of teaching vocabulary in ESP, considering that the importance of teaching vocabulary in ESP is wide spread (Swales, 1983). These explanations are tentative and need to be checked against data from other sources, especially the interviews with the ME teachers.

Questionnaire data also reveal a stronger belief in the importance of language skill training among students, but the teachers' own practices are more geared towards the teaching of medical terms and medical knowledge. The students' desires to have more language skills training are not satisfied. And the students' passive attitude in the ME class reveals low motivation in ME learning, a contrast to what is indicated in the questionnaire survey: the students think highly of English learning and consider many language sub-skills to be very important for them. Furthermore, the ME teachers think the students prefer to have some class activities, such as vocabulary drills and group discussions, and teaching materials, such as the current textbook. But these views are not shared by the students.

The discrepancies presented above have two implications:

- 1) The students' beliefs are not translated in the classroom practice. They may not be fully aware of the importance of English learning and as motivated as they claim.
- 2) Classroom instruction fails to greatly interest the students or fully satisfy the students' needs. The ME course needs to be improved in terms of the teaching content and teaching methods.

Classroom observations have the advantages of offering the researcher opportunities to closely observe the subjects' behaviours in real instructional context and to examine the situation from an etic (outsider's) perspective. But the outsider's perspective needs to be checked through more in-depth inquiries so that the reasons behind the teaching/learning behaviours can be found. To this end the next three subsections turn to the discussion of the findings of the interviews and discussions among the subjects.

4.4 Findings of the Interviews with Teachers

The interviews with the ME teachers (No=7) happened soon, or one or two days after the classroom observation,(hence called post-observation interviews). But they were semi-structured by similar interview prompts as the interviews with other teachers (No=15), who were interviewed mostly in office time when the teachers did not have to teach. For a look at the questions that were raised for the ME teachers only, see Appendix 3C. To avoid redundancy, this section introduces the investigation results of both kinds of interviews together, which fall into four categories: (1) the teachers' English learning experience, (2) their needs of English learning and use, (3) their understanding of the students' English learning needs, and (4) their views of the ME course.

4.4.1 The Teachers' English Learning Experience

Table 4.23 introduces the profile of the teachers that had been interviewed in the main study. The ages of the teachers interviewed range from 28 to 55. Fifteen (68.18%) of

them have PhD degrees and 19 (86.36%) of them (not including the foreign teacher, T7) have the experience of studying or working abroad (including Hong Kong), with stay time varying from 10 days to 21 years (see Table 4.23). It is found that even if they stayed in non-English speaking countries such as France, Germany and Belgium, English was the major language they used.

Table 4.23: Profile of the Teachers Interviewed

Teacher	Age	Sex	Academic Level	Major	Experience of Staying Abroad
T1*	43	F	PhD	Physiology	Academic visit in Canada for 1 month
T2*	37	F	Master	Paediatrics	Academic visit in Canada for 8 months
T3*	28	F	Master	Pharmacology	Academic visit in Hong Kong for 10 days
T4*	34	M	PhD	Pharmacology	No
T5*	29	F	Master	Nutriology	Studying in the UK for 22 months
T6*	47	F	PhD	Pathology	Working in Sweden for 1 year
T7 *	28	M	Doctor of Medicine	Medicine	Working in China for 6 months
T8#	50	F	PhD	Paediatrics	Studying & working in Australia for 21 years
T9#	51	M	PhD	Pharmacology	Working in Germany for 4 months
T10#	43	F	PhD	Injury epidemiology	Academic visit in Canada for 3 months
T11	44	M	PhD	Biochemistry	Studying & working in USA for 10 years
T12	30	F	Master	Microbiology; immunology	Studying in Canada for 6 months
T13	37	F	PhD	Microbiology; immunology	Studying in France for 2 years; working in USA for 1.5 years; academic visit in Hong Kong for 1 month
T14	45	M	PhD	Pathologic physiology	Academic visit in Germany for 6 months
T15	35	M	PhD	Cytobiology, cytogenetics	Working in Hong Kong for 3 months
T16	53	M	PhD	Medical physics	Studying in UK for 8 years; working in Belgium for 2 years
T17	29	F	Master	chemistry	Studying in USA for 3 months
T18	41	M	PhD	chemistry	Working in USA for 1.5 years
T19	55	M	PhD	Microbiology; immunology	Academic visit in USA for 10 days
T20	51	M	PhD	Helminthology	Studying in Germany for 2 years; working in France for 4 years Academic visit in Canada for 2 months;
T21	31	F	Master	Microbiology, Immunology	Studying in Hong Kong for 2 years
T22	29	F	Master	Pathology	No

* Teachers who also teach medical English

Teachers in administrative posts

Except the foreign teacher from Philippines (T7 in Table 4.23), all the teachers learned English as a foreign language in China. Two of them began to learn it in the primary school, fifteen in the secondary school and five in the university. Although their English learning time spanned more than two decades, from the late 1970s to the late 1990s, the way they learned English as a school subject were more or less the same: they memorized words and grammatical structures to get through the examinations. This examination-orientated attitude towards English learning did not change until they began postgraduate studies, when they felt the need to learn English for career development and took initiative to self-learn English. Postgraduate studies are considered by most of them as the turning point of their English learning. Their interest in English developed gradually as they advanced in academic studies. Their attitudes to English learning changed from examination-driven to self-motivated, and their English learning needs shifted from learning it as a school subject to learning it as an academic tool.

Taught in the traditional Grammar-Translation way, many teachers appear to have special interest in word memorization. A teacher (T4) took delight in talking about how he happened to obtain a book about word formation and how the book had changed his method in learning English. Another teacher (T16) reflected on how he memorized 30 new English words everyday in the university to catch up with his classmates.

4.4.2 The Teachers' English Learning Needs and Use

The teachers' daily job that has to do with English use can be classified into two kinds of activities: teaching and researching. In these activities, English is mainly used as a

linguistic tool through which subject knowledge is obtained and spread (e.g. from teachers to students in classroom instruction or among the faculty and professionals in the same field through dissemination of research).⁵

In medical subject teaching, they write Power Point slides in English and lecture mostly in Chinese, as required by the college's bilingual education policy. Five of them are also teaching the English Immersion Class (see the introduction in 4.1.1), which means they have to lecture in English throughout the class. All teachers said they had to refer to English textbooks or other materials, including Internet materials, to prepare for the teaching slides.

Six teachers (not including the foreign teacher) who also teach medical English spend more time on English for the teaching activities. Teaching ME is very challenging for them, as claimed by four of them. In particular, two said they had to spend a lot of time practicing the pronunciation of the medical terms before the class. Inside the class, all of them teach mostly in English. Occasionally, they have to grade the students' English homework after class. Two teachers said they put in greater effort to learn English because of the ME course. One of them (T5) said she read New Concept English and listened to Voice of America to improve herself so that she could be more competent to teach medical English. The other (T4) said he watched the videos several times to make sure that he could understand the materials before using them in the class. He considers the responsibility to teach the ME class to be an opportunity to improve himself:

Because I have to teach medical English, if I'm not competent, it's not good for the

*students. Besides, it's a stimulus for me to learn English. I have to read a lot of materials in English, paper one or electronic ones.*²⁹ (T4 in the post-observation interview)

All the ME teachers told the researcher that they visited some English medical websites regularly to obtain suitable teaching materials for the ME class. Therefore, teaching ME class brings about more opportunities to learn and use English in these ME teachers' daily work.

As for researching activities, although English is seldom used in the experiments, a lot of the actions, such as literature reading and articles writing, are done in English. A teacher (T15) claimed that of all the time devoted to English use, 60% goes to reading published material. Three teachers (T11, T16 and T20), who have spent more time studying and working abroad, said all the literature they read and all the articles they write are in English. Of all the language skills, reading ranks first in terms of its importance, but writing is seen as the most demanding skill. Publishing articles in SCI (Social Citation Index) journals is viewed as an index of research achievement in the college and is awarded in the form of bonus and promotion. But, as non-English speakers, the teachers are not confident to express themselves in English. Many teachers expressed the pressure they had in writing English articles and publishing them in SCI journals. A senior teacher said: "If we don't write articles and get them published in SCI journals, we won't be able to survive in this college."

The academic communication activities inside the college are mainly conducted in

²⁹ All excerpts cited in the thesis are translated from Chinese into English by the researcher. However, in order to retain the original flavor, some awkwardness has been unavoidable.

Chinese, but there are more and more seminars (once or twice a month) delivered by foreign experts invited from abroad. Of all the teachers interviewed, only four said they attended these activities regularly and occasionally joined discussions in English. The opportunities to attend conferences or other academic activities outside the college vary from person to person. Teachers more actively involved in research tend to have more opportunities for these activities. For those not academically active, there is one such opportunity every year or every other year. The junior ones may not have these opportunities at all. Because most conferences the teachers attend are held in China, English is not normally used. But if the conferences are international ones, English may be required. In these academic activities conducted in English, listening is regarded by the teachers as more important than speaking. Other forms of academic communication include telephone calls, letter writing and email exchanges. Again, teachers more actively involved in research spare more time in these communications. One teacher (T10) exchanges ideas with foreign scholars through Skype, a software that provides voice communication service over the Internet. Three teachers (T11, T16 and T20) keep regular contact with scholars or former colleagues abroad through emails.

For most of the teachers, receptive skills, namely reading and listening, come first because these skills enable them to understand and receive information that can be used in research. Writing and speaking come second as higher requirements on them. These interview data are consistent with the questionnaire results shown in Table 4.13 about how the teachers rank different language skills in terms of their importance for the medical students. The teachers, as experienced learners, recognize their students' English

learning needs by looking at what they themselves need to use English in their own working contexts.

Most teachers interviewed show interest in English learning and use in their daily life. They listen to English songs, watch English TV programs, read English newspaper, and read news in some English websites or join in some Internet forums. One teacher (T15) is a fan of the American television series *Desperate Housewives*. The other teacher (T11) is highly interested in another series *Doctor House*. The metaphors two teachers used to express their views on English help to see what English means to them:

English creates a larger space for personal development. Learning one more language means having more space for development.... Chinese offers us a world. English offers us another one. (T16 in the interview)

English opens the door to the western world for me. (T13 in the interview)

It can be seen that English use has penetrated from the teachers' workplace into their daily life. Generally speaking, they hold a very positive attitude towards English use in both their work and daily life.

4.4.3 The Teachers' Understanding of Medical Students' English Learning Needs

All the teachers interviewed agree that English is very important for the medical students. The importance is discussed in different ways and can be summarized from three perspectives: (1) the pragmatic one, (2) the academic one, and (3) the utilitarian one.

First of all, the teachers are pragmatic about the role English plays in the students' study.

Of course English is a compulsory course that all the students have to take and get

credits in the college and in any other universities inside China; additionally, there are English examinations that the students have to pass and get certificates for graduation, such as College English Test bands 4 and 6. English learning, therefore, is something the students have to deal with to survive the current education system in China.

From the academic point of view, the teachers acknowledge the importance of English learning more in terms of the students' future career development. Most of them agree that the students have English learning needs similar to the needs the teachers have if the students want to develop as medical professionals as well. Several of them even think the students will need English more in the future than the teachers do now because of the trend towards globalization. Some teachers pointed out that more than 90% of the medical literature published nationally or internationally is written in English, a figure consistent with the investigation of an Italian scholar (Giannoni, 2008). The students will have to do a lot of literature reading and publish English articles so that they can keep themselves well-informed and advanced in their research fields. For those who do not want to develop in the field of academic research, working as clinical doctors requires less English, given that the majority of the students will work inside China. But, as some teachers point out, to be good doctors, the students also have to know the latest development in the medical field and be able to search for useful information related to the diseases they are treating.

According to most teachers, to help with academic study and research, terminology is essential for the medical students because it is the starting point of learning to read and

write. Reading ranks second and writing ranks third. Several teachers who are more academically active emphasize the importance of listening and speaking in academic communication. They have pointed out that although most students will be working in China, globalization will definitely bring about more opportunities for the students to come in contact with the outside world, no matter which occupations they will take up in the future.

A more utilitarian view of English learning is also expressed by some teachers. English learning may bring about much benefit for the learners. For instance, a teacher talks about the priorities that are usually enjoyed by the students with better English

In our context, we are always impressed by the postgraduates who are good at English and we think they are good students. We give them priorities at the very beginning. The college will think of them first when selecting someone to go abroad. With better English, you will have more chances to go abroad. This is the difference between being good at English and being poor at English. (T14 in the interview)

“Being able to speak English fluently is the best calling card in China”, comments another teacher (T15), who also gives examples of some teachers not qualified in research getting benefit in the college just because of their English proficiency.

However important English is to the students, many teachers think most students have not realized the importance sufficiently and are learning English passively. “I absolutely agree that they are forced to learn,” said one teacher (T14). The students’ resistance to English is observed by the teachers in the classroom. “Whenever I lecture in English, the students yell to protest and I have to switch to Chinese.” observed another teacher (T13).

The Pathology Department used to schedule a foreign teacher to teach the third-year students. The attendance decreased sharply from 140 to 70. Questionnaire survey conducted by the department revealed that only 20% of the students would like the foreign teacher to teach them. In another case, a teacher of the Chemistry Department observed a class delivered totally in English and found that almost all the students read the Chinese textbooks in their seats instead of listening to the teacher.

When asked how to raise the students' awareness of the importance of English learning, many teachers think the best way is to provide more opportunities for the students to communicate with the outside world, such as sending them to study abroad on a long-term or short-term basis or inviting foreign scholars or students to visit the college. Since only a small number of the students (2%, as found in documentary analysis) can be selected to go abroad, a more practical method is suggested by the teachers, namely telling students what English have to do with their profession through seminars or lectures. The professors or senior students who used to stay abroad would do this job best, suggest the teachers.

To sum up, the teachers interviewed think English is very important for the medical students in the Chinese context. They identify terminology, reading and writing as skills that deserve more effort. But they also notice the students' unwilling attitude towards English learning and think most students learn it due to external pressure to pass examinations and graduate. This finding accords with the finding from the questionnaire survey which indicates that the teachers tend to have a stronger feeling than the students

themselves regarding the extrinsic motives behind the students' attempt to learn English.

4.4.4 The Teachers' Views of the ME Course

In this subsection, the ME teachers' views of the ME course are introduced before we discuss the other teachers. Their views are summarized in several parts, namely: (1) their ideas about the course objectives and foci, (2) their concerns in lesson planning, (3) their identification of students' difficulties in the course, and (4) their opinions about the timing of the ME course. The other teachers' views of the ME course only concerns the course objectives and foci. But the teachers' ideas about the college's language policies are also introduced, with special attention paid to the ideas of the three administrators interviewed.

Analysis of the interview data (see Table 4.24) indicate that the learning of basic medical terms and knowledge are regarded by more ME teachers as course objectives, using the terms and knowledge in communication comes second³⁰, and only one teacher states that the course objective should be on the development of the students' language skills. Medical terms and reading are considered by more to be the focus of the course, and speaking and listening are skills that the teachers want to emphasize, while writing attracts less attention. When interviewed, the teachers said writing academic articles is very important for the students, but since they are still in the first year's study, it is nearly impossible to teach writing. But three of them think the course should give the students

³⁰ The distinction between the learning and the using of medical knowledge and medical terms is, in this thesis, the passive acceptance of the knowledge from the teacher and the active usage of it in real communicative situations.

some general ideas of what to write in the future.

The ME teachers' different understandings of the ME course objectives and foci reveal a lack of communication among them. For all of them, except T1, who had chances to know about the course better because she is the lead teacher, the course was assigned as an extra job in short notice. Seldom do they have opportunities to share information about how to teach the course.

Table 4.24: The ME Teachers' Views of the ME Course

Course Objectives	Course Focus	Concerns in Lesson Planning	Students' Difficulties	The Best Learning Time
To learn some medical knowledge (5)	Medical terms (5)	Which terms the students have to master for the units (3)	The students have limited medical knowledge. (4)	Every year (4)
To master basic medical terms (4)	Reading (5)	How to organize activities for the students to use the terms (3)	The students do not have proper learning strategies. (4)	The 4 th , 5 th , & 6 th year (2)
To use the terms and knowledge in communication (3)	Speaking (4)	How to arouse the students' interests (2)	The students do not know why they need to learn the course. (2)	The 2 nd year (1)
To develop language skills (1)	Listening (4)	How to help the students to understand the textbook (1)	The students do not know what to learn in this course. (2)	
	Writing (3)	How to lecture in accord with the students' comprehension level (1)	The students are poor in basic medical terms. (2)	
		How to arrange some activities that help to make the students become more independent (1)		

* The figure in brackets indicates the number of teachers who have made the remark (Teacher No=7).

Three (T1, T2 and T4) teachers are concerned with selecting medical terms for the students to learn and organizing activities for them to practice the terms, and two (T5 and T6) put the students' interests in the course in the first place because they believe the

course is tough and boring for the students. As for the students' difficulties in learning the content of the course, four teachers (T1, T4, T5 and T6) think limited medical knowledge influences the understanding of the teaching content. Learning strategies is another problem. Three Chinese teachers (T1, T2 and T3) think the students are used to "spoon-fed" teaching in the secondary school and do not have independent learning strategies to deal with the study in the university. They have vague ideas of why, what and how to learn in this ME course. The foreign teacher (T7) also noticed this problem:

The students don't know what to do inside the classroom. ... They don't know how to come out with the right strategies in study. ...And we do have another problem. Not everyone is convinced why they have to learn English. That's one. Then how much they want from medical English. So I think we should give necessary orientation to them so that if they have the right attitude, then other things will follow. Right attitude for study, right attitude to take up medical English. (T7 in the post-observation interview)

The teachers' comments help explain the students' passive and unenthusiastic performance in the ME class. The reasons may be twofold: first, they have got used to the teacher-centred cramming educational model in the secondary school and are not equipped with proper learning strategies to study autonomously in the university. Secondly, they are not well-informed of the aims of the ME course and do not have their own ideas of what to learn from the course. The information gap not only exists among the ME teachers, but also among the students.

The teachers' understanding of the course objectives and focus also corresponds with what was observed in the ME class: the ME teachers attach greater importance to

medical terms and spend much more time on the terms than the other skills. At the same time, some of them are more aware of the importance of language use in communication and try to arrange activities that involve oral practice, such as oral presentation, group discussions, and role playing. But these communicative activities remain somewhat unappreciated, as can be seen from the students' low involvement. T1, who is the lead teacher of the ME teaching team, has also observed all the teachers' classes and the following excerpt illustrates what she told the researcher in the interview:

T1: In the class, the teachers turn on the computer and play the slides, and then begin to lecture. They are just ...My feeling is the teachers are busy introducing the body system, say, the respiratory system, how it is structured, what are the terms for different parts, and how they function in the system. They are doing this in English. Do you think they are teaching language or medicine?

Researcher: Medicine. What's your opinion?

T1: Yes, medicine. The students... the students are learning medicine, not the language. You see, the class is jolly. Everyone is happy. Then, you know what happened? The survey shows that 20% of the students think they've learned nothing from the course.

Researcher: The students learn the terms.

T1: And they forget them easily. They don't have to use it in the subject courses. They forget the terms and find themselves learn nothing!

(Excerpt from the post-observation interview with T1)

The ME teachers' failure to pay equal attention to language skill training in the class may be due to their own English learning experience: they have been learning the language mainly through the memorization of vocabulary and grammar. Not trained as language teachers, they have to resort to their own learning experience and teach the students in a

similar way. Another possible reason is that the teachers lack confidence to teach the language and therefore focus on medical terms and knowledge, the part that they are more capable of handling. This is revealed from some teachers' remarks in the excerpts below:

Our language level is not high and it's not possible for us to teach them grammar, or anything about the language. (T4 in the post-observation interview)

After all, we aren't language teachers. My biggest difficulty is pronunciation. I must pronounce the terms right, or the students will learn it wrong from me. It takes me a lot of time to practice pronunciation. (T2 in the post-observation interview)

Another important finding from the interviews with the ME teachers is the teachers' opinions about the timing of the course. Four teachers (T1, T2, T5 and T7) think the ME course should be run every year for the seven-year students, two believe (T4 and T6) the last three year of study is the best time, and one (T3) thinks it should be in the second year. None of the teachers agree to run the course in the first-year, which is actually being practiced in the college, because the students do not have important medical subjects until the second year. They think running the course in the first year is not practical.

Some teachers are skeptical of the motives of setting the ME course early. They think the course is guided by the college's desire to establish reputation for the college.

This is a hotheaded decision. (T1 in the post-observation interview)

The program is too short, maybe it is because the leaders are eager for quick success.

This is the way many policies come out. The leaders' desires matter. (T4 in the post-observation interview)

The college is not a key one. It has to do something special. To have its own features so that it can stand out among so many medical colleges in China. (T6 in the post-observation interview)

The interview data indicate that the ME teachers seem to be of two minds. Nearly all of them acknowledge the necessity of setting the course (only one teacher thinks it is unnecessary, as revealed by the questionnaire survey). But they are skeptical about the purposes of the course and are not convinced of the learning effectiveness. What can the course achieve with the non-English teachers teaching medical English for a group of freshmen without independent learning strategies and medical knowledge?

The interviews with other teachers reveal some similar ideas. Most of them think teaching medical terminology and reading skills should be the objectives of the course. Training in writing is also suggested by many. But, compared with the ME teachers, these teachers do not think it is important to teach listening and speaking in the ME course.

The interviewees also point out that the setting of the ME course was not developed on the basis of consultation with the medical teachers. Five of them did not know about it before the interviews. Those who know about the course have little idea about what is being taught in the course. Six teachers think popular science on medicine serve best as the teaching materials of the course because it is impractical to teach professional medical knowledge to the first-year students.

Talking about the ME course arouses many discussions on the college's language policies, including the English Immersion Class and the requirement for the students to pass the United States Medical Licensing Examinations (USMLE). These discussions help to put the ME course in a larger picture of how English learning is viewed by the medical teachers in general. Four teachers (T13, T16, T18 and T19) think the current language policies will "put the cart before the horse" because the students come to learn medicine rather than English. One of them (T18) said plainly in the interview:

Basically, I think their purpose is ... is always for reputation. They have to do something to let the Foundation³¹ know how the college is different from the other colleges. To show that they are doing something new. ... They are not for the students' benefit. Actually it's very simple. To really help the student, you have to make sure that the graduates can pass the licensing exam in China and find a good job. This is more practical. After all, most of the graduates will work in China. Only a few of them may go to the US. For most students, getting a pass in the United States Medical Licensing Exam makes no sense at all. (T18 in the interview)

Two other teachers (T22 and T12) warn about the negative influence of providing scholarship for students in the English Immersion Class. The lure to study for free would encourage the utilitarian attitude towards English learning and keep the students away from seeing the real importance of English in their future career. Most teachers suggest taking a moderate attitude towards the learning of English in the college. A better practice is, suggested by the teachers, to introduce the role English clearly to the students in that not only will English be essential in their future career but also fluency in English

³¹ The Foundation refers to the foundation set by a famous billionaire who supports the university. See the introduction of the university in 3.2.2.2.

should help them make the best choices for themselves. Personal orientation in the career development matters as the following excerpt suggests.

As far as I know, some students just want to become medical doctors and won't go in for any research. Only those who have published articles in SCI journals can get employed in big hospitals. But some students have no desire to stay in big hospitals. English is not that important for them. (T22 in the interview)

The chief of the Student Affairs Office (T10) holds a similar view. According to her, about 30% of the students in the medical college are from poor families in mountainous areas. Their purpose to study medicine and become doctors is to get rid of poverty. They have no desire to go abroad or to do research and become medical experts and therefore are not motivated to devote too much time to English. For these students, becoming a doctor and keeping a stable job is more practical than doing research and becoming experts.

One third of the teachers interviewed think the ME course should be optional rather than compulsory so that the students can make their own choices. Those who are not really interested in English and research jobs can choose not to take the course. These teachers' opinion is in agreement with some students' ideas in that they think the college had better make the course optional (see 4.2.3.1).

Of the 15 teachers interviewed, three have administrative posts. Their opinions about the ME course's importance vary. The chief of the Student Affairs Office (T10), as introduced above, know more background information about the students and holds a

pragmatic view about English learning in the college. The chief of the Human Resources Department (T9) think only the masters of basic medicine who are on a three-year system will be strictly trained in research. The seven-year students will all be trained as clinical doctors and English may not be as important to them as the college advocates. Providing more opportunities for the students to study abroad is a much better way than requiring them to learn medical English, he comments. Surprisingly, neither the chief of the Student Affairs Office nor the chief of the Human Resources Department were involved in any discussions or decision-making regarding the ME course.

The vice-dean of the college (T8) who makes all the important decisions concerning the ME course, appears to be the most supportive person. The vice-dean's introduction offers information about how the ME course has come into being in the investigated context. She had always been very concerned about how the students can be trained in order to learn academic English more capably, because, as she wrote in the English learning questionnaire, "English is the international language in the biomedical field". For nearly 10 years, she had been looking for able teachers and effective teaching materials to teach medical English. One day she happened to have a look at a book edited by a physiology professor in the college³² and was most delighted that the book can be a good textbook for the ME course. So, the medical English team was built up in a short time and the course began very soon. It can be seen that the ME course was designed almost all of a sudden and there were no procedures or activities that are related to the diagnosis of learning needs, the formation of learning objectives, the selection of teaching content,

³² This book is entitled *New Medical English* and used as the textbook of the ME course later. See more introduction about it in Section 3.2.4.2.

and the discussion of teaching methods. It is far from being a series of activities that contribute to the growth of consensus among the staff, faculty, administration, and students, as Brown (1995) defines the process of language curriculum development. No English language teachers in the college were involved in this process, neither was any medical subject teacher, though the course is claimed to serve as a bridge between the general English courses and the medical subject courses.

When inquired by the researcher about the students' attitude towards the course, the vice-dean responds with optimism:

Yes, the students are very passive learners. Not just for the ME course. They are passive in the medical subject courses too. They are kids. I would say they are still kids. They can not have the foresight to understand what is important for them. So we have to give them something, even in an compelling way. I think many of us used to learn under external pressure. Sometimes it may not be a bad thing. (T8 in the interview)

4.4.5 Summary of the Teacher Interviews

The interviews with the teachers help to draw some conclusions about the teachers' views of English learning in the investigated context. The implications of these findings are summarized below.

- 1) The teachers mainly use English as a linguistic tool to obtain and spread subject knowledge. They are found to need English more in the research activities than in the teaching activities. Receptive skills like reading and listening are ranked as most important for the teachers to obtain information in their research fields, and writing and speaking come second. English also has a role to play in the

teachers' daily lives for communication and recreation.

- 2) The teachers identify the medical students' English learning needs from three perspectives: (a) pragmatically they need to learn English well to obtain degrees and good jobs; (b) academically they need to achieve a higher level of English abilities so as to develop as medical professionals; (c) practically, i.e. from an utilitarian perspective, they need to exhibit better English proficiency to compete in the workplace.
- 3) The ME teachers find that the students do not have proper learning strategies in the ME class, which can be used to explain the students' performance in the ME class and also reveals the need to teach the students language learning strategies.
- 4) Many medical teachers also sense the students are passive or even resistant towards learning English, indicating the necessity to better communicate with the students about their English learning needs and to motivate them more effectively.
- 5) The ME teachers are not confident of their own English proficiency and tend to emphasize the instruction of medical terminology. There is a need for them to be trained both in language abilities and in language teaching methodology.
- 6) The ME teachers' focus on medical knowledge and terminology reveals their view of English as a linguistic tool through which the students learn medical knowledge rather than develop the English language skills needed in future career.
- 7) The teachers question the motives behind offering the ME course and carrying out other language policies in the college and suggest a more practical view of English learning.
- 8) The ME teachers do not have consensus in the objectives and foci of the ME course, the students are found to have vague ideas about why to learn and what to learn from the course, and many medical teachers know little about the ME course. This implies a lack of communication both between the administration and the teachers and also between the teachers and students in the college.
- 9) The ME course is found to be a product of administrative decision-making rather

than a language curriculum developed from the investigation and discussion of the learning needs, learning objectives, teaching materials and teaching methods. For real learning to happen in the ME class, there should be consultation and negotiation between different parties to come out with a consensus in instructional practice.

The students think English is very important for them. But in practice, they are not highly motivated to learn English, as observed in the ME class by the researcher and confirmed by the teachers through interviews. This inconsistency in belief and learning behavior need to be further investigated. In the next subsection, the focus group discussions with different grades of students may provide direct evidence to better understand this problem.

4.5 Findings of the Focus Group Discussions with Students

Seven focus group discussions were held with the students from seven grades. 36 students joined in the discussion and the total length of time spent on these discussions was about 360 minutes. Table 4.25 offers the profile of these students.

Table 4.25: The Profile of Students in Focus Group Discussions

Grade	Sex		Total Number
	Male	Female	
1 st -year	01S1, 01S2, 01S3	01S4, 01S5, 01S6	6
2 nd -year	02S1, 02S2	02S3, 02S4, 02S5	5
3 rd -year	03S1, 03S2, 03S3, 03S4	03S5, 03S6	6
4 th -year	04S1, 04S2, 04S3, 04S4	04S5, 04S6	6
5 th -year	05S1, 05S2	05S3, 05S4, 05S5	5
6 th -year	06S1, 06S2	06S3, 06S4	4
7 th -year	02S1, 02S2, 02S3, 02S4	02S5	4
		Total	36

* The students are coded in this way: "0 + number" indicates their grade; "S" stands for "student", and the number after it reflects how the student is numbered among the students from the same grade. e.g. "01S1" refers to a first-year student numbered first among the six first-year students who joined in the focus group discussion.

4.5.1 English Learning and Use in the Students' School Life

The focus group discussions with the students provide information about English learning and use during the seven years spent in college by the medical students. It can be summarized as follows:

- 1) The first year students take General English as a compulsory course and sit for CET 4. From 2008, the first year students have to take the Medical English course as well.
- 2) The second year students have 10 to 20 hours' training to prepare for CET 6 and sit for CET 6. In 2008, the second year students also took the Medical English course. This is a special case because the second year students had never taken any ME course before the ME course began in 2008 and the college decided that they should take the course too.
- 3) The third year and fourth year students take medical subjects, with the majority of the classes instructed through English PPT and Chinese explanation and very few (e.g. Medical statistics and Medical Physics) use English exclusively.
- 4) The use of English During probation and internship³³ is only found in a few occasions such as reading the manuals of imported medical instruments, using English abbreviations when prescribing, communicating with foreign patients, and discussing diagnoses and treatments with the clinical teachers, the last only takes place when the teacher is good at English.
- 5) The students begin postgraduate study from the fifth year. They may be required by their supervisors to search for materials from foreign databases, read English journals, write literature reviews or abstracts, or, occasionally, translate materials either from English to Chinese or from Chinese to English. But it is found that some supervisors may not have these requirements. So English use in this period

³³ In the Medical College, the four-year students begin probation as they study medical subjects at the same time. And the last year of their study is totally devoted to internship in different departments of the teaching hospitals.

varies from person to person.

- 6) Upon graduation, the students are required to present a short academic report in English and attend at least 40 seminars or lectures, either in Chinese or English. The abstract of their theses should be translated into English.
- 7) The students who want to apply for a job in the affiliated hospitals of the college after graduation should have published article in SCI journals with impact factor larger than 2.0.
- 8) Some students may watch English movies or read English magazines, newspaper or books in their spare time. It depends on the students' interest in English and it is not commonly found among the students.

The English learning and use in the students' school life help to draw a picture of the medical students' English learning needs in medical study. These can be summarized as the needs to:

- ✧ take courses such as the general English course and the ME course,
- ✧ pass examinations such as CET bands 4 and 6,
- ✧ understand some English presentation in the medical subject courses, such as the presentation through Power Point slides (which is very common in the college) and the presentation by the medical subject teachers (which is in much fewer cases)
- ✧ understand some apparatus manuals or English abbreviations in prescription, or, in very few cases, discuss diseases with clinical teachers in English,
- ✧ read English medical literature and write literature review or abstract, and
- ✧ publish English academic articles in SCI journals (for students who wants to work in the affiliated hospitals of the college).

It should be noted that English is not required to be learnt as a subject after the second-year. That means English learning becomes optional for the students. Since then

English use in academic study is not common. The students said that they did pick up some English terms when the teaching PPT is written in English, but they tend to spend much less time on it. During probation, English is occasionally used except the situations mentioned in 4) above. The communication with patients seldom takes place, given that the city where the teaching hospitals are located is a municipal one and communication with foreigners is not common. Of all the students who joined in the discussions, only one (07S2) had the experience of talking to a foreign patient in the hospital. And in normal cases, the clinical teachers have discussions with the interns in Chinese. Only one student (06S4) used to join in the morning-round discussion in English because an Oxford expert was visiting the hospital at the moment.

But when English learning becomes optional, the students appear to be less motivated to learn it. In the focus group discussions, most third- and fourth-year students said they spend little time on English learning after class. Nearly all fifth-, sixth-, and seventh-year students express regret for not carrying on with English learning after the second-year. A fifth-year student says:

After I have passed CET 6, in the third and fourth years, for two years I spare no time for English because there are so many medical subjects. Now I feel regretful... there seems to be some chances to study abroad, but I've forgotten so much....(05S1 in the focus group discussion)

The discontinuity of English learning is followed by a period of sudden need of English in the students' academic study as they begin postgraduate study in the fifth year. Although some supervisors may not have strict requirements for reading of English

publications or writing article, the pressure of doing research draws the students' attention to English learning again. Five out of the nine students of the fifth- and sixth-year expressed their decision to spend more time on English learning.

The students' difficulties in learning English are summarized in Table 4.26. It can be seen that terminology is regarded by more students as the most difficult. Reading is another language skill that has been subjected to complaints. The students at lower levels have difficulty in reading the ME textbooks and the students at upper levels find academic articles difficult to understand. A closer look at the difficulties that concern personal factors indicates that they all have to do with learning strategies and learning planning. In particular, the students at lower levels talk more about how they are confused with what to learn and how to learn when they enter the university.

We've got used to the cramming way of learning in the secondary school. The teacher told us what to do and we just did it and passed the exams. But when we are in the university, we are relaxed. So relaxed... cause we listen to the class and there is no homework for us to do. The teacher doesn't give us homework. And there are so many activities on the campus. We've got so many things to do, so we join in other activities. (03S3 in the focus group discussion)



Table 4.26: The Students' Difficulties in English Learning

Difficulty concerning language skills	◇ There are too many terms to memorize. (6)
	◇ The medical English textbook is difficult to understand. (3)
	◇ The academic articles are difficult to understand and they read very slowly. (3)
	◇ It is difficult to improve listening ability. (1)
Difficulty concerning language use	◇ They have few opportunities in their lives to use English and thus easily forget what they learn. (4)
Difficulty concerning personal factors	◇ They do not have good skills to learn English. (4)
	◇ They do not have their own plans for English learning. (4)
	◇ They do not have the persistence to learn English. (3)
	◇ They do not have enough time to learn English. (3)
Difficulty concerning medical knowledge	◇ It is difficult to comprehend the medical knowledge in English. (4)

* The figure in the bracket is the number of times the difficulty is stated.

The students at upper levels find themselves easily yielding to the busy schedule of medical subject learning and can not persist with English learning when there is no English course at all. A fifth-year student's talk suggests another possible reason for not being able to persist: the lack of proper learning skills.

The difficulty is we are not perseverant. We may learn English in this way today. But tomorrow we try another method. The problem is ... at last, you do not persist. You don't have your own way. You don't know which method suit you best. ... It's just like ...you want to move something but you don't have the power to do it. (05S1 in the focus group discussion)

It can be seen that although the students at different learning levels may have different difficulties in learning English, an important solution to these problem is the teacher's guidance. Some students express their hope to be taught how to plan their study when first entering the university; some think they need to be well-informed of the learning objectives. Most importantly, they are not trained to adjust themselves to the university

life with proper strategies of study planning and independent learning.

4.5.2 The Students' Attitudinal Change in English Learning

The focus group discussions indicate a pattern of attitudinal change in the students' understanding of their English learning needs. Although its importance is commonly recognized, learning of English appears to be externally motivated (as required by the college to pass exams) among the students of elementary level to locally motivated (as desired by the students themselves to pursue career development) among students of higher levels.

When asked why they had to learn English in the past, almost all students said they were “forced” or “pushed” to learn because of examinations. In the secondary school, they learnt English mainly to pass the university entrance examination, and in the first and second year of the university, they learn to pass CET bands 4 and 6. This examination-driven attitude leads to low interest in English learning among many students in the first and second year. A second-year student told the researcher why he thought the ME course was not useful for him:

There are many things that are introduced to us. But we have very vague ideas. For example, the teacher always says: “You should have learnt this.” But I don't think we need to learn it. First, it cannot help us to pass CET 4 because CET 4 doesn't test the medical terms. (02S3 in the focus group discussion)

The students at the elementary level (the first- and second-year students) also appear to have vague ideas of what they may need English for in the future. A few of them said

they might need to read English journals or communicate with foreigners. They are aware that a lot of medical literature is published in English. But when it comes to more details about English use in their future career, they do not have a clear idea, as revealed by the following excerpt.

I think it [English] might be important, but I don't know how important it will be. ...We're taking a lot of courses, all for the exams. I know they are all important. ... English is just one of the courses. For the moment, it is just a course. (02S5 in the focus group discussion)

The students at the intermediate level (third- and fourth-year) appear to become more and more resistant towards learning English. At this learning level, English is no longer required as a compulsory course. Many students think their focus of study is on medical subjects rather than English. The students' resistant attitude towards learning English can be confirmed in the following excerpts.

If I can make my own choice, I would rather not learn it [English]. (03S1 in the focus group discussion)

Some subject courses are very difficult to understand. But the college wants us to learn in English. Whenever it is in English, I become sleepy. I just do not want to listen. (03S6 in the focus group discussion)

Whenever the teacher speaks in English, some of us would yell: Chinese please! Sometimes the teacher has to switch to Chinese because we appear to dislike English so much. (05S2 in the focus group discussion)

The students at the higher level display a clear and realistic view of English learning. During probation or internship, the importance of English learning is confirmed through

more exposure to English use. One seventh-year student (07S2) said he was very embarrassed when the clinical teacher asked him some English abbreviations and he did not know how to answer. Another seventh-year student talked about how his English proficiency helped to save a patient:

I had probation in a local hospital in the summer holiday. Once the director of the department was saving a patient with a electrocardiograph imported from Germany. It was all in English and he didn't understand. I taught him because I could understand the English on the machine. From then on the director was very good to me. So I think sometimes English is very useful. (07S1 in the focus group discussion)

The exposure to the real working contexts also helps to establish a more realistic view of English. The students seem to have their own ideas of learning English, in sharp contrast to those who claimed to be forced to learn English at lower levels.

When we were in the primary school and secondary school, we were told English was very important and we should learn it well to have more chances for our development. And now we really see the imminent needs to learn English.... When first entering university, we didn't focus on English learning because it was not our major. We have to be practical. We major in clinical medicine. Then when we have to publish articles in English before graduation we really feel the needs to learn it well. (07S3 in the focus group discussion)

A sixth-year student expresses a similar view matching the ideas expressed by some teachers interviewed as the student observed that personal orientation in career development decides what is important for the students.

I think whether English is important or not depends on the students' career planning.

Some may not use English in the future if they don't want to develop their career. If they want to settle down in some small hospitals in the counties, there are much less chances to use English. But if they want to work in bigger hospitals, say, the municipal ones, then they may really need English. (06S2 in the focus group discussion)

These students' practical view of English learning helps to explain a finding from the questionnaire survey. In fact the seventh-year students regard some language sub-skills (40% of the 30 language sub-skills listed in the questionnaire, see Table 4.17) as very important, which all have to do with academic study. The seventh-year students are much clearer than students at lower levels about the use of English in their studies and career development. But at the same time, there seems to be a conflict between what is found with the elementary level students in the focus group discussions and what is found in the questionnaire survey. In the questionnaire survey, the elementary students seem to be more enthusiastic about English learning and selected as many as 70% and 60% of language sub-skills that they think are very important. This seeming conflict confirms the discussion about the elementary students' understanding of learning English (See Section 4.2.2.2). Although they know the importance of English learning, they have vague ideas about in what ways they will need English in their future career, leading to the selection of some language skills that may not be important.

The students' attitudinal changes in learning English also explain why the students at the elementary level and intermediate level appear to have less intrinsic motives and more extrinsic motives to learn English than the students at the higher levels, as discussed in 4.2.1.1. At the same time, these developmental views reveal the importance of exposing

the students to more English use in their study as well as daily life and help them establish a clearer view of English use in their future as early as possible. In the focus group discussions, when asked where they get the information about English learning, some students said it was from senior students, and some said it was from their supervisors. The second-hand information does give the students some ideas about the use of English, but direct contact with English speaking contexts is much more helpful. Some incidental events enlighten the students and impress them deeply about the usefulness of English. For instance, a third-year student (03S3) talked about her experience of coming across a foreigner and helping with shopping in Wal-Mart. The student said he began to think English was useful from then on. In another case, a seventh-year student (07S2) treated a foreigner who was very interested in football. The student talked with the foreign patient and realized the importance of oral English.

4.5.3 The Students' Views of the ME Course

The focus group discussions imply a common misunderstanding of the ME course objectives among the students who are taking or have taken the course. Most of them think the ME course aims at teaching medical knowledge or terms in English because they get the message from their ME teachers that the course is for teaching medical terms. But the discussions indicate that about half of the students think the course should also focus on English skills, a similar result from the questionnaire survey. Without adequate medical knowledge, the medical terms are learnt by rote and forgotten very soon, which causes the students great anxiety and frustration. A student (02S2) tells the

researcher she almost cries whenever she thinks of the terms that will be tested in the final exam.

When asked what they expect to learn from the ME course, many students express their hope to learn English in use. They are more interested in how English will be used in different situations and practice more rather than rote memorization of terms, as indicated from the following excerpt. The interviews with the ME teachers show that several teachers do show concerns about how to organize class activities for the students to use the terms and knowledge (see the summary in Table 4.24), but they are not able to draw the students' attention to the linguistic aspects due to their educational background, as discussed in 4.4.4. Juxtaposed together with data from different sources, the focus group discussions confirm the previous conclusion that the students' desires to learn more for English language skills are not satisfied in the ME course.

If we know how it is used in this situation and how it can be used in another situation, then we get to know its usage more clearly. But, the problem is that we listen to the teacher inside the class, and we try to memorize it after class. We learn by memorizing. Just memorizing. (01S6 in the focus group discussion)

In the focus group discussion with students at higher levels, the researcher had shown the ME textbook to them and asked for their opinions. They seemed very interested in the textbook and thought it would be good for them to use the textbook at their stage of study. Two students said that the best time to attend the ME course is the first and the second year, while the others think it should be run throughout seven years with different focus in different stages of medical study. They suggest teaching basic terms, basic

medical knowledge, and the skills to read and write medical records such as case reports in the first three years. In the last four years, the skills to read more difficult materials such as medical textbooks and research articles and to write research articles will be the focus. A fifth-year student thinks running a continuous ME course throughout the 7-year medical study can raise the students' awareness of the importance of the course as the following quote shows:

I think medical English should begin from the first year, and it should be included as part of the overall curriculum. We will know that the course is not a separate one, but a part of the medical subject learning. And we will realize that it is important. (O5S4 in the focus group discussion)

The students' views of the ME course provide more perspectives to evaluate the ME course. Combined with evidence from other sources, these views help to display a group of learners studying with confused objectives, inhibited desires and unsatisfied expectations in a context where there is a lack of communication between teachers and students.

4.5.4 Summary of Focus Group Discussions

The focus group discussions with different grades of medical students provide information about the students' English learning needs from the students' perspective. The learning needs in the college context that are identified by the students are similar to those identified by the teachers. These needs include the needs to learn English as a school subject and pass examinations, the needs to learn some medical knowledge in

English, and the needs to present reports, read English literature and write reviews. The learning needs in the workplace, that is, the hospitals, will be checked against the opinions of another group of subjects, namely medical doctors, in the next subsection.

The focus group discussions indicate a pattern of attitudinal changes in the students' understanding of their English learning needs from elementary to intermediate and high levels. Although its importance is commonly recognized, English learning appears to be externally motivated among the students of elementary level and locally motivated among students of higher level. The students at elementary level tend to believe they are forced to learn English and getting a pass in English related examinations is regarded by them as the biggest learning need. They have only vague ideas of what exactly they need English for in the future. The students at the intermediate levels do not have to take English courses and become less motivated to learn English. Some of them even resist using English in their studies. But as they advance into postgraduate study and have probation and internship in hospitals, they have a clearer and more realistic view of learning and use of English in their future careers, hence more motivated to learn English again. These attitudinal changes towards English learning have two implications:

- 1) It is important to take a developmental view of the medical students' English learning needs in needs analysis. In so doing the students' English learning needs can be contextualized and their existing conditions of learning can be acknowledged. This is the first step towards a critical needs analysis with its ultimate aim of searching for possible areas of change towards greater equality for learners (Benesch, 1993 & 1996).
- 2) The ME course should be redesigned to cater for the students' English learning

needs at different learning levels. The exposure to English use in different stages of medical learning will help the students to develop a comprehensive view of English learning and make better use of the school time invested in English learning.

4.6 Findings of the Retrospective Interviews with Medical Doctors

Data from the retrospective interviews with the seven medical doctors provide information regarding the doctor's workplace activities and the roles English plays in their routine work and daily life.

Table 4.27: The Profile of the Medical Doctors Interviewed

Doctor	Age	Department	Educational Level
D1	38	Pharmacy	Master
D2	34	General Surgery	Master
D3	39	Pediatrician	Master
D4	43	Cardiovascular Medicine	PhD
D5	39	General Surgery	PhD
D6	40	Orthopaedics	PhD
D7	29	Nutrition	Master

4.6.1 English Use in the Doctors' Workplace Activities

A doctor's workplace activities in the investigated context can be summarized as follows:

- 1) **Handing-over:** It usually takes place at 8:00 am and 6:00 pm, the beginning and the end of a day's work. The doctors hand over the cases to the one(s) in the next shift. It normally takes about half an hour and is done in Putonghua.
- 2) **Morning-round and night-round:** It is an important part of the job in the morning or in the evening for all resident doctors and interns in shifts, during which they examine inpatients and discuss the latest development and treatment

of the diseases. Most of the time, the language used is Putonghua. In very few cases, clinical teacher may ask interns, especially those in postgraduate study, to discuss in English. But this depends on the teacher's proficiency of English.

- 3) **Writing advice:** The doctor writes advice for the patients she/he is in charge of. The advice is in Putonghua, and in very few cases, English abbreviations are used.
- 4) **Communicating with patients and their family:** The doctor explains the patients' conditions or operation procedures to the patients and their family, or give suggestions to the patients who are about to be discharged. The language used is Putonghua or Swatowese, the local dialect.
- 5) **Writing case histories:** The doctor writes case histories in Chinese. English is occasionally used, especially some English abbreviation for diseases and treatments.
- 6) **Examining and treating outpatients:** Patients from the outpatient department may come to be diagnosed. The number of outpatients varies from day to day. The language used is also Putonghua or Swatowese, the local dialect.
- 7) **Group consultation:** Doctors in different departments gather together to diagnose patients in serious situations. The language used is also Putonghua or Swatowese. The time spent on group consultation also varies from day to day. In some days, there is no group consultation at all.
- 8) **Operation:** Surgeons or doctors in cardiovascular department may operate on patients or conduct some clinical treatment such as redressing incisions or removing thoracic or pericardial effusion. Normally Putonghua is used. But occasionally the doctors and nurses may use some English words during the operation, especially to refer to some appliances.
- 9) **Academic discussions:** Doctors who have research projects or are clinical teachers of the medical college discuss research progress, read or search for literature with other doctors, interns and postgraduates. They usually prepare English slides and talk or discuss in Putonghua.

Activities 1) to 5) are the routine ones that take place everyday. Activity 6) to 9) do not take place everyday but are regular ones and the workload varies from day to day. In these activities, the languages in use are Putonghua or Swatowese, the local dialect. English is occasionally used. Workplace activities that are relevant to English use are summarized as follows:

- 1) English abbreviations or terms may be used in writing advice or case histories. For example, “Tab” for “tablet”, “Cap” for “capsule”, and “CAD” for “coronary heart disease”.
- 2) Occasionally, the doctors may use some English terms to exchange ideas during diagnosis or treatment because they have used them habitually. For example, a surgeon may use “sucking tube” or “Brown Frame” during an operation.
- 3) Sometimes the doctors may read instructions of medicine or apparatus that are imported from abroad. They refer to dictionary when there are difficult words. But if they have used the apparatus regularly, they get to know the English terms on the apparatus very well. For example, “HR” on a electrocardiograph monitor means “heart rate”.
- 4) In very few cases, the clinical teachers may discuss diagnosis and treatment with interns and their students in English. This depends on the English proficiency of the clinical teachers. Incomplete sentences and code-mixing are common in these discussions. One of the doctors told me of a morning-round that was done in English because some foreign medical experts visited the hospital and she was designated to do the job because she could speak English more fluently than the other doctors.
- 5) Communication with foreign patients rarely takes place. Of the seven doctors being interviewed, only two had the experience. In all the cases, the patients came with interpreters so the doctors did not have to speak a lot of English.

When asked if their routine jobs were influenced by their proficiency of English, all

doctors provided negative answer. A doctor's answer can be used to show the role English play in their workplace activities.

We use little English in our routine job because the patients our hospital serves are mostly locals. We have very few foreign patients here. I don't think that my job was influenced by low English proficiency because we don't have the atmosphere of using English here, unlike Beijing and Shanghai, those big cities. I used to take part in conference or do research there. People there have the initiative to learn English. (D5 in the retrospective interview)

4.6.2 English Use in the Doctors' Career development

Although a very small part of their workplace performance is influenced by English proficiency, it is found that the doctors' career development is closely related with their English proficiency. The following list tells what English has to do with the doctor's career development:

- 1) To be promoted in their professional titles, the doctors have to pass a national English examination called Positional Title English Examination organized by the Ministry of Personnel.
- 2) To be promoted in their professional titles, the doctors have to apply for research projects and publish research articles. Six out of the seven doctors mentioned the importance of reading medical literature in English and publish English articles. English articles are important evidence of their research capabilities.
- 3) For the doctors who are pursuing higher degrees, English learning is very important. Those who are undertaking doctoral study in the medical college have to publish a SCI article with impact factor larger than 2.0 to be awarded the doctoral degree, according to the college's new policy on postgraduates. Moreover, as doctoral students, they have to attend seminars delivered by

foreign experts, which are regularly held in the college now. They also attend academic discussions that are held among the fellow students. In these discussions, they often write English Power Point slides but present in Chinese.

- 4) Some doctors in the affiliated hospital also work as clinical teachers in the medical college, where they teach clinical subjects to the medical students. Of the seven that were interviewed, two have this extra work, which is accounted as part of their workload and can add to their qualifications of getting promoted. A doctor told me she was very lucky because she taught both paediatrics and medical English and didn't have to worry about the teaching workload. Teaching in the college means having to prepare teaching Power Point slides in English, so English is also important for these doctors.
- 5) The doctors may have opportunities to attend conferences in the other cities. Usually the working language is Chinese. In very few cases, English is also used if the conferences are international ones. In this case, the doctors with better English proficiency can enjoy the priority to participate.

It is found that, to help with career development, English writing skills and reading skills are very important for the doctors, while speaking and listening come in second, given that not all of them have to take part in academic activities in English. Writing is claimed to be the most difficult skill and demands more training. Dr. Dong, who is engaged in doctoral study, said writing English article was "a headache" for him. He thought the biggest difficulty was choices of word.

Reading is difficult at the beginning. But once you have read a lot, you get to know the words in the field and it becomes easier. But Writing is more difficult. Once I tried to choose a word to describe the cleavage of a swollen bone. I spent quite some time thinking about which word to use. Mediqte, inside, or interior? Finally, I used "inner", the "inner barrier" of the cleaved bone. I spent a lot of time on this word,

just for this word. (D6 in the interview)

The doctors seldom have other English writing except writing research articles. But for doctors actively involved in research, English writing also includes writing letters or emails in English. Dr. Dong talked about his experience of correspondence with foreign researchers. Once he wrote to an author, asking about the experimental method the author introduced in an article. In the other cases, he needed some lyophilized antibody for his experiment but could not get it in China. He wrote to a researcher in New York University and the researcher sent the antibody to him very promptly. English use in academic communication has greatly enhance his research potentials and has created a much wider space for career development.

4.6.3 English Use in the Doctors' Daily Lives

All the doctors being interviewed spend some time watching English TV programs or videos. Three of them show great interest in English songs. The doctor who also teaches medical English listened to English songs everyday on her way to work. Another doctor who had just obtained a Master's degree in the UK said she corresponded with her classmates regularly in English, either through emails or MSN Messenger. Although English use is not common in their daily lives, they seem to enjoy the spiritual space that English has created for them.

4.6.4 Summary of Doctor Interviews

To summarize, the doctor's workplace activities have little to do with English use, but

English is very important in their career development in terms of promotion, further study and academic research. Writing and reading skills are more important than the other skills in helping them succeed as medical professionals. In their daily lives, English use is also minimal but it brings about relaxation and broadens their views.

The findings from the interviews and focus group discussions with different subjects provide an emic perspective on English learning in the investigated context. But the inevitable limitations of these research methods, such as being mainly self-reported data, require further triangulation with findings from other sources and methods. The conclusions that are drawn from needs analysis based on the results of triangulation will be presented in the next section.

4.7 Conclusions

This chapter has introduced the investigation results of medical students' English learning needs from five sources: (1) the questionnaire survey, (2) the classroom observations, (3) the interviews with the teachers, (4) the focus group discussions with the students, and (5) the interviews with medical doctors. The questionnaire survey provides some basic ideas about English learning among both the students and the teachers. Classroom observations offer access to closely observing the teaching and learning behaviours in the ME class. The interviews with the teachers and medical doctors and the focus group discussions with the students inquire into the feelings and opinions of the social actors in different contexts, displaying an all-sided description of

the medical students' English learning needs in school and workplaces as perceived by different parties. The research question posed at the beginning of this chapter can be answered as follows.

4.7.1 The Medical Students' English Learning Needs: a Longitudinal Picture

The medical students' English learning needs can be presented longitudinally from their current medical studies to the future career development. Their English learning needs in the medical studies are summarized as the needs to:

- ◇ take English courses and pass English examinations
- ◇ learn some medical knowledge in English
- ◇ use some English terms in prescriptions or medical records or to communicate with patients and clinical teachers in English in very few cases
- ◇ read English literature and write reviews or research articles

The majority of the medical students will work as medical doctors, their English learning needs will be to:

- ◇ use some English terms in prescription, medical records or operations
- ◇ communicate in English, either with interns or foreign patients, in very few cases
- ◇ read English medical literature and write articles

Some students may pursue higher degrees and work as teachers and researchers in university. Their English learning needs will be to:

- ◇ read English materials and write teaching slides in English
- ◇ read English medical literature and write articles
- ◇ take part in some academic activities such as conferences or seminars which

use English as the working language

4.7.2 The Medical Students' English Learning Needs: a Multi-dimensional Picture

The medical students' English learning needs are also presented from different perspectives, reflecting the opinions of different social actors in different contexts. The medical students at different learning levels all think English learning is very important for them, but their understanding of the English learning needs change as they are exposed to different use of English in their academic lives. The medical students at the elementary level think their biggest English learning need is to pass examinations. They are not very clear about what they need English for the future career is not seen and there was a feeling of being forced to learn English by the college. The students at the intermediate level don't have to take English as a course and only identify the needs to learn some medical knowledge in English, but they appear to be more resistant to English use in the learning of medical subjects. The students at the higher level come to realize the use of English in their academic studies and career development and are more internally motivated to learn English. They recognize English learning needs as the needs to present reports, read medical literature and write articles.

Overall, the teachers of the medical college attach great importance to English and they have very comprehensive understanding of the medical students' English learning needs, since most of them have gone through the same education system and have learnt English in a similar way. They identify the medical students' English learning needs from three perspectives: practically the students need to learn English well to obtain

degrees and good jobs; academically they need to achieve a higher level of English abilities so as to develop as medical professionals; utilitarianly they need to exhibit better English proficiency to compete in the workplace. Terminology, reading and listening skills are regarded as most important by the teachers.

Most of the teachers interviewed seem to hold a pragmatic view of the importance of English learning and implementing language policies that suit the students best according to the real needs in the Chinese contexts and the students' personal desires. Among the three groups of teachers, namely the medical English teachers, the medical subject teachers and the teachers who also take administrative posts, the medical subject teachers are found to be most practical about English learning in the college. With the extra job of teaching medical English, the ME teachers are involved in more English use. And the administrative group seems to be more positive towards English learning. In particular, the vice-dean of the college stresses the importance of pushing the students to learn English despite the fact that the students are not highly motivated.

The medical doctors seldom use English in the workplace and have more imminent needs to use English in research. They identify reading and writing skills as the most important ones because they need to read English literature and write articles.

It is also found that most teachers and medical doctors use English in their daily lives for entertainment or communication with the outside world. English is used to create a wider space in their lives.

4.7.3 The Medical English course: Satisfied and Dissatisfied English Learning Needs

The ME course is considered by both the students and the teachers to be responsible for teaching the language skills that are most important for medical students and satisfy their English learning needs. The investigation results indicate that some of the learning needs are satisfied, while some are not.

◆ Satisfied English learning needs:

- ◇ The students' desire to learn medical knowledge and terms have been satisfied as classroom observations reveal that the instruction of medical terms and knowledge constitute the most important part of the ME class.

◆ Unsatisfied English learning needs:

- ◇ The students would like to have more opportunities to use English and be introduced to specific situations of English use. The ME course fails to include language use as an important part of its teaching content and the ME teachers are found to be incapable or unconfident of teaching language use.
- ◇ The students would like to have more language skills training. Students at different learning levels have different needs in language skills. The ME course should help the students to develop the language skills according to their learning levels.
- ◇ The students lack independent learning strategies. By establishing a proper attitude towards English learning and developing proper learning strategies, the ME course can help the students to become more independent English learners and use English as a tool for life-long autonomous learning.

There is a lot of controversy over the ME course in terms of its course schedule and

objectives. It is found that it is actually a product of administrative policy rather than a product of curriculum development which involves a series of activities that contribute to the growth of consensus among the staff, administration, and students (Brown, 1995). The ME course reflects the overwhelming institutional desires to improve reputation and achieve quick success. There is a lack of common vision among the teachers, a lack of continuity in ME curriculum planning, and insufficient teacher preparation. For the ME course to really benefit all students, it should involve more communication and negotiation among the teachers and students and come out with the instructional practice that can help the students to use English as a tool not only for cultivating new academic identities to survive the modern competition but also for achieving larger space for career development in the current climate of globalization. In the next chapter, the results of the medical students' English learning needs will be subject to critical analysis, in which different perceptions of English learning needs described here will be questioned and analyzed. I will show how the contradictions that arise from the multi-voicedness of the ME course did become the source of innovation for the present research.

Chapter 5: Analyzing the English Learning Needs

You want to know why we learn English? The college will like it if we are good at English. Besides, if we can be selected into the English Immersion Class, we can get a lot of benefits. Then, why not learn English well? Learning English has become a means to get benefits and is not what it originally was. Teacher, we used to like English, but we are disappointed now. ---- 07036's answer in the English learning questionnaire survey

Introduction

This chapter conducts critical analysis of the investigation results of the English learning needs of the medical students, from the perspective of Activity Theory, with the attempt to answer the second research question:

- ◆ **What contradictions, if any, are revealed through critical analysis of the English learning needs?**

The critical analysis is conducted in three steps in this chapter. Firstly, the needs analysis is done on the basis of the activities of English learning and usage that the medical students in the investigated context have to perform. Then, the contradictions in the activity system of ME learning are identified at four levels, as the source for potential changes and innovation. Finally, genre-based pedagogy is offered as a new mediating tool with the intent to resolve the contradictions in the activity system of the ME class and to transform it, so that it can meet the needs of the students better. The first two steps help to provide answers to this research question. The third step, the formulation of genre-based pedagogy as a new

mediating tool in the ME activity system, though not directly related to the research question, serves as the transition from seeking answers to the second research question to seeking answers to the third research question by establishing the place of genre-based pedagogy in the present research. It is therefore discussed in this chapter.

5.1 Activity-based Analysis of the Medical Students' English Learning Needs

In this subsection, the advantages of activity-based needs analysis are discussed as learning activity is conceptualized as a collective learning system in Activity Theory. The medical students' English learning needs are then displayed as a series of activities they have to perform at school and in the workplace. A developmental track of the students' perceptions of English learning needs is revealed, and the interaction of different perceptions of English learning needs in the activity system of the ME course is discussed.

5.1.1 Activity-based Needs Analysis

In section 2.3.3, activity is suggested as the unit of analysis in needs analysis instead of text or task. The disadvantages of text-based needs analysis is that it always results in lists of de-contextualized structural items and provides scant information on how, or to what ends, the structures are used in the target domain (Long, 2005). Although task-based needs analysis is a great improvement from text-based needs analysis, with more contextualized structural items revealing more about the dynamic qualities

of target discourse (Long, 2005), its focus of analysis is still confined to individual action of learning and therefore fails to study learning as occurring from socially-mediated collaborative processes (Vygotsky, 1978). In addition, task-based needs analysis does not hold the critical stance that can provide insights into the power relationship of curriculum development, nor does it aim at considering the target situation as a site of possible reform, helping learners to become potentially active participants and change agents

Activity-based needs analysis draws on the conceptualization of activity within the Activity Theory, and expands the unit of analysis from the tasks, or job descriptions, to the activities that learners will be involved with in the community of practice, integrating individual actions with collective activities of the community of practice. According to Activity Theory, learning activity is conceptualized as undertaken by learners (subject), who are mediated by tools such as learning materials and methods and are motivated to fulfill the learning needs (object) in a community that is operated through the division of labour and rules. And the different perceptions of learning needs are regarded as representation of the multi-voicedness and multi-perspectives of the activity system, deriving from multiple points of view, traditions and interests of a community. The conceptualization of learning activity is presented as a model of the collective learning system in Figure 5.1.

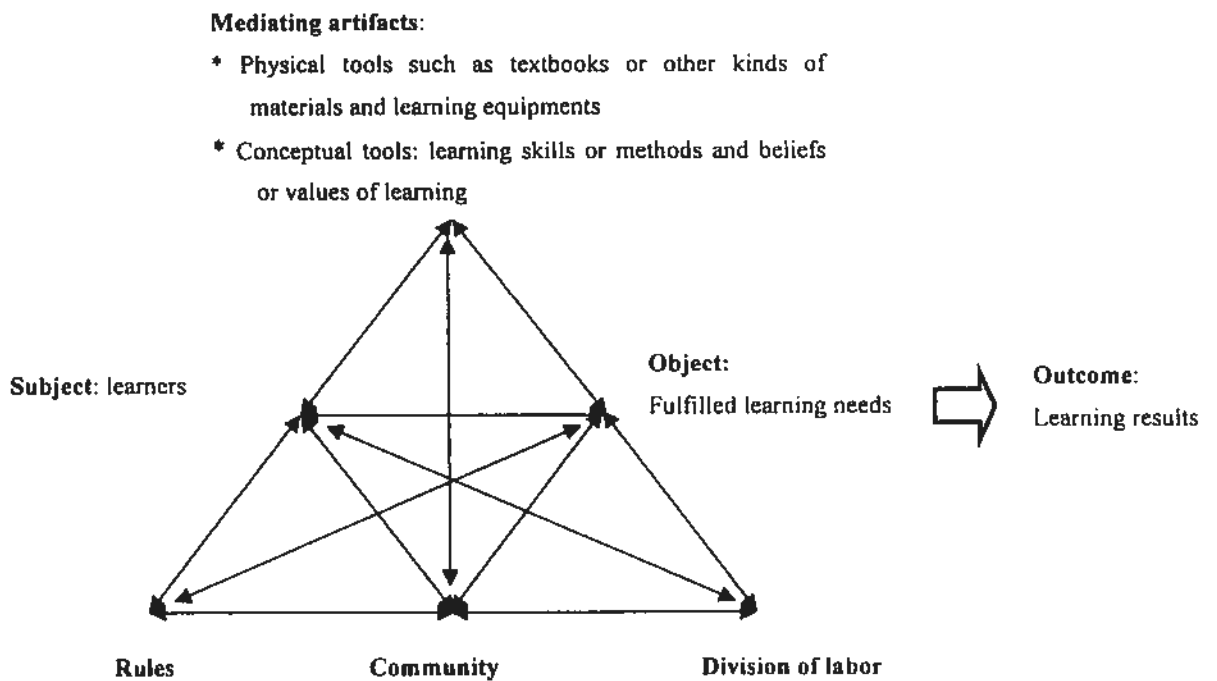


Figure 5.1: The Learning Activity System

Activity-based needs analysis will be able to link individual learner's learning actions to a collective learning system, in which the object of activity, namely, the learning needs, are perceived by different parties. Some learning needs are realized and fulfilled, and some are ignored or even inhibited in the power-relations regulated by rules, conventions and division of labor. Activity-based needs analysis adopts the critical stance to analyze the interaction of these components in the learning activity and the generation of contradictions, which is the source of innovation. It therefore provides the base for the first step in critical needs analysis: to analyze the interrelation in the learning activity system, and to identify the possible inequality.

5.1.2 The Medical Students' English Learning Needs as Displayed in Activities

Based on the data collected from different sources and methods (as introduced in

Chapter 4), the English learning needs of the medical students in the investigated context can be summarized by the activities they have to perform as students and professionals.

- ◆ **Course/exam-taking activities:** The students are required to take a general English or medical English course, and pass the course exams. They also have to pass CET 4 and 6 in order to graduate.
- ◆ **Subject-learning activities:** The students read English Power Point slides in almost all subject courses, and listen to English explanations, in a few subject courses. The students in the English Immersion Class may have to pass the United States Medical Licensing Examinations.
- ◆ **Academic activities:** The students, as suggested by their supervisors, search an English database, read medical journals published in English, and write reviews, abstracts, and sometimes articles, in English. They may attend English seminars, which are held from time-to-time at the College. It is also stipulated that they have to present an English academic report before graduation.
- ◆ **Workplace activities:** Normally, the students use some English abbreviations and terms in prescriptions and medical records. In only a few occasions, they may have to read manuals of medical instruments, discuss diseases and treatments in English with their clinical teachers, or communicate with foreign patients.
- ◆ **Professional activities:** After graduation, if the students stay in municipal hospitals, or want to pursue a doctoral degree, or work in the university as teachers and researchers, they will have to read a lot of literature, and write academic articles in English. Publishing SCI articles may be compulsory in some working contexts. Those studying or working in the university may have more opportunities to attend academic activities that are carried out in English, such as seminars and international conferences. Some of them, if

more active in research, may maintain academic contact with foreign scholars through phone calls, emails or video tools on the Internet.

- ◆ **Daily-life activities:** Most of the students spend only a little time after class learning or using English. If they do, they may read English newspapers or books, surf the Internet, watch English videos, or listen to English songs. Some medical teachers and doctors are also involved in these regular uses of English in their daily lives, and a few of them keep contact with friends through emails or MSN Messenger in English, implying a similar role of English in the students' future life as medical professionals.

Analyzed from the perspective of Activity Theory, it will be found that these activities take place in different activity systems that have different English learning needs as their objects. The changes in objects lead to changes in other components of the activity systems and contribute to different results in terms of English learning.

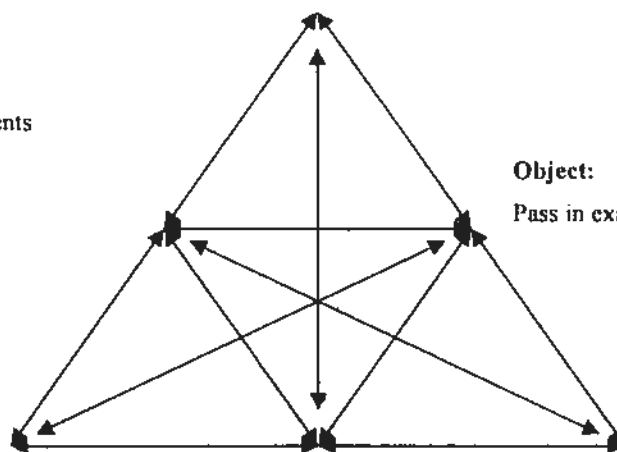
In course/exam-taking activities and subject learning activities (see Figure 5.2), most of the learners (subject) are extrinsically motivated to learn English. English is viewed in the community of the Medical College as an *examination* tool to pass exams and get credits (object). The requirements of the college to take courses and pass examinations (rules) are imposed on the learners and they are always relegated to an unequal position because they have to follow all the arrangements passively while the college controls everything in the curriculum design (division of labour). Other conceptual tools, such as the attitudes towards English learning (reluctance and the feeling of being "forced" to learn), and learning strategies (memorizing vocabulary and doing model tests), contribute to the limited outcome of these activities in that they forget the vocabulary quickly and are poor in language use after

they have passed the exams.

Mediating artifacts:

- * Physical tools (textbooks, classroom setting, language labs, multi-media equipments, software etc.)
- * Conceptual tools: **English as an examination tool**
Learning skills (memorizing vocabulary and grammatical rules, doing model tests)

Subject: The medical students



Object:
Pass in exams

Outcome:
Poor abilities of
language use

Rules:

- Requirements to pass exams
- Requirements to take compulsory English courses

Community:

The medical college

Division of labor:

- The college prescribes syllabi, textbooks, and schedules, timetables etc.
- The students follow all the arrangements, not being told the objectives of the English course, not having been consulted about the course

The Learning Activity System of Using Engl

In academic activities, workplace activities and professional activities (see Figure 5.3) that take place in a bigger community, namely, in the colleges and hospitals, or other future workplaces, the students become more intrinsically motivated, as they gradually realize that English is an important *linguistic* tool to obtain good employment and achieve professional development. The requirements imposed by the college and expected by future employers to develop a certain level of English competence force the students to modify their object of learning, that is, to really improve their proficiency in English rather than just a focus on passing examinations.

The students enjoy more autonomy in English learning since their prosperity will depend on their personal efforts to win the opportunities offered by the college to study or get employment. The change of object lead to changes in other conceptual tools such as the attitude towards English learning and learning strategies in that they feel like, or even enjoy, learning English, and they learn English more independently through videos, practice pronunciation and oral skills, or by reading academic journals. The outcome is better English proficiency, a higher awareness of language learning and a more pragmatic view of English use.

Mediating artifacts:

- * Physical tools (books, multi-media, software, Internet etc.)
- * Conceptual tools: **English as a linguistic tool**
Learning skills (learn through contextual language use, e.g. video watching, Internet surfing, materials reading)

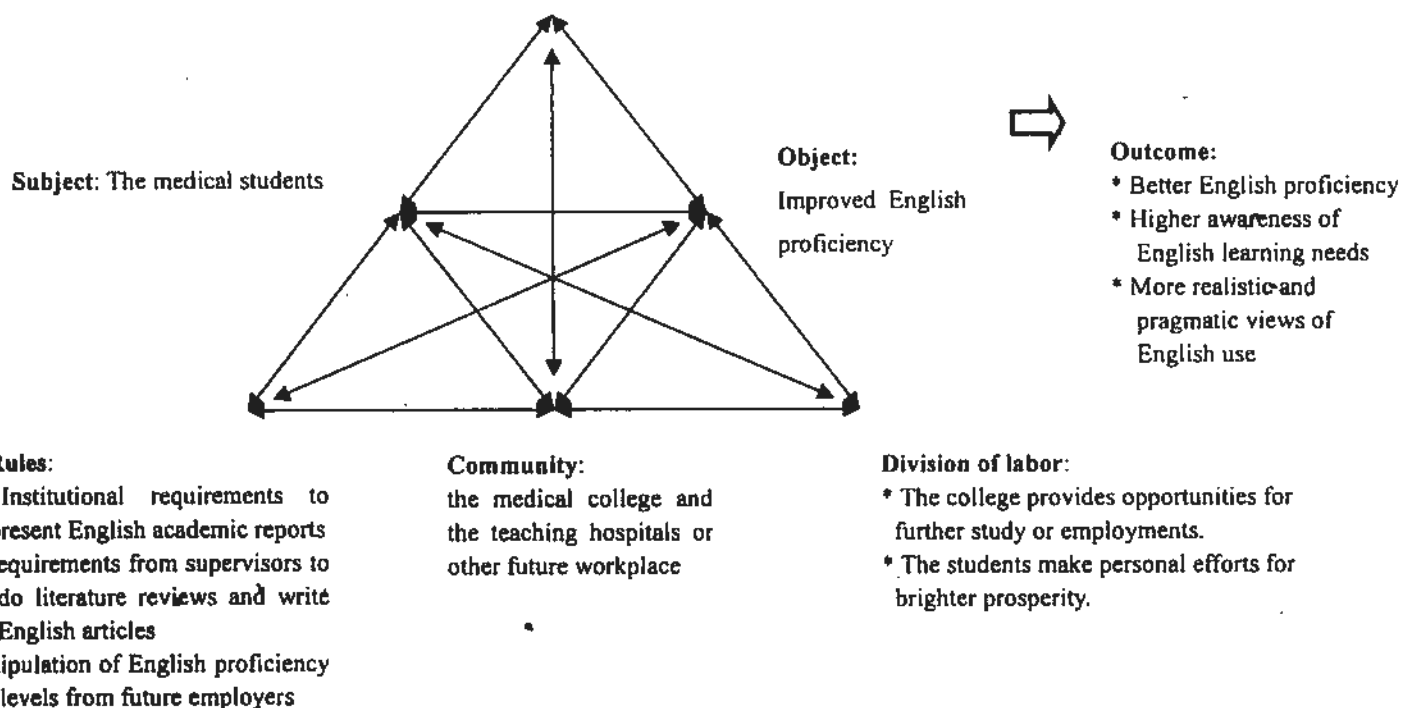


Figure 5.3: The Learning Activity System of Using English as a Linguistic Tool

The following excerpt can best illuminate how the students switch from the learning

activity system of using English as an examination tool to that of using English as a linguistic tool.

I was ignorant before. We began to learn English in the primary school, just for examinations. We did what the teachers wanted us to do and didn't know why. Then, when we first entered the university and had to take the English course again, I was actually resistant to learning English. But I had to learn because of the pressure from the college. We had to pass CET 4 and 6 in the first two years. After that, we were so much without direction that we seldom learnt English in the third year. I even found it difficult to speak English. Recently, I have more contact with some senior students and know how they publish articles. So I feel it very important to learn English well. But this importance is different from the importance to pass exams. Once I picked up a book on CET vocabulary, but I find it useless for my study now, because what we need is academic English that can help us master the special knowledge. (04S3 in the focus group discussion)

To a certain extent, English has become a *communicative tool* or even a *cultural tool* for some students and teachers, in some academic activities and daily-life activities (see Figure 5.4). The activities take place in a much larger community, and there are no more requirements as for what and when to learn English. The learners are free to decide on their own career development, as well as their preferred way of life. The object of learning English is communication, relaxation and enjoyment. And the learning outcome is a bigger space of communication with the outside world and the enrichment of personal life. For example, one fifth-year student told the researcher his new feeling about English.

04S2: Recently I began to read English. Sometimes when I was reading, I felt the

beauty of the sentences. It is... The choice of words that is wonderful. This is how I feel when I'm reading Chinese literature.

Researcher: Are you reading academic articles or something ordinary?

04S2: Some are academic articles, some are ordinary essays. But I get that feeling only when reading the ordinary ones. Some words are used very felicitously. The feeling is so good, just as I am reading classical Chinese literature. Some English expressions are very interesting.

(Excerpt from the focus group discussion with the fifth-year students)

A medical teacher (T15), who claimed that 10% of the time he spent on English was used in watching English videos, he talked about his great interest in English videos as the following exchange shows.

Researcher: Do you use English in your daily life?

T15: Daily life? Yes, on Saturday and Sunday when I have free time. It's my favorite amusement. Watching TV and videos.

Researcher: Is it useful for you?

T15: It's useful, very useful. I watch *Desperate Housewives* again and again. That's my favorite.

Researcher: It's a series. Do you watch it on TV?

T15: No, I buy the DVDs. You're right, this is to amuse myself with English.

Researcher: Do you read the English subtitles?

T15: Yes. They have both Chinese and English subtitles. I watch them again and again. I think it's very interesting. There're so much punning in the dialogue.

(T15 in the interview)

A medical doctor said his favorite relaxation with English was listening to English songs and he talked about how he was captivated by the song *Yesterday Once More*

and how he felt the need to learn English for cultural enrichment.

The first time I listened to Yesterday Once More, I would never think the Chinese translation will be "xīrìchóng xiàn"³⁴. The translation is great. The novel Gone with the Wind is translated into "piāo"³⁵. It's also wonderful. But once I read a poem translated from English by Xu Guozhang. It was just so-so. Perhaps that is because of the cultural differences. So I think maybe it's important for me to develop a high degree of taste in English from now on. (D6 in the retrospective interview)

Mediating artifacts:

- Physical tools (books, multi-media, software, Internet etc.)
- Conceptual tools: English as a communicative or cultural tool

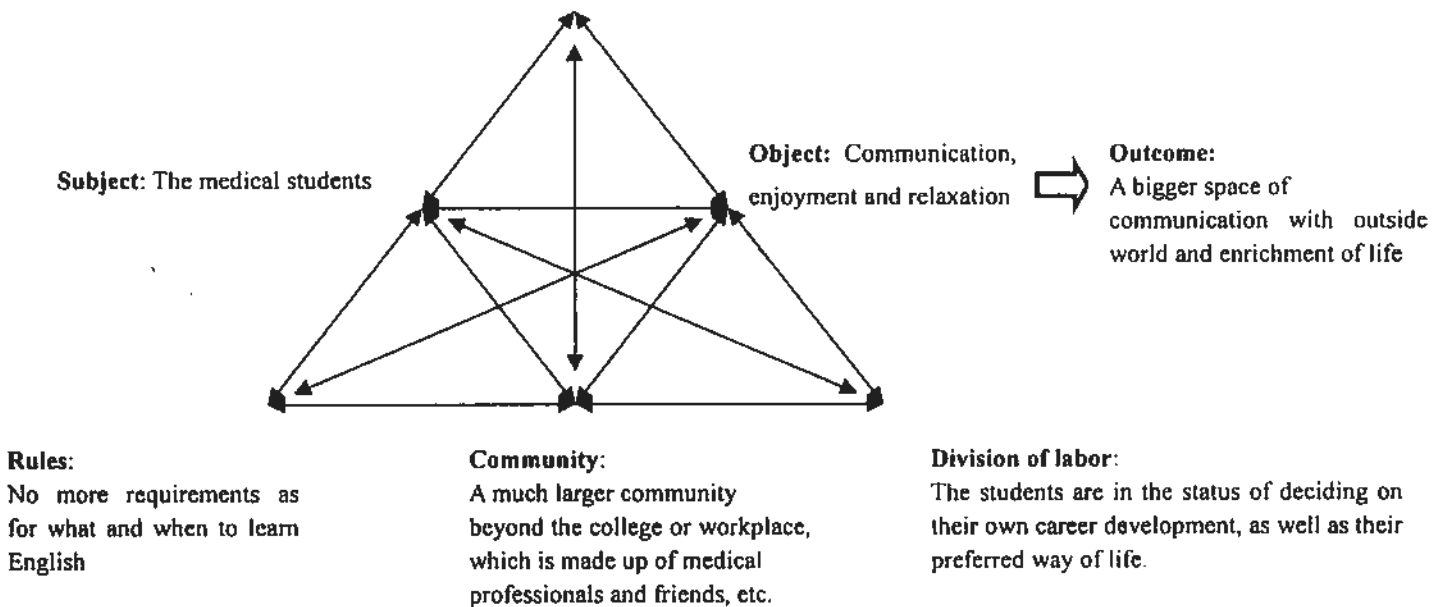


Figure 5.4: The Learning Activity System of Using English as a Cultural Tool

From treating English as an examination tool, to a linguistic tool, and then to a communicative or cultural tool, the students' perceptions of English learning needs follow a developmental track in an ever-enlarged community of English learning. It

³⁴ The Chinese characters are 昔日重现.

³⁵ The Chinese character is 飘.

is found that in the majority of first and second-year students, the perception of English learning remains in the first stage of development, while with a large number of senior students and teachers, the perception is in the second stage. During the interviews, many teachers pointed out that the importance of English for the medical students lies in the fact that most medical publications are in English, and so English is an important tool for knowing about the latest development in the biomedical field as we read in the following quote.

The scientific research level in our country is still very low, especially in the field of medicine. And there are very few publications. So most of the materials we need in our research are in English. Actually more than 90% of the references we use are in English. So it's very difficult to do the job if your English is poor. (T20 in the interview)

I use more English than Chinese in my job. You can say English is my working language. It's a language tool at my job. (T11 in the interview)

In medical English learning, the students, the ME teachers, and the college bring multi-perspectives of English learning needs into the learning activity systems. While in the student's view English is an examination tool, and they just want to pass the course examinations and get credits, the ME teachers think English is a linguistic tool through which the medical knowledge is imparted, hence the focus on medical terms and knowledge. At the same time, the college means to use English as an administrative tool to enhance its reputation. The decision to offer the ME course is thus top-down, bringing about the perceived institutional needs, which involve elements of political pragmatism. The teachers' questioning of the motives of the ME

course and other language policies (see section 4.4.4.) provides evidence of these perceived institutional needs.

These activity systems interact in the ME course, and the multi-voicedness brought about by the different, or even conflicting tools inevitably generates contradictions. In Activity Theory, contradictions are considered to be a source of both trouble and innovation (Engestrom, 1987). The contradictions may be aggregated. If different parties are involved in dialogic problem solving and innovative attempts are made, a potentially shared or jointly constructed object will come into being, and possible solutions will be found (see Figure 5.5). For example, both the students and the ME teachers actually have, to some extent, realized the importance of English use in communicative contexts, as revealed from focus group discussions and interviews. A jointly constructed object of the ME course can be to learn some basic medical terms and acquire knowledge through English, and develop a certain level of communicative abilities in English for medical situations. But, if negotiation between different parties does not happen, or it fails to reach consensus, the learning project, in this case the ME course, will finally end up with nothing definite.

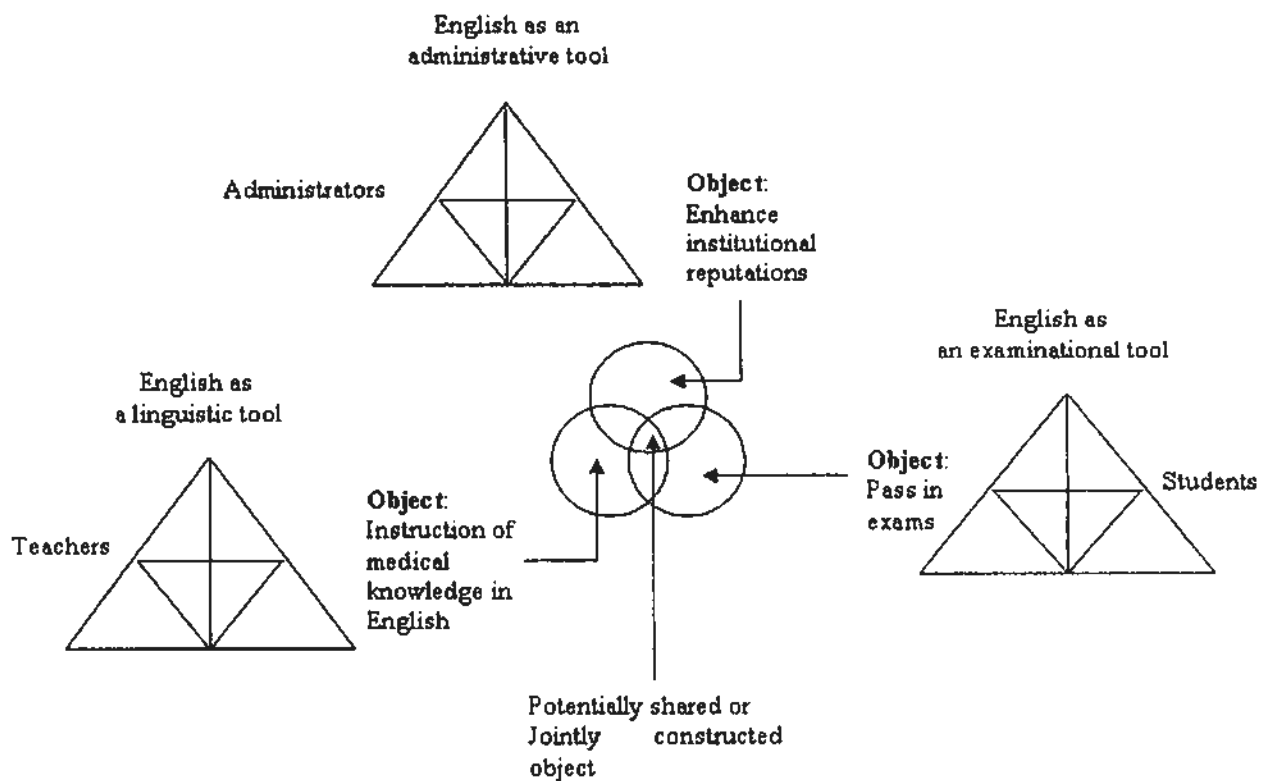


Figure 5.5: The Interacting Activity Systems of the Medical English Course

The presentation of different activity systems interacting in the ME course helps to display the interaction of the components within and in-between these activity systems, and reveals the contradictions. The next section will analyze and summarize the contradictions in these activity systems.

5.2 Contradictions in the Activity Systems of Medical English Learning

According to Engeström (2001), one of the principles of the activity theory is the central role of contradictions as sources of change and development. There are all together four levels of contradictions within the human activity system (see section 2.4.2.4 for detailed explanation of these contradictions with examples):

Level 1: Primary inner contradictions *within* each constituent component of the

central activity.

Level 2: Secondary contradictions *between* the constituents of the central activity.

Level 3: Tertiary contradictions *between* the object/motive of the dominant form of the central activity and the object/motive of a culturally more advanced form of the central activity.

Level 4: Quaternary contradictions *between* the central activity and its neighbor activities. (Engestrom, 1987, p.73)

The following subsections will analyze the contradictions within these four levels as identified in the ME activity system.

5.2.1 The Primary Contradictions in the ME Activity System

The primary inner contradictions reside in each component of the activity system. Some key primary contradictions can be identified in the ME activity system. For example, the selection of medical subject teachers to teach the ME course reflects the contradiction within the *subject* component. Although the teachers are better at English than average teachers, they are not trained in language teaching and know little about language teaching pedagogies. They are therefore put into the dilemma of whether to teach medical knowledge in English or to teach the language itself through the introduction of medical knowledge. Even though most of them think the course should focus on both medical knowledge and language skills training, their classroom instruction is geared more towards the instruction of medical subjects in English. This primary contradiction is prominent in those ME teachers who are found to be poor in pronunciation or even poor to express themselves in English. A good case in point is an ME teacher who uses a lot of mixed-codes in her instruction. Here

are some excerpts of her lecture in the ME class, all in the original.

- ✓ Xiàmiàn wǒmēn zài (Next, let me) introduce muscles. Zhī bù zhīdào (Do you know) how many muscles inside our body?
- ✓ Zuì wài miàn de gǔtóu shì (The bone outside is) very hard, shì gǔ mì zhì (it is compact issue) compact issue.
- ✓ Zhèxiē xīnzàng kěyǐ (The heart can) replant, dànshì zhídào jīntiān (but until now) until now, shénjīng shì bù nénggòu yízhī de (nerves can not be replanted).

Another key primary contradiction is the timing of Medical English course (*rule*). The course is offered for the first-year students, who are learning basic subjects such as chemistry and medical physics, and therefore lack the necessary medical subject knowledge to understand the course in English. Because the course focus is actually on the instruction of medical subjects in the classroom, many students find the course difficult. Some are even resistant to acquire medical knowledge in this way.

07S4: We are suddenly crammed with so much knowledge. We can't digest it. And we don't want to learn it. The cramming is useless.

07S5: It's mainly because we don't want to cram in this way. Just don't want it in this way. I think it's of no use at all. We will learn it later.

Researcher: You will learn it later in Chinese. That will be easier and quicker to learn. Is that why you are resistant to learn medical English?

07S4: We're really bad at memorizing so much.

Researcher: Do you spend time on the course after class?

07S5: No.

Rēsearcher: You'll be tested on the terms in the exam.

07S5: Whenever I think about the exam, I feel like crying!

(Excerpt from the focus group discussion with the second-year students)

Another primary contradiction in the *rule* component of the ME learning activity system is between the requirement on the students to obtain high level of academic English proficiency in medical field after the ME course and the decision that the ME course runs for just one year. The high expectation on the students is impossible to meet because of the limited learning time. As the questionnaire survey reveals, more than one third of the students and the teachers think the ME course should be extended to seven years because most of them think language learning is a slowly developing process, demanding a lot of time and energy and the language abilities cannot be achieved instantaneously in a jiffy.

Primary contradiction is also found in the *division of labour* of the ME course. The ME course is a product of administrative decision-making. The prescription of syllabus, the scheduling of the timetable and the assignment of the teaching tasks, all are top-down. Hardly are the students and medical subject teachers involved in the discussion of the course objectives and teaching content. The division of labour in the course is well-defined in that the college gives the orders, the teachers do the job, and the students passively accept the compulsory course. The contradiction in this component of the ME activity system is generated when different understandings of the course objectives appear, but these voices are not heard, leading to low learning efficiency.

5.2.2 The Secondary Contradictions in the ME Activity System

Secondary contradictions emerge when an activity system adopts or a new element is “injected” into one of its components from the outside, leading to collision between some old components and the new one. In the investigated context, the ME course is expected to help the students develop higher level of English abilities that are demanded from medical professionals (as claimed in the syllabus). When this new object is imposed into the students’ English learning activity system, in which the original object is to pass examinations, secondary contradictions arise. First of all, the new object comes into conflict with the old one when the communication between the college and the students is inadequate, and the students fail to see the significance of the new object, namely the new conceptualization of the English learning needs. It is also in contradiction to the students’ learning strategies (*tool*). Having undergone cramming centered education in the primary and secondary schools, the students are have almost no training for independent learning, and are not equipped with proper strategies to plan their study and learn autonomously in the university, just as a student told the researcher in the following excerpt:

Many of us have been oppressed so much in the secondary school. Suddenly, we find ourselves completely free in the university. There is so much free time. ... the transition from the secondary school to the university is too quick, and we are not given a specific purpose for learning. (O5S1 in the focus group discussion)

The object to enhance English proficiency of all students, also contradicts the fact that only the students in the English Immersion Class (EIC) will have to use English

textbooks and have English lectures on medical subjects (*rule*). The seemingly beneficial-to-all course is rejected by some students who are not interested in English and would rather acquire medical knowledge in Chinese. These students believe that English is not as useful as the college claims for the students not in the English Immersion Class as the following extracts indicate,.

Actually, it is the college who is stressing the usefulness of English for future academic communication. In fact, there are not many chances to go abroad. Now we have the EIC class. The students not in the EIC class may not have the chance to go abroad at all, because the EIC students have an advantage. Then, what's the use of English for those not in the EIC? (S07036's answer in the English learning questionnaire survey)

What we learn is seldom used. Only the students in the EIC class have the chance to use it. (S07074's answer in the English learning questionnaire survey)

5.2.3 The Tertiary Contradictions in the ME Activity System

The tertiary contradiction appears when representatives of culture (e.g., teachers) introduce the object and motive behind a more culturally advanced form of the central activity into its dominant form. In the ME activity system, the object of the dominant form of English learning among the students is to pass the course exam and get credits. When the ME teachers try to introduce the object of a more culturally advanced form for the ME learning activity, namely to use English as a linguistic tool for medical studies, it is in conflict with the students' priority on examination preparation. The following excerpts reveal their anxiety to pass exam instead of

following the teacher's instruction in the ME class.

There are many things that are introduced to us. But we have very vague ideas. For example, the teacher always says: "You should have learnt this." But I don't think we need to learn it. First, it cannot help us to pass CET, because CET 4 doesn't test the medical terms. (07S3 in the focus group discussion)

What we want is to pass CET 4, but we're unsure about what to do. We don't know how to prepare.... And we have to pass it. (07S4 in the focus group discussion)

5.2.4 The Quaternary Contradictions in the ME Activity System

Quaternary contradictions happen between the central activity and its neighboring activities including object-activities, instrument (or tool)-producing activities, subject-producing activities, and rule-producing activities. Under the central activity system of the Medical English learning, there are neighboring activity systems of the students, the teachers, the administrators and the medical doctors. Quaternary contradictions take place as different parties bring into the central activity system their own interests, values and beliefs produced in the activities they used to be involved in. For instance, the students have always been in the learning activity system, which orientate learning actions towards passing examinations. They have developed some methods to deal with exams, such as rote learning of vocabulary and grammatical structures (Wakins & Biggs, 1996). Their former learning activity is the tool-producing activity for the current ME learning activity. The ME teachers formulate different objects of learning for the students, but they pay little attention to

the students' original learning strategies. Therefore, they fail to help the students develop new learning strategies to deal with the new challenges in studying, hence there are complaints among the students about the low learning efficiency in the ME class.

Another quaternary contradiction can be identified between the rule-producing activity of the medical doctors and the ME learning activity. The interviews with the medical doctors indicate that English is only occasionally used in their workplace, while in their spare time they have to spend a lot of time reading literature or writing articles in English if they want to get promoted. The contrast in the use of English between the workplace and in research is derived from the institutional requirement to publish articles as evidence of research capabilities (*rule*). Similar requirements are placed on the medical teachers. These rule-producing activities influence the ME teachers' understanding of the medical students' English learning needs (*object*). But, without adequate communication with the students, the ME teachers fail to raise the students' awareness of these English learning needs.

In a similar vein, the college provides some opportunities for the students to study abroad, which are considered to be great motivation for the students to learn English. But not all students know about the opportunities and related requirements because of communication problems again. In the focus group discussion with the second-year students, the researcher was told that only the monitor in each class and the students in the EIC class attended the lecture on an exchange program with a

Canadian university. As a result, many students knew little about the program or any other similar opportunities.

The contradictions discussed in four levels here revealed the potential problems as well as the dynamics of possible change and development of the ME learning activity system. The dynamics of change and development derives from the resolution of these contradictions. For example, to resolve the contradiction between the college's expectation of high English proficiency from the ME course and the students' failure to understand the significance of the ME course, the college can give the students the opportunities to discuss the objectives of the ME course on an equal basis with their teachers and the collegial administrators. It can also make arrangements to invite students from higher learning levels or professors who have studied or worked abroad to give lectures on the importance of English. In so doing, the importance of English learning and the objectives of the ME course will be made clear to the students and they will become more active as motivated English learners. And to relieve the students' burden and achieve better learning results from the ME course, the college can redesign the ME course on a seven-year basis.

The contradictions concern the institutional policies such as the schedule of the ME course and the selection of the ME teachers, are beyond the scope of the study. In the next section, contradictions that may be resolved through curriculum design and classroom instruction on the part of the teacher will be highlighted, and a new mediating tool will be formulated as a way to resolve these contradictions.

5.3 Resolution of Contradictions through Formulation of a New Mediating Tool

The previous subsection has analyzed the contradictions in the ME activity system that are revealed through a critical analysis of English learning needs. In this subsection, the formulation of genre-based pedagogy as a new mediating tool in the ME activity system comes as a necessary step in critical needs analysis, which will finally lead to the implementation of the new tool and the transformation of the activity system. The results of implementation will be discussed in Chapters 7, 8, and 9. This subsection also serves as the transition from seeking answers to the second research question to seeking answers to the third research question by establishing the place of genre-based pedagogy in the present research.

5.3.1 Contradictions in the ME class Activity System

The contradictions in the ME activity system have been discussed and summarized in Section 5.2. Because the present research focuses on innovation that can be implemented by the teacher, it pays special attention to the contradictions inside the ME *Class* activity system. This subsection identifies the contradictions in the ME class activity system that are related to, but not exactly the same as, those in the ME activity system in general.

The ME class activity system exists in the ME class, where participants include ME teachers and students. It is a microcosm of the English learning activity system at large. The contradictions that arise in this activity system are presented in Figure 5.6

(indicated by the double arrows). There are two primary contradictions in the components of *tool* and *object*. First of all, the students and the ME teachers may have conflicts in the values of English learning (*tool*). The ME teachers tend to view English as a linguistic tool in medical studies and research, while the students regards it more as an examination tool, although some students would like to use it for communication. This conflict in values lead to contradiction in the expectations of the ME course, namely the *object* of learning medical English. The teachers expect the students to acquire medical knowledge in English, whereas most students consider passing examinations as the object of learning, and hence are not interested in the course content itself.

Four secondary contradictions are identified in between the components of the ME class activity system. The focus group discussions with the students also reveal the students' desire to use English in communication, apart from passing course examinations. But this *object* of learning is not satisfied because the ME teachers are not trained in language teaching and are not capable enough to teach English used in communicative contexts. This limitation of the *subject* also influences the successful delivery of medical knowledge through English, namely the *object* of learning perceived by the ME teachers, as some ME teachers are poor in expressing themselves in English. At the same time, the requirement of the college for the first-year students to take the ME course as compulsory (*rule*) means that the students are put at a disadvantage, because they do not have the medical knowledge background to follow the class well, and therefore cannot learn as the ME teachers

expect. And as university students, the students are given a lot of time to learn English autonomously (*rule*), but they do not have proper learning strategies for autonomous learning.

The contradictions of the ME class activity system reflects the multiple perspectives and multi-voicedness of the ME teachers and the students towards English learning in general and ME learning in particular. The contradictions also reveal some qualities of the subjects that hinder the achievement of the ME course object, namely the ME teachers' not being qualified to teach English language and the medical students not having the required medical subject background and independent learning strategies. To resolve these contradictions, a new tool has to be conceptualized and formulated so that shared vision of English learning, especially ME learning, can be built among the ME teachers and the students, so that their deficiencies as language teachers or learners can be made up. The following subsection will discuss how genre-based pedagogy can be used as a new mediating tool to achieve these aims.

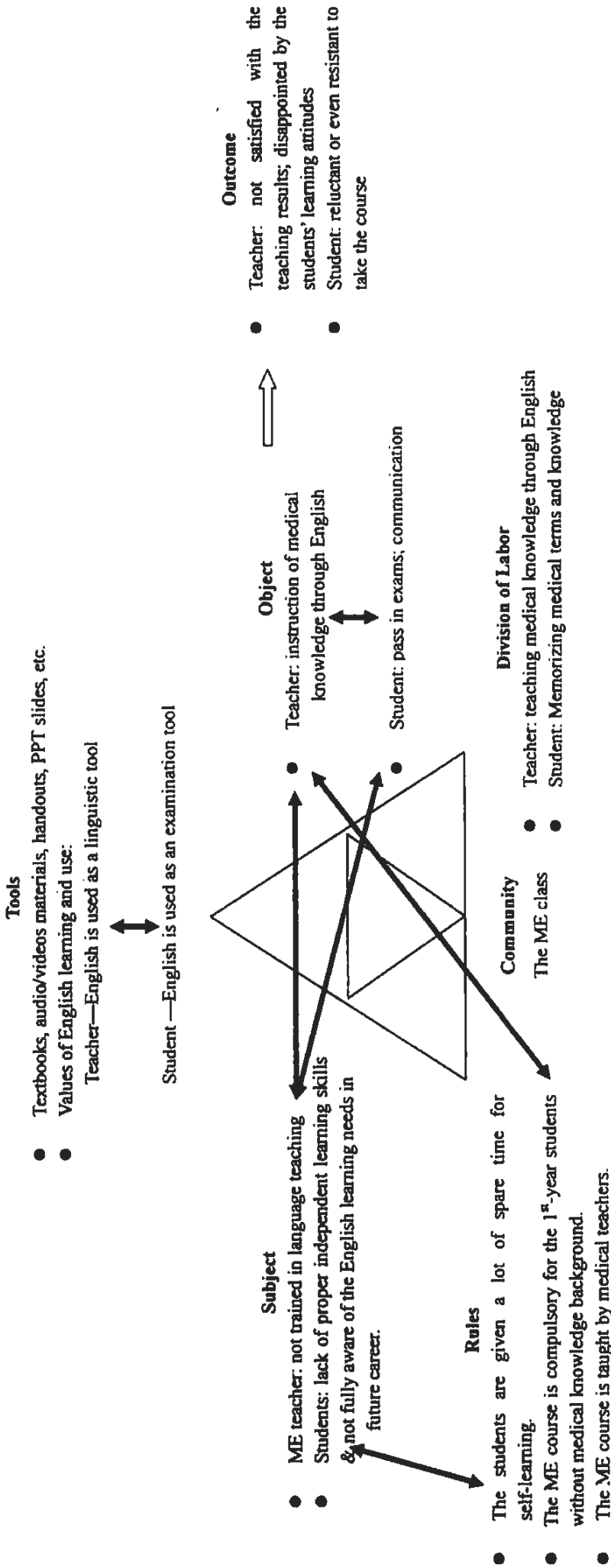


Figure 5.6: The Contradictions in the Medical English Class Activity System

5.3.2 Genre-Based Pedagogy as a New Mediating Tool

In section 1.1.1.4, the reasons why genre-based pedagogy (GBP) is used in the present research are given. In section 2.6.2.1, genre is re-conceptualized as a mediational tool through which novices in a professional field gradually transform their academic activities. And in section 2.6.3, GBP is considered to be able to mediate in the activity systems of ESP instruction and generate expansive learning. In this section, the functions of genre-based pedagogy are discussed in terms of how it will help to resolve the contradictions in the ME class activity system.

First of all, GBP has long been established as an important language teaching methodology in ESP courses (Dudley-Evans, 2001; Hammond & Derewianka, 2001) and it is an immediate candidate to facilitate the ME course. Introducing GBP as a pedagogical tool into the ME class will change the current drawback of the ME teachers who are not trained in language teaching. If trained to use this pedagogy, they will be able to utilize the teaching techniques advocated by GBP (e.g. Callaghan & Rothery, 1988; Martin, 1999) and use new materials in their instruction and in so doing develop both abilities and confidence to teach English. A new academic identity as language teachers will be cultivated, and the ME teachers will be given a more central role to teach the ME class. In this way, the contradiction between the ME teachers as unqualified language teachers (subject) and their *object* to be able to lecture in English will be relieved.

Secondly, through GBP, the ME teacher will be able to offer the students explicit

understanding of how texts in target genres are structured, and why they are written in the way they are in the target situations in professional fields. With a conscious manipulation of language choices, the students will be more capable to communicate effectively in future career situations. Therefore, their desire to be able to use English in communication can be satisfied. And the ME course focus will shift from the single emphasis on medical knowledge to double foci on both medical knowledge and linguistic use (*new object*), making the course more suitable for the first-year students to learn. More importantly, GBP will help the students to realize the integration between the two (i.e. medical and linguistic knowledge) in the ME course, and, specifically, learn how language is used to make meaning within a specific context.

In GBP, the importance of both modelling instruction and critical analysis of genres has been emphasized (Cope & Kalantzis, 1993; Bhatia, 1997; Hyland, 2004). It offers specific learning strategies to the students, such as reading skills that make use of genre structure to enhance understanding (Carrell, 1985), using genre analysis approaches to discover, comprehend and analyze new genres (Paltridge, 1995), or transferring the previously noticed generic features into writing (Cheng, 2007). In this way, genre-based instruction can be used for learner training for the first-year university students who are faced with the challenge of autonomous learning. Through genre-based instruction, the students will improve themselves in learning strategies and be able to make better use of their spare time in English learning.

Moreover, GBP will introduce the English use in target situations in the students' future career, and in so doing can help to raise their awareness of the academic needs of English. Not fully aware of the English learning needs in their future career, the students fail to see English use in their future life and are unable to develop more positive attitudes towards English learning. The use of GBP in the ME class will lead to changes in the students' values of English learning (*tool*) and help them formulate new *object* of ME learning that will be in consensus with the object formulated by the ME teachers. In this way, the students will come to realize that English is not only a communicative and linguistic tool for their future life, but also a *conceptual tool* for visualizing hitherto inaccessible opportunities (Bruthiaux's 2002). In this way, the students and the teachers will not only share the meta-language to talk about medical issues but also develop a common vision about the role of English in medical studies and career development.

The use of GBP in the ME class will also help to cultivate new identity as future professionals for the students. Within the framework of GBP, the students act as novices in the professional field and envisage attainable aims to achieve larger space for career development with the support of English, in contrast to their traditional role as passive learners.

The new identities of both ME teachers and students (*subject*) will bring about changes in the division of labour as well. Formerly, the division of labour between the ME teachers and the students was clear-cut: the ME teachers teach and the

students listen and memorize. With GBP, the teachers will assume more varied set of roles, such as facilitators as they scaffold language use in medical situations and career models, when they discuss English learning needs with the students, and treat them as future fellow professionals. At the same time, new responsibilities will also be taken by the students. They will take the initiative to analyze target genres in medical situations, and become more responsible and involved learners.

In this way, the introduction of GBP into the ME class activity system is likely to lead to a series of changes in the components of the activity system, and resolve the contradictions within or in-between them. The outcome is a culturally more advanced ME class activity system that produces not only a higher level of English language skills and learning strategies, but also new identities, new values of English learning and use, and new pedagogical possibilities surrounding the ME course for both the ME teachers and the students.

Conclusion

To answer the second research question posed at the beginning of this chapter, the English learning needs of medical students in the investigated context have been critically analyzed, and some contradictions have been identified in the activity system of the ME course. These contradictions can be summarized in Table 5.1.

Table 5.1: Contradictions in the Medical English Activity System

Level	Components	Contradictions
Primary	subject	The medical teachers, not trained in language teaching, are selected to teach ME.
	rule	The ME course is compulsory for first-year students who lack a medical subject background to gain insights from the course.
	division of Labour	The ME course is a product of administrative decision-making, and both teachers and students are not involved in discussions about the course design.
Secondary	new object vs. old object	The students fail to understand the significance of the ME course because of lack of communication between the college and the students.
	new object vs. tool	The students do not have proper learning strategies to achieve the expected learning results of ME.
	new object vs. rule	Many students are not highly motivated to learn ME given the fact that only the students in the EIC class would have to learn the medical subjects in English, while others in Chinese.
Tertiary	object vs. object	The students are more interested in passing exams rather than acquiring medical knowledge through English, as ME teachers expect.
Quaternary	tool vs. object	The ME teachers pay little attention to the students' old learning strategies to deal with exams, and fail to help them develop proper learning strategies for ME learning.
	rule vs. object	Both medical doctors and medical teachers have to use English in research activities owing to institutional requirements, but they fail to transfer the information onto the students and raise their awareness of English learning needs in their future career.
	rule vs. object	The students are not well-informed of the college's policies on studying abroad, and are not able to foresee the importance of English learning in medical education.

This chapter also touched upon the possibility of formulating genre-based pedagogy as a new mediating tool to renew the current activity system of ME learning, so that some contradictions can be resolved, and the learning activity can be transformed into a more culturally advanced one. But, it should be noted that, in this chapter, the use of genre-based pedagogy, both as a pedagogical tool and a conceptual tool for the teacher and the students in the ME class, is discussed theoretically. Whether it can

help to resolve the contradictions presented above will be checked in classroom practice in the intervention case study, which is the second stage of the present research. In the next three chapters, the results of the genre-based instruction in the ME class will be presented, and the third step of critical needs analysis, namely transformation and evaluation, will be fulfilled.

Chapter 6: Reconceptualizing the English Learning Needs

Now I think if I want to become a good doctor, it won't help if I just know things inside China. I need to know about the world. In some subjects, like pathology, we have to know more about what's going on in other countries. Knowing English can help me enhance the knowledge. ---- Hai in the third post-unit interview

Introduction

This chapter investigates the vertical dimension of expansive learning from the genre-based instruction. It intends to answer the first sub-question of the third research question as re-stated below:

- ◆ **How are the students' perceptions of English learning needs re-conceptualized?**

The answer to the above question is divided into two sections, one based on the findings of the questionnaire surveys (the English learning questionnaire and the genre-based instruction questionnaire) and the other based on the findings of the post-unit interviews with the six students for in-depth analysis.

6.1 Findings of the Questionnaire Surveys

Two questionnaire surveys were conducted in the intervention case study, namely the English learning questionnaire and the genre-based instruction questionnaire. In this section, the results of the English learning questionnaire are presented in terms of the comparison between pre-test and post-test. As for the genre-based instruction

questionnaire, only the data of some items related to the students' understanding of English use will be discussed. The items related to the genre-based instruction will be presented in the next chapter which focuses on the concept formation of genre-based pedagogy.

6.1.1 Findings of the English Learning Questionnaire

As introduced in Section 3.2.4.2, the English learning questionnaire that had been used in the needs analysis serves as the instrument for pre-test and post-test of the students' perceptions of English learning needs (see Appendix 3A for a sample of the English learning questionnaire). The comparison between the data from the pre- and post-test helps to indicate if the case study students' perceptions of English learning needs have changed over the intervention process comprising genre-based instruction. This section introduces the comparison results from three aspects namely (1) the purposes of learning English (why learn), (2) what languages skills are important to learn (what to learn) and (3) how English can be learnt in the medical English course (how to learn).

6.1.1.1 Why learn

Eighteen items (from Item 6 to Item 23) inquire about the students' understanding of why they need to learn English in six motivational dimensions. Table 6.1 reports the means and standard deviations of these six dimensions answered by the case study students before and after the interventional instruction (see Table 3.7 for how the

items are categorized in the six dimensions). Figure 6.1 presents the comparison visually. It can be seen that the students' perceptions of English learning follow a similar pattern in the pre- and post-test, which is also the same as the pattern displayed in the data collected from all the student subjects in the needs analysis (see Table 4.11 in section 4.2.1.3).

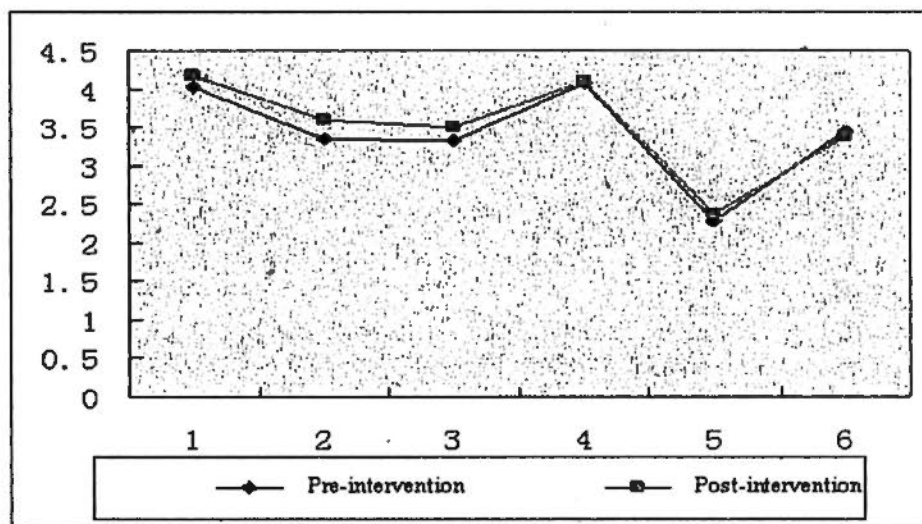


Figure 6.1: Comparison in between Six Motivational Dimensions

D1 (the intrinsic motives organized by the individual's future career plan) and D4 (the desire to broaden one's view and avoid provincialism) are the most important reasons why the students think they need to learn English, D2 (the extrinsic motives organized by the individual's future career plan), D3 (the interest in foreign languages, cultures, and people), and D6 (the desire for new stimuli and challenges) are the second important reasons. And D5 (the desire to integrate into a new community) is the least important. Compared with the pre-intervention perceptions, the post-intervention perceptions have higher means in D1, D2, D3, D4, and D5, and a lower mean in D6. But paired t-tests reveal no statistical differences in between all

the mean differences (see Table 6.1), indicating that there is no statistically significant difference between the students' pre-intervention and post-intervention perceptions of why they think they need to learn English.

Table 6.1: The Pre- and Post-Intervention Perceptions in Six Motivational Dimensions

Dimension of Motivation	Pre-Intervention		Post-intervention		Sig.
	M	SD	M	SD	
D1	4.0362	0.7344	4.1739	0.4855	.352
D2	3.3478	0.9348	3.6014	0.8538	.160
D3	3.3271	0.6627	3.4938	0.5470	.198
D4	4.0870	0.7744	4.1087	0.7064	.885
D5	2.2826	0.9660	2.3696	0.9743	.662
D6	3.4565	0.9359	3.3696	0.9142	.620

- * D1=intrinsic motives of future career striving, D2=extrinsic motives of future career striving, D3= Interest in foreign languages, cultures, and people, D4= desire to broaden one's view and avoid provincialism, D5= desire to integrate into a new community, D6= desire for new stimuli and challenges
- * The mean is based on a Likert scale of 1 to 5.
- * Student No = 46
- * Significant level = 0 .05

6.1.1.2 What to learn

The importance of learning English in general and in different language skills and sub-skills are inquired through Items 24, 25, 26, and 27. The mean differences of these items in the pre-test and post-test are introduced in Table 6.2. The perceived importance of English learning in both medical studies and future career have increased. But no statistically significant mean difference is found in pair t-test. Neither is statistically significant mean difference found in the seven language skills in Item 26, though writing and grammar appear to have bigger means and speaking and terminology have smaller means in the post-test.

As for the 30 language sub-skills listed in Item 27, significant differences are found in 10 sub-skills (highlighted boldface in Table 6.2). Nine of them have bigger means

than those in the pre-test as shown in bold in Table 6.2. The only sub-skill that has a statistically significant smaller mean is reading instructions for labs (Item 27Ad).

Table 6.2: Means of Perceived Importance of English Learning and Language Skills in Pre- and Post-Intervention Questionnaire

Items		Pre-intervention	Post-intervention
24. The importance of English in medical studies		4.2391	4.5111
25. The importance of English in future career		4.3696	4.5870
26a.	reading	4.8478	4.8913
26b.	writing	4.2174	4.3913
26c.	speaking	4.6522	4.5435
26d.	listening	4.6957	4.6087
26e.	translating	4.0000	4.0435
26f.	grammar	3.1522	3.3261
26g.	terminology	4.4348	4.3478
27A. Reading	a. English textbooks	3.7609	4.1957*
	b. Course handouts and assignments	3.8043	4.2609*
	c. Medical journal articles	4.0652	4.2391
	d. Instructions for labs	4.0217	3.5870*
	e. Internet resources	3.9783	4.0435
27B. Writing	a. Lab reports	4.3261	4.2174
	b. Assignments	3.8043	4.2174*
	c. Lectures notes	4.0870	4.0652
	d. Medical records	4.3478	4.5870
	e. Examination questions	3.9565	4.0435
	f. Letters or emails	3.2391	3.7609*
	g. Research articles	4.5652	4.4565
27C. Speaking	a. Having daily conversations	4.5217	4.5217
	b. Having conversations in workplace	4.6304	4.6304
	c. Presenting oral reports	4.6522	4.6304
	d. Participating in non-academic discussions	4.1522	4.1304
	e. Participating in academic discussions	4.7174	4.4783
27D. Listening	a. Following academic lectures/seminars	4.5652	4.4565
	b. Listening to class	4.2826	4.4783
	c. Listening to radio/other audio materials	3.8478	4.2174*
27E. Translating	a. Translating academic articles from Chinese to English	3.9565	4.4565*
	b. Translating academic articles from English to Chinese	4.2391	4.2609
	c. Translating article abstracts from Chinese to English	3.9783	4.3478*
27F. Grammar	a. Using grammar properly in writing	4.1087	4.5217*
	b. Using grammar properly in speaking	3.4783	3.7609
27G. Vocabulary	a. Understanding medical terminology in textbooks	4.6304	4.5652
	b. Understanding medical terminology in literature reading	4.4130	4.4565
	c. Pronouncing medical terminology properly	4.0870	4.0652
	d. Using medical terminology in writing	3.9130	4.2609*
	e. Using medical terminology in academic discussions	4.2174	4.4565

* The asterisk indicates significant difference between the pre- and post-test.

* Significant level = 0.05

The significantly bigger means indicate significant increase in the students' perceived

importance of these language sub-skills. A close relation is found between these sub-skills and what have been taught in the genre-based interventional instruction (for a general introduction to the content of the genre-base instruction, see Table 3.13). The genre-based interventional instruction introduced two important sub-genres of description, namely structuring definition and classification, with the aim to improve the students' abilities to read medical textbooks and other materials in the medical learning contexts. The instruction may have helped the students to realize the importance of textbook reading (Item 27Aa). The genre-based instruction also provided opportunities for the students to read sample texts of English case histories, academic articles, and abstracts. Therefore they might have also realized the importance of reading course handouts and assignments (Item 27Ab). The students also had opportunities to write assignments such as case histories, abstracts and emails in academic communication. Their awareness of writing assignments (Item 27Bb) and letters or emails (Item 27Bf) in English are also higher. The increased perceived importance of writing may have also contributed to the significant increase in the perceived importance of using grammar properly (Item 27Fa) and using terminology (Item 27 Gd) appropriately in writing. In addition, the listening exercises of Internet resources in different medical learning contexts may have contributed to the awareness of the importance of listening to radio or other audio materials (Item 27Dc). And the exercises on translation may have drawn the students' attention to article and abstract translation, leading to bigger means in these two sub-skills (Item 27Ea and Item 27Ec).

Of the five reading sub-skills listed in Item 27A, only reading instruction for labs has a mean smaller than 4. It can be tentatively concluded that the students' understanding of English learning needs have become more practical, given the fact that reading learning materials and academic articles are important for the students in their medical studies and future career in the investigated context while the instructions for labs are seldom given in English in the Chinese context, as revealed by needs analysis in the first stage of this research.

6.1.1.3 How to learn

Item 28 – 35 (see Appendix 3A) seek students' views of the ME course as a way to ascertain how they would like to learn English in this course.

Item 28 asks the students if it is necessary to take the ME course. It is found that, compared with the pre-intervention survey results, fewer students think the ME course is unnecessary, the figures dropping from 17.39% (8 out of 46) to 4.34% (2 out of 46). As for the focus of the ME course (Item 29), there is an obvious decrease in numbers (dropping from 32.61% to 8.70%) who choose medical knowledge as the focus of the course. At the same time, more students are found to choose language skills (39.13%) or both medical knowledge and language skills (52.17%) as the focus of the course (see Table 6.3). The explicit instruction of language use in different situations in the genre-based instruction may have drawn the students' attention to language learning in the ME class rather than mainly recognizing the dominant role of medical knowledge.

Table 6.3: The Focus of ME Course Perceived in Pre- and Post-Test

Focus of ME course	Pre-intervention Student No (Percentage)	Post-intervention Student No (Percentage)
a. Medical knowledge	15 (32.61%)	4 (8.70%)
b. Language skills	12 (26.09%)	18 (39.13%)
Both a and b	19 (41.30%)	24 (52.17%)

* Student Total No = 46

Item 30 asks about the focus of the ME course in terms of what language skills to teach. Similar to the ways in which the same items during the needs analysis were reported (see Section 4.2.3.2), those skills that are ticked out by the students were given one point and thus the total points were calculated. The quotients of the total points divided by the total numbers of students (No=46) serve as the indices of importance perceived by the subjects. The indices of importance in the pre- and post-intervention are shown in Table 6.4. Although T-test indicates no significant difference between the pre- and post-test results, it can be seen that except terminology, the other skills all have higher indices of importance. The students seemed to attach more importance to most of the language skills after the genre-based instruction. Consistent with these results are the students' evaluation of what language skills are taught in the ME class. All the language skills except terminology have higher means (see Table 6.5), and there are significant differences in some of them (speaking, listening, translating, and grammar).

Table 6.4: Comparison of the Focus of the ME Course in terms of What Language Skills to Teach

Language Skill	Pre-intervention	Post-intervention
Reading	0.7174	0.9565
Writing	0.7826	0.8478
Speaking	0.8043	0.8957
Listening	0.5435	0.6304
Translating	0.3478	0.5870
Grammar	0.0217	0.1087
Terminology	0.6087	0.5435

As for what activities take place in the ME class (Item 32), all activities except vocabulary drills have higher means, and significant differences are found in some of the activity types (role playing, grammatical drills, activities involving audio/video input, and writing and reading exercises). Significant difference is also found in vocabulary drill, which indicates a lower mean. Higher means are also found in all the sub-items in Item 33 (how the students like the activities), but only writing exercises have a significantly higher mean, indicating that the students liked writing exercises much better in the genre-based instruction, but their preference level is still relatively low (Mean is 2.7609 in the scale of 1 to 5), when compared with activities like teacher lectures, role playing, and audio/video input.

Item 34 pertains to student preferences of the teaching materials used in the ME class. The students appeared to like all the materials better, and significant differences are found in the current textbook and the supplemental audio and video materials.

Table 6.5: Comparison of the Evaluation of ME Course in Terms of Language Skills and Class Activities

Items	Pre-intervention	Post-intervention
31. Which English skills are taught in the Medical English course?		
a. Reading	3.5652	3.5000
b. Writing	3.2391	4.0652
c. Speaking	2.3261	3.2391*
d. Listening	1.8696	2.8913*
e. Translating	1.7609	3.1957*
f. Grammar	1.2609	1.7391*
g. Terminology	4.3696	4.0217
32. What kinds of teaching activities take place in the Medical English class?		
a. Teacher lectures	4.7174	4.7826
b. Student oral presentations	2.1739	2.5000
c. Role playing	3.0000	3.6087*
d. Grammatical drills	0.9783	1.5000*
e. Vocabulary drills	3.6087	2.6522*
f. Activities involving audio/video playing	3.0435	3.6087*
g. Group discussions	1.8478	1.9130
h. Writing exercises	1.8913	2.8696*
i. Reading exercises	1.8913	3.0435*
33. How do you like the teaching activities in the Medical English class?		
a. Teacher lectures	3.6087	3.9565
b. Student oral presentations	2.3043	2.8478
c. Role playing	3.4130	3.5652
d. Grammatical drills	1.4222	1.8478
e. Vocabulary drills	2.8478	3.1957
f. Activities involving audio/video playing	3.3696	3.8261
g. Group discussions	2.1522	2.3913
h. Writing exercises	1.9783	2.7609*
i. Reading exercises	2.6957	3.2174
34. How do you like the current teaching materials in the Medical English course?		
a. The current textbook	2.6739	3.4783*
b. The supplemental text materials, if any.	2.8913	3.3696
c. The supplemental audio materials, if any.	2.8696	3.8261*
d. The supplemental video materials, if any.	2.8913	4.2826*

* The asterisk indicates significant difference between the pre- and post-test.

* Significant level = 0.05

To sum up the comparison results in Items 30 to 34, the genre-based instruction had, to a great extent, influenced the students' expectation and evaluation of the ME course as we find in the bold items in the above tables. With the introduction of language use in medical situations and the emphasis on language skills in the ME class, the students seemed to give more attention to the four English language basic skills (i.e. reading, writing, speaking, and listening) while less to terminology.

Moreover they like most of the class activities and teaching materials better. This reveals that the students may have become more interested in the ME course. Evidence to support this possibility also come from the data gathered from the genre-based instruction questionnaire and the post-unit interviews with the students which will be discussed in the next chapter. Three students considered their biggest learning from the genre-based instruction to be the interests in ME learning (see Table 7.2). In fact one of the six students involved in in-depth analysis (Fan) told the researcher that his biggest gain from the instruction is the increased interest in the ME course (see Section 6.2.6).

Item 35 inquires the best learning time for the ME course during the 7-year medical study. Before the intervention instruction, about 54.35% of the students thought the best schedule for ME course was having a short medical English course every year, while rather fewer students made other choices (e.g. learning ME in the first or second year only or in the first two or three years, see Table 6.6). One important reason for this choice, as stated by some students in the questionnaire, was that such a long-term course would follow a proper sequence consistent with the medical curriculum and help the students to understand the medical knowledge better. After the intervention instruction, there were only 34.78% of the students who preferred to learn ME every year, and the distribution of choices appeared to be more evenly spread among different options provided for learning times. One possible reason for this change may be that the genre-based instruction had helped the students to focus more on language learning, as discussed above, and their worry that they would not

be able to learn the course well because of the lack of medical knowledge was somewhat relieved, hence more choices are found for the first or second year.

Table 6.6: Comparison of the Perceived Best Learning Time for ME

Best Learning Time	Pre-intervention	Post-intervention
	Student No (percentage)	Student No (percentage)
1st Year	7 (15.22%)	9 (19.57%)
2nd Year	2 (4.35)	11 (23.91%)
The first two or three years	12 (26.09%)	9 (19.57%)
Every years	25 (54.35%)	16 (34.78%)

* Student No = 46

6.1.2 Findings of the Genre-based Instruction Questionnaire

In the genre-based instruction questionnaire, Item 5 asks the students if the instruction is useful in helping them understand the role of English in medical contexts (study or workplace situations), and Item 6 asks if they think the instruction is useful in helping them use English in medical contexts. To better understand the students' evaluation of these two items, the means of Item 1, 2, 3, and 4 which inquire about the students' evaluation of the instruction on medical knowledge and terms are also presented to make the comparison delineated in Table 6.7. It can be seen from the table that Items 1, 2, 3, and 4 have slightly higher means than Item 5 and 6. But one way ANOVA shows that there is no statistical difference between the mean differences of these items, indicating that at the same time when the students perceive the instruction to be useful in helping them master related medical knowledge and terms, they also think it useful in helping them understand the role of English and the use of English in medical contexts.

Table 6.7: The Descriptive Data of Item 1 – 6 in the Genre-Based Instruction Questionnaire

Item	Mean	SD
1. The instruction is useful in helping me understand circulatory system.	4.04348	0.72897
2. The instruction is useful in helping me master the English medical terminologies of circulatory system.	4.13043	0.74859
3. The instruction is useful in helping me understand nervous system.	3.97778	0.75344
4. The instruction is useful in helping me master the English medical terminologies of nervous system.	4.02222	0.83907
5. The instruction is useful in helping me understand the role of English in medical contexts (study or workplace situations).	3.84783	0.96534
6. The instruction is useful in helping me use English in medical contexts.	3.76087	0.84813

* The mean is based on a Likert scale of 1 to 5.

6.1.3 Summary of Questionnaire Surveys

The comparison between the pre- and post-test results, gleaned from the English learning questionnaire as the instrument to check the case study students' perception of English learning needs before and after the genre-based interventional instruction, reveals the following changes:

- Nine language sub-skills are considered to be more important and one less important, indicating a clearer and more practical view of English learning needs in their studies and future career in the Chinese context.
- More students consider the ME course to be necessary, arguably showing a possible increase in the importance attached to the ME course.
- More students choose language skills only or language skills in conjunction with medical knowledge as the focus of the ME course, suggesting increased attention to language learning in the ME course.
- The students seem to give more attention to the four English language basic skills while less to terminology learning, thus we believe that there is a shifted attention to language learning in the ME course.
- The students appear to like most of the class activities and teaching

materials better, again leading to a tentative conclusion that they may have become more interested in the ME course.

These changes suggest the important influence of classroom practice in the students' understanding of what learning of English constitutes. Genre-based instruction is especially helpful in this aspect because it is designed according to the discipline-specific genres that the students will be exposed to in the future. This is also evidenced by the data from the genre-based instruction questionnaire. The relatively high evaluation scores students gave to the genre-based instruction (see Table 6.7) indicate that the students think the instruction to be useful in helping them not only to master related medical knowledge and terms, but also to understand the role of English and the use of English in the medical contexts. The questionnaire data will be triangulated with other sources, e.g. interview, which will be presented in the next subsection.

6.2 Findings of the Post-unit Interviews

The telephone interviews with the six students selected for in-depth analysis took place after each unit's instruction. Altogether, three rounds of interviews were conducted with each student. Supplemented by classroom observations, these students' perceptions of English learning during and after the genre-based interventional instruction can be investigated.

The following subsections will consist of some discussions of the genres that had been taught. It is therefore helpful to give the readers a brief idea of which genres

had been taught. For more detailed introduction of the genre-based instruction, please see section 3.2.4.2 and for a summary of the teaching content please see Table 3.13.

- ◆ Two sub-genres of description: the structure of definition and classification
- ◆ Two conversations in clinical contexts: the clinical consultation (the conversation between the patient and the doctor) and the clinical discussion (the conversation between the intern and the resident)
- ◆ Two listening genres in medical learning contexts: the flash video and medical class lecture
- ◆ Four writing genres: case history, abstract, cover letter and bio.

The following subsections introduce their learning experiences one by one, from students less motivated to students more motivated (see Table 3.10 for the profile of these students), and summarize the perceptual changes in their understanding of English learning needs.

6.2.1 Fu

Fu, with a rather languid look on his face, never answers questions voluntarily. He draws his words when he speaks, Chinese or English.

Fu appeared to have mastered all the teaching contents in the first unit quite well. He thought his biggest learning from this unit is the functions and terms about the circulatory system and definition structuring. He said the techniques used in definition writing would be very helpful in writing articles.

But in the second unit, Fu seemed a little absent-minded. The introduction of another

sub-genre of description, classification, did not draw his attention. He even forgot this part of the content when interviewed. But another important activity, namely conversation between the intern and the resident, aroused his interest. In the third unit on writing and translating skills, Fu sounded interested again. He thought the instruction on case history and abstract writing was helpful to give him some basic ideas of how to write these special genres in the medical field.

When asked why he needed to learn English as a medical student, Fu's answer in the first interview indicates that he did have some ideas about medical students' English learning needs in the Chinese context.

I know the doctors in the first and second affiliated hospitals³⁶ speak better English. But I know little about the doctors in the other hospitals. But I think doctors now ... many doctors in our country basically communicate in Chinese. So English is not very important (in this aspect). But English is more useful in reading some materials about medicine. (Fu in the first post-unit interview)

In the third interview, Fu revealed that he had got more information about the use of English in the future. The listening practice of a medical class lecture had changed his idea that English would only be useful in reading literature when the ME teacher introduced different listening contexts in which English is needed to obtain information. And Fu admitted that paying more attention to the ME class actually had helped him realize the importance of learning English. He has got some information about English use in the future from the ME class during the case study.

³⁶ Fu is referring to the two affiliated hospitals of the medical college, who accept most of the students of the medical college for internship.

The teacher said new achievement in medicine is always published in English. Also if we have chance to go abroad, we will attend some lectures given by experts. And in the future, more experts may come to China. If we know English, we can attend the lectures too. ...I used to think medical English was useless. And I didn't pay attention at all. And I learnt little from the course. Now there are so many things to learn. (Fu in the third post-unit interview)

From the excerpts above we can know that Fu's self-reported understanding of the English learning needs have undergone some changes. He used to think oral English is useless in the Chinese context and English is only important for reading materials. But the instruction helps him realize that there are more situations in which English is needed, such as academic communications inside and outside China. His perspectives on English learning need have been broadened.

6.2.2 Yuan

Yuan was from a doctor's family in a newly-developed secondary city in the Pearl Delta area in Guangdong province. In the interviews, she talked quickly and sometimes kept going for several minutes, expressing her ideas frankly.

In the first interview, Yuan criticized the ME course for not having a unified teaching objective among the teachers. She said the teachers intended to teach too much medical knowledge and had ignored the learning level of the students. She was clear about what had been taught in each unit but admitted that she was not deeply impressed most of the time. "mómù" (the equivalence of a feeling of numbness in English) was the word she used frequently in the first interview. Within 20 minutes,

she used the word 15 times to describe her state of disinterested in learning.

Yuan: I am numb to anything.

Researcher: You mean you're not interested in what is taught?

Yuan: It's because of the state of mind. Different people have different states of mind in the class. Actually the problem of state has to do with personal experiences. I have no feeling towards the lesson. I have been learning for so many years. My mind changes slowly and becomes numb.

(Excerpt from the first post-interview with Yuan)

Later in the interview, Yuan went on with her explanation of being numb and losing interest in study. She attributed this state of mind to being forced to learn rather than learning actively. She admitted that she had never thought why she was studying ever since primary school.

Study is taken for granted. It's a part of my life. Going to university is also accepted as something that has to happen. I never know why. I hope to learn something new. Not dry and dull knowledge. Maybe it's new experience. But I don't know how to get it. (Yuan in the first post-unit interview)

With the "numb" state of mind, Yuan is surprisingly clear about most of the teaching content. She thought she had learnt some medical terms and useful expressions from the first unit and found oral practice most useful in the second unit. As for the abstract writing in the third unit, her talk reveals that she has very clear ideas about the importance of English abstracts.

The teacher says medical research articles are usually long. We have to read the abstract before we can decide if the article is useful. So we will have to read

many abstracts in medical journals. Another thing is we will have to write English abstract for each article we want to publish. (Yuan in the third post-unit interview)

And she is also clear about why English is important for medical students, which she claimed to know all the time.

For medical students in China, English is something necessary. For one thing, they have to communicate with patients or medical professionals from other countries. For another, many medical techniques and research are published in English. And sometimes I think English is a necessary skill because many medical equipments and medicines have English names. (Yuan in the first post-unit interview)

However, the interviews show that Yuan is more interested in using English to know about new ideas and to read novels. She talked about how she got new ideas from Newsweek and how she tried hard to read *Pride and Prejudice* by Austen. The conflict in her attitudes towards English learning in the academic field and for leisure time reflects the resistance towards English due to overwhelming requirements that are externally imposed. Perhaps it was her mindset and attitude towards learning as a whole that had influenced her attitude to the genre-based instruction. When she was self-motivated, she could be very much involved in learning English – e.g. reading for pleasure (Newsweek and *Pride and Prejudice*). The genre-based instruction had failed to arouse her interest and changed her mindset about the learning of English.

6.2.3 Hai

Hai's hometown is a small town in the mountainous areas in western Guangdong. He is typical of average students: a little timid and attentive, showing modest interest in the class.

The interviews with Hai revealed that he was clear about what had been taught in the units and, to a certain degree, understood the objectives of the teaching activities. He thought the practice on definition description would help him in article reading later and the expressions used in definition would enable him to be better understood in any communication with foreigners. And listening practice in different contexts is useful to prepare him to attend academic conferences. His understanding of abstract writing is similar to that of Yuan, that is, it will be helpful both in article publishing and literature reading. Indeed this information, about the dual purpose for learning to write abstracts, was given by Fang, the ME teacher, when she explained the importance of abstract to the students in the third unit.

Two perceptual changes of English learning are found in the interviews. In the first interview, Hai said he originally thought they need to read English just in examinations. But the teacher's explanation of different reading purposes changed his idea. He thought "There're other contexts, like reading articles and textbooks", for them to read English.

Another change in Hai's understanding of English learning was found in the third

interview. In the second interview, Hai said he planned to work in his hometown after graduation and English would not be important in that small town. He viewed English learning as only a technique to look for good jobs.

The foreign teacher told us English was a technique. When we want to find jobs, it is a good tool. (Hai in the second post-unit interview)

But in the third interview, he expressed his wish to become a good doctor with the help of English.

Now I think if I want to become a good doctor, it won't help if I just know things inside China. I need to know about the world. In some subjects, like pathology, we have to know more about what's going on in other countries. Knowing English can help me enhance the knowledge. (Hai in the third post-unit interview. Parts used at the outset of this chapter.)

The perceptual change from viewing English as a technique required in job seeking to a language that helps to glean more knowledge has, to a certain extent, changed Hai's future identity. Before the instruction, he thought of becoming a mediocre doctor in a remote and isolated town; after the instruction, he wants to be a good doctor with English proficiency to know more about the outside world, though he may still work in the small town.

It can be seen that the genre-based instruction has made Hai open-minded enough to foresee more situations in which English will be needed and instead of perceiving English proficiency as merely a qualification in job seeking. For him, English is a vehicle to know about knowledge and information now. This perceptual change of

role of English in his future life has somehow changed Hai's understanding of his future identity, too.

6.2.4 Ke

Ke is the monitor of the class. He is sensitive. He occasionally volunteered to answer questions but sometimes he looked low-spirited in the class. In the interviews, he said his mood deeply influences the efficiency in his pursuit of medical studies.

Though categorized with Hai as intermediately motivated to learn medical English, Ke appeared to master the teaching content much more effectively than Hai and he displayed better and deeper understanding. When asked why the genre of definition description was introduced and taught, he said it was for deeper understanding of the text, that is, how the meaning is realized in text structures. He showed sensitivity to English as a language itself and shows interest in how meaning is realized in forms. A similar view was expressed in the following extract when he talked about the teaching of abstract writing and considered it to be helpful in both writing and reading.

Researcher: There're different genres in medical writing. Why do you think the teacher chose abstract for you to practice?

Ke: The teacher said we would have to write articles with abstracts later. May be she wanted us to experience how to write it now and have some ideas about the style of academic articles. My understanding is this exercise trains us to draw important information from others' writings.

Researcher: Then it not just helps in writing. It helps with reading too.

Ke: Yes. When you write, you need to know what information is important for readers to know, and how to make them understand your writing better. In this way, when we read a similar text, we can know very quickly where the important information is and how the writer organizes ideas.

(Excerpt from the third post-unit interview with Ke)

Important change has been found in the value Ke attaches to English learning. In the first interview, he said he had been learning English mainly to satisfy the expectations of the school. This motivation to learn English actually originates from the Chinese culture of learning that a good student should respect, obey and co-operate with the teacher (Cortazzi & Jin, 1996).

To tell you the truth, I don't realize the importance at all. Up till now I have never thought of English learning as a very important thing.... I just do what is required of me. If I don't do that, I would feel uneasy. But, actually, if it is not a course, I would spend the time on something else, something I'm more interested in.... I just try to satisfy the teacher's demands since there is such a course. (Ke in the first post-unit interview)

In the third interview, when asked again his purposes to learn English, Ke's answer expressed his perception of English as the embodiment of thinking, rather than simply a tool to communicate and get information.

Ke: I learn English to know about the others' thinking. That is, people speaking English think in a way different from us. They are using a different ways to think. There must be something that has to do with human's nature. I think about this question when learning English.

Researcher: Did you have this idea before? Or it's a new idea that you've just got from the medical English class?

Ke: Actually I had this idea before. I'm interested in psychology. But the lessons, like definition and classification, tell us how some sentences are structured and how important information is distributed. That makes me think more about the difference between languages. I'm more curious about English itself now. For example, ancient English and modern English are different, and what a writer writes is different from what a common person writes. Then, what exactly are the differences? This is what I want to know, what makes good English.

(Excerpt from the third post-unit interview with Ke)

Ke used to learn English just to meet the teacher's demands and was not actually motivated at the beginning. He has different gain from the genre-based instruction. He develops his understanding of English as a language to express thinking rather than simply a tool to communicate and get information. In this sense, it can be said that he might possibly become really motivated as he is exposed to more genre-based instruction and develops his interest in the English language.

6.2.5 Xiao

Xiao is a sedate girl, talking confidently and expressing herself clearly in the interviews.

Like Yuan, Xiao criticized the ME course for not setting a definite objective whether to focus on medical knowledge or English. She herself wished to learn some basic terms and communicate in English in the class. She had very clear ideas about the learning activities in the ME class and her comments on the activities revealed sufficient reflection on what she had learnt.

The third interview with Xiao also indicates perceptual changes in English learning needs. Her understanding of the importance of English has become more comprehensive, as indicated by the following excerpt:

I think communication with the other countries is important in the field of medicine. Also, there is English literature that gives the latest information. If we can only read the Chinese versions, it will be too late to catch up. And we have to publish articles in the future. At least the abstract must be in English. So I think learning English well now will benefit me a lot in these aspects. ... Before this [the genre-based instruction], what we talked about most was going abroad. Now I know English is useful in many aspects. (Xiao in the third post-unit interview)

Later in the interview, Xiao said she thought she should get prepared for her future development now as she says, “*I should have more specific ideas of what to do in the future now and make better use of time to learn English. It will be too late to prepare myself if I don't get started now.*”

Xiao used to be motivated to learn English well just so that she wished to go abroad, but the genre-based instruction has helped her realize that English will play an important role in more situations such as academic communication, article publishing, and literature reading. Her understanding of the English learning needs become comprehensive and she feels the pressure to learn English better with the hope for a more prosperous future.

6.2.6 Fan

Fan is the most active student in the class. He is always high-spirited and ready to

express his ideas. He volunteers to answer questions all the time. Sometimes the teacher has to tell him to give others a chance to speak English.

Fan remembered all the learning activities well and had keen intelligence about these activities. He was sensitive to the changes in the ME class and welcomed the changes, namely introducing basic knowledge only, emphasizing key words for the students to master and sparing more time for language skills practice. He said his biggest gain from the instruction is the increased interest in the ME course.

Fan has also experienced perceptual changes in his understanding of English learning. For him, English was a linguistic tool for communication before, but he thinks English is more than a tool for communication now. Indeed English offers him a new way of thinking as shown by the following quote:

If it was before, I would say that learning English is for communication with foreigners, with people from the English-speaking countries. But now I would say it offers a new way of thinking. It enriches my mind and enables me to think in different ways. (Fan in the third post-unit interview)

Fan then gave example of how English helps him to think differently.

For example, I used to read the English textbook in this way. Whenever there are difficult words, I would look them up in the dictionary and get the Chinese meanings. That is, I think in the Chinese pattern of expression. When I read English, I had to transfer it into the language I am familiar with. But the structures of definition and classification taught in the class change my reading habit. I learn to read by following the language forms of English and think in English. Just like when I read the word APPLE, because I know the word well.

When I read it, I have the image of an apple in my mind and don't have to translate it into "pínggǒ"³⁷ to understand it. (Fan in the third post-unit interview)

Fan's explanation displays deep reflection on what English means to him as a language itself rather than a vehicle to learn. He also shows understanding of the conceptualization of language in cultural contexts, as can be seen from the following excerpt:

Sometimes I think English reflects the personality of the people in the English speaking areas because they have different history and living environment from us. For example, we Chinese like to ask "have you had dinner?" as a way of greeting. But if the westerners think in their own way, they would think we intentionally ask this question instead of greeting. (Fan in the third post-unit interview)

By relating English with the socio-cultural contexts that produce it, Fan is able to grasp the essence of English as a language itself. This is what Painter states saying, "learning a new language always involves learning at least something of the ways of operating in the society where that language is used" (Painter, 2001, p.167).

Fan's learning experience shows that the genre-based instruction has positively influenced a highly motivated student to a even greater extent because of his original interest in English. His understanding of the English learning needs is no longer confined in academic field and has been extended to a broader scope that draws his attention to the social cultural connotations of English as a language.

³⁷ "Pínggǒ" is the Chinese phonetic spelling for apple.

6.2.7 Summary of the Post-Unit Interviews

The post-unit interviews with the six students show that, except Yuan, they are all positive towards the genre-based instruction and accept the changes that were brought about by the instruction in the ME class. Based on the learning experience of these students in the interventional study, genre-based instruction has helped to reconceptualize the medical students' English learning needs by different degrees as summarized below:

- ◆ **Reconceptualizing English use in medical situations:** The instruction's most instant influence on these students is that the students have been helped to foresee how English will be used in future career situations. The different genres taught in the class have provided more information about how English will be used in their future career and how to broaden their views of the English learning needs. Three students have benefited most from this aspect of change, namely Fu, Hai, and Xiao. They originally perceived the usefulness of English within a somewhat limited scope (e.g. Fu for reading medical literature, Hai for job seeking, and Xiao for going abroad), but the instruction has helped them develop a more comprehensive view of English use in future career situations, ranging from oral academic communication to academic writing for different purposes such as medical recording and publishing. For Hai, the instruction also helps him envisage a future job in which English also has a role to play. In this sense, a new identity of a good doctor being able to gain information through English is created.
- ◆ **Reconceptualizing the value of English learning:** The genre-based instruction has developed an inclination to attach new value to English learning for two students: Ke and Fan. Both of the students are originally clear about their English learning needs for their future career. The instruction has pushed their

understanding of English to a higher level and they have begun to see the qualities of English as a language itself. English has provided them new ways of thinking and the cultural way of learning in addition to being a linguistic vehicle to glean medical knowledge.

But the genre-based instruction fails to change Yuan's resistant attitude towards medical English. Though clearly knowing in what aspects she will need English in the future, Yuan is overwhelmed by the external requirement to learn and has become indifferent to learning. Given that many first- and second-year students have also expressed the feeling of being forced to learn English in the focus group discussions in the first stage of research, Yuan's attitude and reaction to English learning may be quite representative of the larger student body. For genre-based instruction to better motivate these students, it has to be more tailored to the students' varied needs, real interests and personal experiences through the negotiation between the teachers and the students. Of course it would possibly achieve better and longer-term learning results if it lasts for a longer time because it may take more time for these students to change their ingrained attitudes through the genre-based instruction³⁸.

However, the interpretation of the interview data should be treated with caution. The intervention study does not adopt an experimental design to inquire about whether the genre-based instruction alone causes changes' in the students' conceptualization of English learning. The changes summarized above may not necessarily result from the classroom instruction. Other factors may come into play. For example, the

³⁸ There could be complicated reasons that explained the lack of change in the student, with GBP failing to take effect as one of the reasons. Discussion on other reasons is out of the scope of the present research. This thesis therefore confines the discussion to what the research findings imply for the GBP instruction.

students may get the information about English use in the future from other sources during the intervention study, such as medical subject teacher who talk about English use in his job in the medical subject class, or senior students talking about writing English article in personal conversations. The researcher as the primary instrument for data collection and analysis has its limitation as well. The students may go along with the researcher and magnify their learning from the instruction because they think this is what the researcher expects.

Of course, some steps had been taken to guard against these limitations of self-reported data from students to teacher/researcher. For example, during the interviews, the researcher always tried to clarify with the students if the changes of their perceptions resulted from the instruction during the case study, in so doing trying best to eliminate other factors of influence³⁹. And at the beginning of each interview, the researcher stressed the importance of talking frankly and telling the truth to help with the research, stating that the analysis of the real situation of ME learning would ultimately benefit the students themselves. Also, because all post-unit interviews were conducted through telephone, the face-to face factor did not have an effect. So telephone interviews essentially provided more scope for frankness. It was hoped that the reliability of the interview data could be enhanced in these ways.

6.3 Conclusion

³⁹ It was not easy to avoid leading questions during these interviews as the researcher had to clarify with the students if what they claimed to have learnt was due to the instruction in the ME class. However, the researcher began with more open-ended questions to allow the students to share their views freely. When the ME class was mentioned, follow-up questions were asked to probe their ideas further.

This chapter has presented and analyzed the data gathered for the first sub-question of the third research question, namely how the students' English learning needs are reconceptualized.

The questionnaire data reflect the overall influence of the genre-based instruction on the students' perception of ME learning in the following aspects:

- They have a clearer and more practical view of English learning needs in their studies and future career in the Chinese context.
- More of them think it necessary to learn ME.
- They pay more attention to language learning in the ME course.
- They have become more interested in the ME course.
- They believe the instruction is useful in helping them understand the role of English and the use of English in medical contexts.

In-depth analysis of the interviews with the six students indicates that the students' perceptions of English learning needs have been reconceptualized to different extents. Some of them have developed a more comprehensive view of English use in future career situations. Others have reconceptualized the value of learning English, considering it as offering new ways of thinking and a cultural way of learning in addition to being a linguistic vehicle to acquire medical knowledge. But one student was still resistant to learning medical English, and given the fact that there must be others with similar views, the implications are clear. Certainly the genre-based syllabus is a promising way forward but there is a necessity to negotiate the syllabus with the students, taking into consideration their varied needs, interests and personal experiences.

Chapter 7: Appropriating Genre and Genre-based Pedagogy

If we come across similar texts in reading, even when reading the Internet pages, we can create an image of structure in our mind, that is, visualizing the abstract ideas in our mind. ... this is a method of learning. It's better to teach fishing than to offer fish. ---- Fan in the second post-unit interview

Introduction

This chapter discusses the formation, development and transformation of genre and genre-based pedagogy (hereafter in this chapter GBP) in the minds of the students and the ME teacher. I delineate the processes of initiation, understanding and internalizing during and after the genre-based instruction in the intervention case study with the aim to answer the second sub-question of the third research question:

- ◆ **How are the concepts of genre and genre-based pedagogy conceptualized and transformed in the process of learning?**

By making use of the data from focus discussions, interviews, classroom observations, reflection logs, and student products (e.g. the students' oral or written texts in the class), the concept formation is presented as a process of appropriation and learning that happen in both vertical and horizontal dimensions, namely how genre and GBP are appropriated as learning or pedagogical tools in the ME class and how these are used as conceptual tools to reconceptualize the values and objects of ME learning and teaching. The following discussion is divided into two subsections, one on the ME teacher's conceptualization and the other on the students'

conceptualization, both of which are presented vertically and horizontally.

7.1 The Teacher's Conceptualization of Genre and Genre-based Pedagogy

The following subsections discuss Fang, the ME teacher's conceptualization of genre and GBP from two dimensions, namely the horizontal dimension where the concepts of genre and GBP develop from simple and abstract to complex and concrete and the vertical dimension where the concepts of genre and GBP help to change the object of the current ME teaching activity system and promote it to a culturally more advanced one. Before these discussions began, Fang's previous experience in teaching and learning English is introduced for better understanding of her conceptual changes.

7.1.1 Fang's Previous Experience in Learning and Teaching English

Fang, the ME teacher who participated in the intervention case study, has been briefly introduced in section 3.2.4.2. In this subsection, her experiences of learning and teaching English provides important background information about how she views language learning and teaching and serves as the basis to understand her conceptualization of the new concepts, namely genres and GBP during the intervention case study.

Fang began to learn English in the secondary school in the 1970s. She was taught to recite long texts and was interested in English at the very beginning. But the recitation did not offer her abilities to speak English well. The state of dumb English remained unchanged until she had the chance to take part in a training course in

Beijing in 1988, when she was trained in listening and speaking. She began to teach medical English in a medical college in north China in 1994 and later compiled the textbook, the third version of which was published in 2005 and used in the investigated context of the present research. For about ten years, she taught the medical English course in this way, to cite her words directly, *“I lectured most of the time. We didn’t have a lot of classroom activities. I explained the texts to the students word by word and sentence by sentence until finally the students learnt both the terms and the knowledge”*. (Fang in the interview held during the needs analysis)

Fang shifted to work in the current medical college in southern China after her PhD study and, as introduced in section 4.4.4, her medical English textbook was seen by the vice-dean of the college and she was appointed to lead the medical English teaching team in 2008. When comparing the teaching of medical English in the current college and in her previous college more than ten years ago, she commented that there were more interactive activities to train students’ competence in listening and speaking, but the training for reading and writing were still not enough.

As for the focus of the ME course, Fang thinks the most important one is for the students to master some basic medical terms. Understanding the difficult sentences in the textbooks is the second focus. Thirdly, some oral practice would be arranged for the students to practice the use of the terms just learnt. The mastery of basic medical knowledge and terminology is her teaching objective in each unit except the units about writing and translating skills (for samples of Fang’s original lesson plans, see

Appendix 6).

7.1.2 The Horizontal Dimension: Genre-based Pedagogy as a Pedagogical Tool

Fang's conceptualization of genre and GBP has undergone a horizontal dimension of development, as the concepts changed from abstract ideas into concrete classroom practice, from simple understanding to complex conceptualization, and from theoretical terms to practical, local, and immediate utility. There are four stages of development in the horizontal dimension. The following discussions borrow the word *appropriation* (Wertsch, 1998; Grossman, et al., 1999) to discuss the process of her conceptualization in these stages.

Deriving from Bakhtin, the word appropriation is used by Wertsch (1998) to refer to the developmental process of internalization that comes about through socially formulated, goal-directed, and tool-mediated actions that happens on the social (external) plane and are internalized (learnt) on the psychological plane (for more detailed introduction of the concept of internalization see section 2.5.1.2). This thesis adopts Grossman, et al.'s (1999) definition of appropriation to describe the developmental process of concept formation:

Appropriation refers to the process through which a person adopts the pedagogical tools available for use in particular social environments (e.g., schools, pre-service programs) and through this process internalizes ways of thinking endemic to specific cultural practices (e.g., using phonics to teach reading). (Grossman, et al., 1999, p.15)

Grossman, et al. (1999) also describe different levels of appropriation to represent a person's depth of understanding of the functions of a particular tool. The following descriptions draw upon some of their classification to present Fang's development of conceptualization of genre and GBP.

◆ **Previous understanding: conceptual confusion**

When the concepts of genre and GBP were introduced to Fang for the first time, she confused GBP with content-based pedagogy.

Researcher: Next I want to discuss *genre-based pedagogy* with you. This is what we're going to try in the class.

Fang: xx based? (She did not pronounce the word correctly)

Researcher: Pedagogy means teaching method. Genre is a French word. We translated it into Chinese *tī cí*.

Fang: I saw *content-based* somewhere. Are they the same?

Researcher: No.

Fang: Not the same?

Researcher: *Content-based* emphasizes the content materials the students learn.

Fang: Content?

Researcher: Well, that is the class is based on the content knowledge the students need to know. For example, the medical students learn English through the instruction of medical knowledge in English.

(Excerpt from the second pre-intervention focus discussion with Fang. The words in italics were originally English in the discussion. This applies to later excerpts that appear in the thesis)

It can be seen from the excerpt that Fang was neither clear about content-based

instruction nor aware at all of GBP, implying a lack of familiarity with language teaching pedagogies.

When the researcher began to explain how GBP was applied in language instruction in Australia, Fang seemed to have some ideas about the practical use of genre in situations, but her understanding is specious in that she still equated genre with content, as indicated by the following example given by Fang.

It is like what we call applied genres. For example, what exactly you want to do... you want to look for a job now. What kind of job you want to have, and what interviews you have to take. If my major is medicine, then what is interviewed will have to do with medicine. (Fang in the second pre-intervention focus discussion)

◆ Stage I: Appropriating a label

Appropriating a label is considered to be the most superficial types of appropriation when “a person learns the name of a tool but knows none of its features” (Grossman, et al., 1999, p.16). At the beginning of the third pre-intervention focus discussion when the researcher mentioned GBP, Fang said she had thought about the term after the previous discussion and was sure that she had heard about genre-based pedagogy before, but she did not know what was meant by genre-based. “*This is something new, but not totally new. I’ve heard about it before. (Fang in the third pre-intervention focus discussion)*” Knowing GBP by its label did not offer any new ideas to Fang. When the researcher further inquired about what GBP meant for a teacher in the class, she admitted that she did not know what the pedagogy really was and how it could be

used in the class.

When the term *genre* was translated into Chinese *tīcái*, Fang responded that she thought it was a literary concept which referred to different styles of writing such as narration and argumentation. She was surprised to know that genres also referred to everyday or academic texts.

Fang's narrow understanding of *genre* might result from what *tīcái* means in Chinese in the traditional way. In the discussion that happened after the first unit of genre-based instruction, Fang said the students have similar narrow understanding of the term because of the translation. She and the researcher finally decided to translate *genre* into *wéntī* in Chinese, which literally means the forms of language (for more discussion on the translation of *genre* in Chinese, see Section 8.1.4).

◆ Stage II: Appropriating surface features

In the third pre-intervention focus discussion, the researcher began to discuss *genre* and GBP with Fang in detail. It was found that as the discussion went along, Fang gradually picked up some basic features of GBP and was sympathetic to the principles that GBP advocates.

When the researcher explained that a basic principle of GBP is that teaching language should emphasize the importance of language teaching and learning at the discourse, or whole text level, rather than restricting it to the sentence level, Fang agreed and commented that many language teachers liked to focus on sentence levels

because it was easy to do and that the practice “*kept the students from seeing the whole forest*”. Later, when another principle of GBP was discussed, namely the teaching of grammar should be in conjunction with the teaching of whole texts, Fang consented again and her responses revealed that she had more understanding of the concept of genre.

Researcher: In conjunction with the teaching of whole texts. That means teaching grammar should be related to the *whole text*. Grammar cannot be explained without the whole text. So you can see that Systemic Functional Grammar doesn't talk about grammar in the traditional way. It's about how the overall arrangement of meaning is achieved.

Fang: What it means is actually the methods of language... of expression, the methods of writing.

Researcher: Yes.

Fang: It doesn't refer to the changes of tenses, persons, and so on.

(Excerpt from the third pre-intervention focus discussion with Fang)

The role modeling plays in GBP appealed to Fang. She said actually people learn their mother tongue in a similar way. She then gave an example of how she used to ask her students to imitate a given text for writing practice. “This is the most original way of learning a language.”

Although Fang gradually developed her understanding of genre and GBP and got to know some surface features, she still had no idea how to use GBP in the ME class until the end of the third pre-intervention focus discussion. She was especially confused about how GBP can be applied to teach the first two units in the case study,

namely the circulatory system and the nervous system. As the study progressed, the cooperation between the researcher and Fang was decreasingly guided by the formal concept of GBP and increasingly driven by the daily pragmatic concerns of teaching, especially how the genre-based teaching activities could be integrated into medical content instruction.

◆ Stage III: Achieving comprehensive understanding

Fang did not achieve a comprehensive understanding of genre until after the instruction of the second unit, namely the nervous system. In the fourth pre-intervention focus discussion, she explained what genre meant to her so far:

As far as I understand genre, I think it's something, say, an article written by a graduate or an academic report. ... If this is called genre, my understanding is different types of essays. For example, we write different abstracts. Some detailed one, some in a whole paragraph, and some divided into four sections. (Fang in the fourth pre-intervention focus discussion)

Fang's explanation of genre reveals that she only had writing genres in her mind and did not consider oral texts produced in specific situations to be genres too. This explained why she was very surprised when the researcher wanted to include clinical consultation as a speaking genre in the lesson plan of the first unit. The first unit of instruction team-taught by Fang and I (henceforth the researcher) introduced genres in both written and oral forms, such as definition description and clinical consultation (see Table 3.13 for the design of the genre-based instruction). Although the lesson plan of the genre-based part was mainly designed by the researcher, Fang displayed

recognition of genre as a broader concept different from the traditional one as she explained to the students in the class that the way the doctor talked to the patient was also a kind of genre.

In the second unit, another speaking genre, namely clinical discussion was introduced to the students. Before the students had the chance to practice orally, the researcher explained how it differed from clinical consultation because one contextual factor, namely tenor, was different. In the discussion after the instruction of the second unit, Fang told the researcher that the comparison of clinical consultation and clinical discussion was revealing to her as the following quote shows:

I used to ask the students to do oral practice directly without giving them a situation. I never explained what kind of situation it was and how it differed from others in this way. Now I know why speaking in different situations are different genres. And these are genres in oral forms. (Fang in the sixth intervention focus discussion)

The development of understanding of genre from a literary term, to applied genres, to writing genres, and finally to forms of oral or written texts in specific situations displays Fang's concept formation of genre. Her appropriation of GBP followed this path of thought, developing from knowing by label to knowing by surface features. As her understanding of genre became profound and comprehensive, she recognized GBP's conceptual underpinnings and expected GBP to bring about positive changes in her class, as will be presented in the Section 7.1.3.

◆ Stage IV: Utilizing practically and locally

So far Fang's concept formation happened at the theoretical level. It was in classroom practice that the theory was turned into practical utility and the abstract ideas became concrete actions.

◇ Implementing GBP in a new context

In the first two units of instruction, Fang taught the medical sections and the researcher taught the linguistic sections, which meant that before the third unit, Fang did not personally use GBP in the case study class, though she observed the researcher's teaching and might have got some ideas of how GBP could be conducted and modeled in the classroom. In the discussion after the first unit, Fang told the researcher that she taught the students in another class how to express definitions because she thought the practice was useful for the students.

When I was teaching the EIC class, I asked the students to practice defining. I suddenly had the idea. If it was useful for students, why not teach it to more students? There was not enough time to explain the concept of genre. But I introduced the sentence structures of definitions and asked them to explain some terms. (Fang in the second intervention focus discussion)

Fang thought the instruction was just "a passing whim" and she had failed to explain the genre of definition more intensively. Some students might not have understood it well, so she had to elicit their answers and draw their attention to the structures of the expression. Anyway, this episode was a proof that Fang could consciously use GBP

in new contexts, implying that she had moved an important step forward in the conceptualization of GBP, namely implementing GBP and experiencing the teaching effects independently.

◇ Making local and immediate utilization of GBP

As the case study proceeded, Fang not only appeared to be motivated to use GBP actively in her instruction, but also displayed the ability to make local and immediate use of the pedagogy. In the second unit of instruction, the original lesson plan was to ask the students to use the genre of classification and definition to *orally* describe the functional categories of neurons after the instruction on classification. But as the class was drawing to an end and there was only five minutes left, it was not possible to ask the students to practice orally and invite some of them to do it in front of the whole class. When the researcher looked at Fang to ask for her opinion, Fang turned to the students and told them to write the description instead of speaking it out. For a final version of this part of the lesson, see Task 4 in the handout of the genre of classification in the lesson plan of the nervous system in Appendix 6.

Later in the discussion after the unit, both Fang and the researcher reflected on this change of the lesson. Fang was not sure if the change was good and she admitted that the decision was made instinctively. She displayed the ability for critical reflection on this experience when she pointed out her doubt about the interchange of written and spoken genres.

We first introduced classification as a reading genre. If the students express the

classification orally, it becomes a speaking genre. But I've asked them to write it down, so it is a writing genre now. Is the change OK? I know there are differences between written and spoken English. (Fang in the fourth intervention focus discussion)

Fang's reflection led to the discussion of the differences in the structures and linguistic patterning of spoken and written texts. She and the researcher decided to draw the students' attention to the differences between spoken and written texts due to contextual factors such as mode and tenor. The discussion resulted in a task in the third unit that asked students to investigate the language events sequence in the clinical context and see how case history fitted into the context (see Task 2 in the handout of case histories in the third unit in Appendix 6).

❖ Using GBP as a pedagogical tool

In the last unit, Fang was responsible to design most of the lesson plan and implemented it in the ME class. Before that, she mainly acted as an observer when the researcher was presenting the linguistic sections. This last stage of case study observed how she began to use GBP as a pedagogical tool and transformed her original way of instruction in the ME class.

During the interview for needs analysis and the pre-intervention focus discussions, Fang mentioned several times that she wanted to emphasize the importance of reading skill to the students. According to her, what is being taught in the ME class is "the medical language in English", not "medical science"; and what she means by

“the medical language in English” is the mastery of “the words, terms, the phrases, and the sentences” in the text (Line 10 – Line 14 in Appendix 7). As can be seen from the excerpt from one of Fang’s ME class four months before the case study, Fang was particularly interested in the students’ pronunciation and comprehension of terms (Line 29 and 33). Fang’s instruction had drawn the students’ attention to sentence-level comprehension and actually no reading skill was taught.

In the last unit’s instruction in the case study, Fang displayed changes in her teaching method. But the changes happened step by step. Altogether there were 10 classes devoted to the third unit. In the fifth class when case history was taught, Fang followed the GBP lesson plan most of the time, beginning from the discussion on the purposes, audience and writing requirements of a case history (Line 01 – 11 in Appendix 8). She then turned to analyze the information structure of a sample case history (Line 12). But as she proceeded, she went into details about the text again and began to explain some terms in the case history, translating some of them into Chinese (Line 17 – 24). Although she finally switched back to the topic on information structure (Line 26), her straying away might have distracted the students and failed to help them create a clearly articulated pathway to learn how to analyze and understand the case history from the perspective of its genre structures. When reflecting on this part of instruction in the discussion later, Fang admitted that she unconsciously did it.

It always happens. I cannot explain as professionally as you do. I always follow my own thinking. (Fang in the eighth intervention focus discussion)

In the seventh class when teaching abstract writing, Fang appeared to be much more skillful using GBP. Though the discussion on the purposes of abstract writing is not planned previously (please see the lesson plan of abstract writing in Appendix 6), she began from talking about it, relating abstract writing to the needs of reading literature and publishing research articles (Line 09 – 26 in Appendix 9). The interviews with the six students after this unit showed that Fang's discussion in this part had successfully drawn the students' attention to the English learning needs in academic research, especially in reading and writing. Her later discussions, first on the genre structures (Line 27 – 43), then on tenses (Line 43 –54 and Line 61 –70), and sentence structures (Line 55 – 61), of different abstracts followed a very clear sequence, guiding the students' attention to effective comparison of different kinds of abstract writing.

It can be seen that at the end of the case study, Fang had made a great breakthrough in her instruction. Using GBP as a pedagogical tool, she had, to a certain extent, overcome the undue stress on comprehension at the vocabulary or sentence level and was able to relate a text with its purposes as well as the contextual factors and, in fact, begin the analysis at the discourse level.

7.1.3 The Vertical Dimension: Genre-based Pedagogy as a Conceptual Tool

At the same time when Fang's conceptualization of genre and GBP developed horizontally, from simple and abstract to concrete and complex; and the vertical dimension of development took place with the mediation of GBP as a conceptual tool

in the ME course. GBP's principles, frameworks, and ideas about teaching and learning English have helped her to develop new values in medical English instruction.

Fang's understanding of the ME course is that it should aim at teaching medical language instead of medical knowledge.

What I meant to do is to help the students develop deeper understanding of this language through the presentation of medical knowledge. But most of the time the students cannot see my purpose. (Fang in the second pre-intervention focus discussion)

Fang believed that GBP would help to change this situation. It will change her "teaching model", shifting the teaching focus from medical knowledge and terms to language instruction. "The change won't be qualitative. It will be a change in teaching techniques and content, that is, bringing about more variety," she said in the second pre-intervention focus discussion.

In the third pre-intervention focus discussion, Fang told the researcher that she had thought about how GBP could help in a new aspect.

The other day when we talked about genre-based pedagogy, I asked myself in which situations we could use it. At least it will be helpful to arouse the students' interest, to motivate them. (Fang in the third pre-intervention focus discussion)

As the case study proceeded, Fang's understanding of what GBP could bring about into the ME class developed as well. Though she could tell from the students'

reactions inside the classroom that GBP was working positively, it was the intervention focus discussions that kept her more informed of the students' responses to the genre-based instruction, as the researcher discussed the interviews with the six students with her. She witnessed the students' gain from the instruction: they were not only learning in which situations they need to use English, but also developing new learning skills, such as understanding text at the discourse level by making use of definition-making and classification (see Section 7.2.2.6 on Fang's learning), and creating new texts of their own through deconstructing and modeling the texts of others (see Section 7.2.2). Her original expectation of GBP to change **what** to teach in the ME class have been expanded to change **why** and **how** to learn English on the student's part. New values of ME instruction are therefore formed in her mind.

Fang: I think this teaching method has offered me a new way of thinking, a new way to teach medical English. I'd been thinking a lot about how to integrate those things about medicine with those about English before your research. I've got this feeling before, even when I was learning English myself, that when the teachers teach English, their purpose is to teach some terms and some special structures. But now, I think teaching both medical knowledge and English terms or expressions are far from enough.

Researcher: What do you think should be taught in the medical English class now?

Fang: How and why. I mean how to use English in different situations and why they need to use it in that way. Then it has to do with the academic activities that the students have to be involved with, now or in the future. In this way, they'll be more interested to learn medical English. And they'll know how to learn it, too.

(Fang in the post-intervention focus discussion)

Fang's appropriation of GBP into her instruction had finally re-conceptualized her own teaching object and transformed her original ME teaching activity system into a culturally more advanced one, the one that is mediated with new values of ME instruction and driven towards a renewed object, namely to help her students to re-conceptualize their English learning needs and to be armed with better learning skills, so that they can visualize the accessible opportunities in future career development and become really motivated to learn medical English.

7.2 The Students' Conceptualization of Genre and Genre-based Pedagogy

In this subsection, the students' conceptualization of genre and genre-based pedagogy is discussed, based on data from two sources: the genre-based instruction questionnaire survey of the whole class (No = 46), and the post-unit interviews with the six students for in-depth analysis. The former source provides general information on the students' views about the instruction, and the later gives specific details to build up some cases for in-depth analysis.

7.2.1 The Students' Overall Evaluation of Genre-Based Classroom Activities

Item 7 to Item 15 ask for the students' evaluation of the usefulness of the classroom activities that were carried out during the genre-based instruction in the class (see Appendix 4B). The descriptive data are presented in Table 7.1. One-way ANOVA reveals no statistically significant mean difference between these items. Given that

the mean differences of these items fall into the scope of 3.5870 to 4.1739, it can be concluded that the students' overall evaluation of the usefulness of these classroom activities was modestly high (5 = strongly agree). The students appear to like three activities (mean > 4), namely translation skills, case history writing and email writing, better than the other activities. Abstract translating and writing are considered to be less useful than the other activities. In the interviews with the six students for in-depth analysis, it was found that one important reason for this is the student's limited medical knowledge. The English research papers based on which they wrote the abstract is too difficult to understand. And the Chinese abstract that they had to translate into English contains too many unfamiliar medical terms⁴⁰.

Table 7.1: The Descriptive Data of Item 7 – 17 in the Genre-Based Instruction Questionnaire

Item	Mean	SD
7. The instruction and exercises on <u>definition making</u> are useful.	3.8667	1.0357
8. The instruction and exercises on <u>classification</u> are useful.	3.7778	0.7654
9. The oral practice on <u>doctor-patient interaction</u> is useful.	3.9130	0.9849
10. The oral practice on <u>doctor-doctor interaction</u> is useful.	3.8444	0.9282
11. The lesson about <u>translation skills</u> is useful.	4.0435	0.9179
12. The exercises on <u>case history writing</u> are useful.	4.1739	0.8247
13. The exercises on <u>abstract writing</u> are useful.	3.6875	0.8958
14. The exercises on <u>abstract translation</u> are useful.	3.5870	0.9086
15. The exercises on <u>email writing</u> are useful.	4.1522	0.7293
16. The teacher applied the pedagogy of "presenting sample → analyzing sample → producing new products". This pedagogy is effective.	3.9130	0.8648
17. The pedagogy is interesting.	3.5000	0.8367

Item 16 asks about the effectiveness of the pedagogy (mean = 3.9130) and Item 17 asks about the students' interest in it (mean = 3.5000). Both means are modestly high

⁴⁰ The translation skills mentioned in Item 11 of the Genre-based instruction questionnaire (Appendix 4B) refers to the Fang's lectures on basic skills of translation (see the third teaching activity in the third unit in Appendix 6), which did not involve student exercises in the class. While abstract translating was an assignment given in the class (see the sixth teaching activity in the third unit in Appendix 6). The survey reveals that the students like the lectures much better than the assignment.

too. Paired t-test finds significant mean difference between these two items ($P=0.003$), indicating that although the students agree that the pedagogy is rather effective, they do not think it very interesting. This finding is confirmed by some students' comments that the ME class is not interesting, as will be introduced later in this subsection.

Item 18, 19, and 20 are open questions, asking about the students' biggest learning from the instruction, what they like the most and what they like the least. The students' answers provide more information about how they think about the instruction. As can be seen from Table 7.2, the acquisition of medical knowledge about human body systems is mentioned 19 times as the biggest gain from the instruction. English language-related learning can be categorized into two broad fields: medical study contexts and medical working contexts. In total, the students mentioned the learning that fell into these fields 78 times. Learning medical terms in English ranks first in the learning in medical study contexts (frequency=21). Translation comes second (frequency=16). And the expressions of definition-making and classification come next (frequency=12). As for learning in the medical working contexts, 17 students mentioned writing important genres and 12 having workplace conversations. Three students' biggest learning from the instruction goes to the affective aspect, namely having more interest in the ME course or being willing to spend more time on the textbook.

Table 7.2: Students' Biggest Learning from the Genre-Based Instruction

Item 18: what have you learnt most from this period of learning?	Frequency
A. Learning of Medical knowledge: Medical knowledge about human body systems	19
B. English Language Related Learning in	78
a. Medical study Contexts	
1) Learning Medical terms in English	21
2) Translating reading materials from Chinese to English or from English to Chinese	16
3) How to make definitions or express classifications	12
b. Medical Working Contexts	
1) Writing important genres in working contexts, e.g case histories and abstracts	17
2) Having conversations with patients or colleagues in hospitals	12
C. Affective Learning	3
a. Medical English no longer boring	2
b. Willingness to spend more time on the textbook	1

It can be seen that the genre-based instruction had greatly balanced the students learning of medical knowledge and English language. Previously, the students acquired most was medical knowledge. And the biggest learning about English language was medical terms expressed in English, as indicated by the data from the focus group discussions with the students in needs analysis. But the post-intervention questionnaire reveals great increase in other aspects of English language learning, such as some basic language skills and important expressions (e.g. definition-making and classification). It is noteworthy that among the 12 students who thought their biggest gain was mastering the expression of definition making and classification, three of them expressed their use of these expressions as learning skills:

I have learnt how to memorize medical terms through making definitions.
(CS11's answer in the genre-based instruction questionnaire)

I have learnt how to memorize medical knowledge by categorizing what have been learnt through classification. (CS13's answer in the genre-based instruction questionnaire)

I have learnt how to better understand reading materials through the language structure of definition making and classification. (*CS19's answer in the genre-based instruction questionnaire*)

The gain in learning skills, though mentioned by three students only, indicates that explicit instruction on some important genres did help to develop learning skills of some students in medical English. The genre-based instruction helped them to create effective relation between language forms and purposes of language use.

Table 7.3 shows what the students like most about the instruction and Table 7.4 shows what the student like least. The findings from the two items are consistent. The activities that give medical knowledge and/or terminologies are most favored by the students (frequency = 24) and only two dislike them most. Activities that teach English language use in medical working contexts rank second (frequency = 19) in the list of favorite. A comparison between Table 7.3 and Table 7.4 reveal that 14 students like the activities of translation skills best, and only three dislike these most. Six students like the activities on writing skills best, but as many as 18 did not favor these. Among the activities that encourage English language use, for example those requiring conversations in clinical contexts are favored by 13 but disfavored by three students, and two students like the activities on definition making and classification while three dislike them.

Table 7.3: What the Students Favored Most in the Genre-Based Instruction

Item 19: what do you like most of this period of learning?	Frequency
A. Activities that teach medical knowledge and/or terminologies	24
B. Activities that teach English language use in medical working contexts	19
a. Writing	6
b. How to have Conversations in clinical contexts	13
C. Activities that teach English language use in medical study	16
a. Translating reading materials	14
b. How to make definitions and classifications	2
D. Activities that teach learning skills: Analyzing and using sample texts in study	1

Table 7.4: What the Students Disfavored Most in the Genre-Based Instruction

Item 20: what do you like least of this period of learning?	Frequency
A. Activities that teach English language use in medical working contexts	21
a. Writing	18
b. How to have Conversations in clinical contexts	3
C. Activities that teach English language use in medical study	6
a. Translating skills	3
b. How to make definitions and classifications	3
A. Activities that teach medical knowledge	2

To sum up the findings from Table 7.2, 7.3 and 7.4, the instruction on medical knowledge and/or medical terms, translation, and how to have conversations in clinical contexts is considered to bring about the highest level of learning by the majority, and naturally favored by more students as well. Although many students learn most from the instruction on writing, nearly the same number of students did not seem to like it. Among the 18 students who claim that they do not like writing, 16 point out abstract writing in particular. This is consistent with the finding from Item 13 that the students' evaluation of the usefulness of abstract writing is relatively low (see Table 7.1). The post-unit interviews with the six students revealed that an important reason for this is the difficulties posed by the reading of research articles including the reading assigned for learning abstract writing. They probably needed

considerably more time to understand the article before they could write the abstract.

Item 21 invites students to freely comment on the strengths or weaknesses of the instruction. 10 students applaud the cooperation between the medical teacher and the researcher. In particular, three of them think the teaching style is creative and two seem to have noticed the enlarged teaching content (the combination of English and medical knowledge). Five students give general comments that the teaching method is good. As for the weaknesses of the unit, six students think the class is boring and need to be designed with more interactive elements. Four think the teacher should impart only the simplest and most basic medical knowledge. And only three think the teaching content is neither coherent nor systematic.

To summarize the findings from Items 7 to 21, in the genre-based instruction questionnaire, genre-based instruction seems to be effective in drawing the students' attention to English language skills training and English language use in different contexts. Many students seem to believe that they have acquired knowledge of both medical subjects and the English language. In particular, they believe to have the chance to learn the knowledge of English language use in different contexts and relate language structures with the purposes of language use. The explicit instructions on genres have helped to develop new learning skills in a few students. Although the effect is not far-reaching, given that the genre-based instruction only lasted for four weeks, it can be expected that if the instruction is designed for a longer time, it has strong potential towards bringing about positive influence on more students' learning

skills. Indeed the time period was inevitably limited by the scope of the study, as recognized by students as well. In fact one student comments in Item 21 that the instruction is too short to benefit all the students.

It has been explained in Section 7.1.2 that *wéntī* was used to replace *tī cái* to avoid narrow understanding of the concept of genre among the students after the first week of genre-based instruction. Among the 46 students, only one student explicitly point out that he has mastered some important *wéntī*. Another student likes the analysis and use of sample texts in the GBP course best (see Table 7.3), indicating a growing consciousness in the procedures of genre learning. But, again, too few students have realized it, and one suspects that genre as a concept has not been formally developed among the majority of the students at the conscious level, nor has it been appropriated by label among most students. This possibility is also supported by the data from the interviews with the students. The next subsection presents, in greater detail, what the six students think that they have learnt and they have developed the concepts taught, thus helping us build up individual cases for in-depth analysis.

7.2.2 The Horizontal Dimension: Genre as a Learning Tool

The horizontal development of the student's concept formation of genre can be analyzed through the processes of the students' appropriation of genre as a learning tool in the ME class. The genre-based instruction had impressed the students by different degrees and the concept of genre was understood in a variety of ways. Different degrees of appropriation are achieved among the six students. The

following subsections introduce each of them as individual case first and summarize the students' learning in this dimension as a whole afterwards.

7.2.2.1 Fu

Fu's understanding of the concept of genre is deeply influenced by his prior familiarity with *tí cǎi* in Chinese. By the end of the case study, he still thought genre was a literary concept and was surprised that the researcher was so interested in a concept which seemed unrelated with medical English in his view.

Although failing to understand the concept any further, Fu appears to have appropriated some surface features of the specific genres that were taught during this period of study. For example, he remembered the structure of the sentence definition very well, as he recited that, *"That is, the word that you want to explain comes first, followed by a noun that describes its category. Then, you use a adjective clause to modify the noun."* He told the researcher that he had consciously used this structure in his answer when invited by Fang, the ME teacher, in class to explain "tricuspid valve". Here is his original answer:

Tricuspid valve, also called right atrioventricular valve, is a valve which is located in ... between the right atrium and right ventricle. (Fu on March 31 ME class)

After the second unit, he was very clear about how different interlocutors seemed to affect the way a conversation took shape:

One (speaker) is an intern, the other a resident. Both of them are doctors and they have the same academic background. So they will talk using a lot of medical terms. It is then different from the conversation between a doctor and a patient. (Fu in the second post-unit interview)

He thought the teaching pedagogy used in the study was “*rather traditional*” and “*can be easily accepted*”. At the same time, he realized that the teachers were teaching a new method of learning namely how to learn by modeling. But he thought creativity is also needed in order to extend the basis of learning by modeling, as expressed in the following quote.

If we want to write a lab report and we are not familiar with this kind of writing, we can follow a common format of lab report. But we can add something else, to create something personal. (Fu in the third post-unit interview)

Fu’s conceptualization of genre had developed moderately. Though his understanding of the concept was still influenced by prior knowledge of genre in Chinese literature, he was able to master some basic features of the specific genres that were introduced in the class (e.g. definition description and the conversations between the intern and the resident) and he did realize the usefulness of learning through modeling. In addition, he knew that during the process of modeling, “*something personal*” could also be added, showing great potential to move towards independent construction and thus gain more from the genre-based instruction if it had been lasted over a longer time frame.

7.2.2.2 Yuan

Yuan remembered the term genre in the first interview, but she failed to explain what it meant in her own words. She admitted that she did not use the method of definition structuring/forming consciously in the oral practice.

After the second unit, the concept genre did not impress her either, but she “*felt better about it*”. She said that she has learnt how to express classification and had intentionally used the method in the writing task (the one that requires the students to write a short passage to introduce the functional categories of neutron, see Task 4 in the hand out of the genre of classification in the second unit in Appendix 6). Like Fu, Yuan had also appropriated some basic surface features in the second unit as she mentioned the importance of paying attention to different speaking objects in different situations. But Yuan also displayed deeper degree of appropriation as she told the researcher that the way to express classification would help her with more effective reading later. That meant she had been able to see how the construction of meaning is realized through the recognisable and recurring patterns of a genre, and become motivated to use it as a tool in reading comprehension taking GBP learning beyond the classroom activities.

Yuan has also, to a certain extent, appropriated the teaching pedagogy as a learning method. She paid special attention to what the analysis of sample texts could help in writing.

If we don't read the sample texts, it's really difficult to write. We don't know what

standards, what model, or what structure we can follow to finish a piece of writing. (Yuan in the third post-unit interview)

Yuan had conceptualized genre to the degree that enables her to think about some genres, such as classification, as a useful tool in reading comprehension and the analysis of sample texts as a starting point of writing one's own text. But, like Fu, she did not develop a conscious understanding of the concept of genre itself.

7.2.2.3 Hai

Hai did not have any idea about the concept of genre even after the instruction of the first unit. And he admitted that he did not use the structure of definition to answer Fang's question. He even wrongly remembered that he was asked to define *capillary vessel* in the class, while he actually defined *systole*. It can be seen from Hai's answer below that Hai used two simple sentences instead of the compound sentence structure that was taught to explain the term.

Systole is also called cardiac contraction. It is one part of cardiac cycle. (Excerpt from the ME class on March 31)

After the second unit, he seemed to develop some understanding and began to relate the exercise on classification with genre. But his explanation of the concept revealed that he could only notice the differences in language forms, but failed to realize the "communicative purposes" (Swales, 1990) or "social actions" (Miller, 1994) that prompt and shape the production of genre. The short explanation as presented below also reveals his immature understanding of genre.

*Wéntī*⁴¹ is a classification of texts according to different ways of expression.
(Hai in the second post-unit interview)

Analysis of Hai's writing of abstract shows that he had included the four basic sections in the abstract, namely background, methods, results, and conclusion. But in the interview afterwards, he failed to tell the researcher what sections were included in his abstract, perhaps indicating that the instruction of genre structure of the abstract in the class did not impress him deeply enough to have sustaining effects.

In Hai's case, the genre-based instruction did better in helping him foresee in what situations English would be used (see Section 7.2.3) in the future than in teaching him how genre can be used as a learning tool. His conceptualization of genre and appropriation of genre as a learning tool did not develop substantively.

7.2.2.4 Ke

Ke also thinks genre is originally a literary term. He had initial understanding of genre after the first unit by relating the language forms with the different contexts in which the language is used as we can see in the following extract.

Tīcái seems to be...like we express differently in different situations. This concerns tīcái. Besides this, there is something about literature. (Ke in the first post-unit interview)

His understanding developed after the second unit when he defined, in the excerpt

⁴¹ In the first unit, both Fang and the researcher used *tīcái* in Chinese to refer to the concept of genre. But in the second and third unit, *wéntī* was used for the students to understand the concept better. In the excerpts cited in this thesis, whichever term was used, the Chinese *pingying* was kept to show the original choice of word of the students.

below, genre in his own words again, identifying audience as a contextual factor:

That is, we express differently according to the comprehension level of the audience. We can have different ways of expression to make ourselves understood. (Ke in the second post-unit interview)

Ke said that he had intentionally used what he had learnt in related practice such as making definitions, role-playing the conversations in clinical contexts and describing the functional categories of neurons. Like Yuan, he has also appropriated some conceptual underpinnings of genre and thought the method of describing definition would be helpful in improving his reading abilities because it enabled him to understand the text at a deeper level. He was willing to use the new reading skill in future study, namely forming an idea framework of what was read instead of focusing on understanding the text word by word and sentence by sentence.

Ke thought the way the teacher taught in the ME class during the four weeks was good. He was also able to appropriate specific input as a learning method, namely learning to write through modeling. But he thought simple modeling deprived learners of the chance to think independently. He suggested (excerpt below) including the step of independent thinking before giving sample texts to read.

It [the teaching method] is good. But I think we should think independently at the very beginning. If we are asked to write a case history, first we can think by ourselves what should be covered in the case history and how it can be expressed correctly. Then we'll have clearer ideas of what to expect when we begin to read the sample texts. (Ke in the third post-unit interview)

It can be seen that Ke's conceptualization of genre had achieved a rather high level as he was able to see genre as "*social processes existing in specific cultural contexts and fulfilling specific communicative purposes*" (Hammond & Derewianka, 2001, p190) and identify the contextual factors that distinguish different genres. His suggestion to have independent thinking prior to modeling reflects a critically reflective view of the GBP that was used in the class, though he, like other students, was not told the name of the teaching pedagogy at all.

7.2.2.5 Xiao

Xiao did not have any idea of the concept of genre after the first unit. Though she had learnt from the instruction on definition, she was confused why the researcher regarded definition as a genre. She was still confused after the second unit and insisted on treating wéntī as what it originally means in Chinese.

Calling it wéntī reminds me of the Chinese meaning, of what we usually mean - the literary styles. I just cannot relate it to what you say in the class. (Xiao in the second post-unit interview)

Despite not being able to appropriate genre by label, Xiao appropriate some surface features of the instructed genres pretty effectively and was also able to understand their conceptual underpinnings and ultimately use the ideas as learning tools. For example, she thought the section on definition is good because it linked language expressions with the medical knowledge they had just acquired.

I think definition making can be useful when we're learning other body systems.

Usually the texts are very long, if we can recognize definitions as we read along, we can understand the text better and memorize it more easily. That is, we can use the techniques of making definition taught by the teacher to define new terms in the reading. In this way, we glean medical knowledge and learn English at the same time. And we can transfer what we have just learnt to something we really know. We will be much more impressed. (Xiao in the first post-unit interview)

In the class, Xiao was invited to define *ventricle*. She used a standard sentence as a definition to answer the question:

Ventricle is one of the lower chambers of the heart which contains right and left ventricles⁴². (*Excerpt from March 31 ME class*)

According to her, she used to answer questions in broken and disorderly sentences. But the instruction on definition making drew her attention to some sentence structures or phases that could help her express ideas more clearly and logically. She has similar gain from the instruction on classification, which enables her to memorize new information according to its knowledge structure instead of falling back on translating the English text into Chinese.

Xiao not only appropriates genre as a learning tool in ME, but also shows the insight to generalize it into the learning of other subject when she said the techniques of definition making and classification could be used in the learning of other subject, especially when previewing new lessons. She also considers the analysis of sample texts to be a good learning method in providing an awareness of other people's

⁴² The choice of verb "contain" was discussed in the class. Xiao's answer will be cited again in Section 8.2.2 to display the integration of medical knowledge with language knowledge in the ME class.

“*thinking path*” in writing. It can therefore be concluded that she had also appropriated genre to a rather high degree.

7.2.2.6 Fan

Fan displays a certain level of understanding of genre when he referred to it as “*the style or manner of writing*”. But all the time he understands the concept by relating it to the specific genre that had been taught in the unit, in the first unit definition and in the second unit classification, as can be found in the following excerpts:

I think tǐcái is the style or manner of writing. It's a method. You told us in the class that there're three ways of expression, using phrases, sentences, or a whole paragraph. (Fan in the first post-unit interview)

According to my understanding, it's a kind of... First, there is something logical in it, classifying the things. And it groups the things together according to the logic. There is variety since different logic may result in different combination of language. But I don't know the Chinese meaning. It's too difficult to find a word to explain [this concept]. (Fan in the second post-unit interview)

The instruction on classification had deeply impressed Fan. He thought the techniques used to express classification would help him both in reading comprehension and writing. He considered the instruction of these techniques to be learning skills that will be very helpful in later study as the quote (parts used at the outset of this chapter) suggests.

If we come across similar texts in reading, even when reading the Internet pages, we can create an image of structure in our mind, that is, visualizing the abstract

ideas in our mind. ... this is a method of learning. It's better to teach fishing than to offer fish. We can use this method in the other chapters of the textbook or even in the other subjects. It is very helpful.

(Excerpt from the second post-unit interview with Fan)

Like Xiao, Fan was able to generalize genre learning as a learning tool into other areas of ME study and learning of other subjects. He was even keen to identify how learning about genre had changed his original way of reading.

I used to read the textbook in this way. I looked up all the difficult terms in a paragraph and was usually confused because of too much attention to the single words. Now I can divide the paragraph into several sections according to how many definitions are provided. For example, this group of sentences may be about atria, that group about ventricles. In this way, I read and understand the text according to the hierarchy of the paragraph. ... I used to passively accept the message from the text. Now I try to understand the message actively during reading. (Fan in the first post-unit interview)

In addition, his appropriation of the conceptual underpinnings of genre seems to have enabled him to reflect on a past experience and relate it with what he had just learnt from the ME class as shown in the quote below.

In particular, the oral practice on the conversation between the patient and the doctor is very interesting and impressive. It reminds me of an experience of seeing a doctor. Once I had allergy in the skin and my mother took me to the hospital. The doctor explained in detail and my mother listened very carefully. He was very professional. But I couldn't understand him at all. Now I realize what was wrong: he didn't realize that he was speaking to the layman. He used a lot of academic terms. And this is an obstacle in understanding in conversations

between the patient and the doctor. (Fan in the third post-unit interview)

The interviews with Fan reveals that he not only generalized what he had learnt in the case study into other aspects of learning, just as Xiao does, but also generalized it into daily life experience, which allowed him to grasp the essence of any language in use. His conceptualization of genre during the case study had reached a much higher level, if compared with the other students under the in-depth analysis.

7.2.2.7 Summary of the Horizontal Development of the Student's Concept Formation of Genre and GBP

Most of the students were confused about the concept of genre at the very beginning, understanding it as a literary term due to their prior knowledge in learning Chinese. By the end of the case study, some of them (e.g. Fu, Yuan, and Xiao) did not understand the concept any better than they did at the beginning of the study. Hai and Fan were able to see genre as the forms of language expressed in particular situations. Only Ke had conceptualized it to the extent that he could explicitly connect the language forms with contextual factors like audience and seemed to understand genre as a form of social action.

The six students have appropriated genre as a learning tool to different degrees. Despite the conceptual confusion, all students were keen to appropriate the surface features of the specific genres taught in the class and did use these features in related practice. For example, they came to know how definitions or classifications were expressed through certain grammatical structures, or how conversations in the

clinical contexts change with the change of interlocutors. Some students (e.g. Yuan, Ke, Xiao, and Fan) appropriate genre to an even greater extent in that they were able to view the way language meaning is systemically realized by language structure as a learning tool. Take definition as an example. Yuan, Ke, and Fan could see the use of their familiarity with the structure of definition as a reading skill to help them get rid of the original habit of reading word by word and falling back on English-Chinese dictionary all the time. Xiao thought it to be more than a reading skill. Rather, it is a learning tool through which the knowledge related to medical subjects and English language converge to create enhanced learning results. Generalization is the symbol of a higher degree of appropriation. Xiao generalized the use of definition and classification into other subject learning. Fan generalized the influence of interpersonal relationship on conversation from English learning to daily life experience in the Chinese-speaking context.

All students except Hai view the way to read and analyze sample texts and produce new texts as a useful learning method. Some students (such as Fu and Ke) have appropriated GBP as a learning method to a higher degree in that they do not passively accept it; rather, they are able to reflect on it critically and come out with their own ideas of how to utilize it to enhance learning, such as adding something personal or having independent thinking before analyzing sample texts.

7.2.3 The Vertical Dimension: Genre as a Conceptual Tool

The vertical dimension development of the students' conceptualization of genre is

reflected by how they transform the values of ME learning in the genre-based instruction using genre as a conceptual tool. The different genres used in specific learning or working situations introduced in the case study have helped the students to foresee in which situations they will need to use English in a similar way, resulting in the reconceptualization of the English learning needs and the transformation of the values of English learning in the ME class. Section 6.2 has introduced the six students' perceptual changes in English learning needs. This subsection will not go into too much detail. Instead, it summarizes the changes in each student by highlighting the specific genre(s) taught in the class that might explain the changes listed.

The specific genres that were taught in the case study have aroused the students' attention to different situations in which English will be used in their study or future career development because the explicit instruction of genre included not only explanations on the genre structures and linguistic patterns, but also the contexts or situations in which the genre is used. By asking the students' ideas about the objectives of the classroom activities that are designed to accompany the instruction of different genres and what they have learnt from these activities in the interviews, the researcher was able to identify what the students had learnt about future situations of English learning from the genre-based instruction. The comparisons of their previous and present understanding of English learning needs provides important message of the perceptual changes. Table 7.5 summarizes these findings as supporting evidence of the students' appropriation of genre as a conceptual tool in

Table 7.5: The Student's Perceptual Changes in English Learning Needs Brought about by Genre-based Instruction

Student	The Instructed Genre	The Perceived Situation of English use	Previous Understanding of English Learning Needs	Present Understanding of English Learning Needs
Fu	Definition	Articles writing; Literature reading	Reading English materials about medicine	Reading literature; Attending English lectures at home or abroad
	Case history and abstract writing	Articles writing		
	Medical class lecture	Academic situations to obtain information		
	Cover letter and bio writing	Articles publication		
Yuan	Case history and abstract writing	Articles writing; Literature reading	Communicating with medical professionals; Getting information about new techniques and research; Knowing about imported equipments and medicine	The same as before
Hai	Definition	Occasions to Communicate with foreigners	Reading English in exams; Learning English well to find a good job	Reading articles and textbooks; Learning English well to become a good doctor
	Flash video and medical class lecture	Academic conferences		
	Abstract writing	Articles writing; Literature reading		
Ke	Definition	Reading English materials	Learning English as a course	Learning English as a tool to communicate and to get information; Learning English to know how people Express thinking
	Abstract writing	Articles writing; Literature reading		
Xiao	Expressing definition and classification	Articles writing; Literature reading	Learning English to study abroad	Communicating in academic contexts; Reading English literature; Publishing English articles
	Clinical consultation and discussion	Communication in clinical contexts		
	Writing case history	Keeping medical records in workplace		
	Writing abstract	Articles writing; Literature reading		
Fan	Expressing definition and classification	Articles writing; Literature reading	Learning English as a communicative tool	English offers a new way of thinking; English offers chances to know about other cultures
	Clinical consultation and discussion	Communication in clinical contexts		
	Writing abstract, cover letter and bio	Presenting in academic conferences; Articles publication		

As can be seen from Table 7.5, different genres that were taught in the ME class have drawn the students' attention to the situations in which English needs to be used. The students perceived differently. For example, definition making was understood by some (e.g. Fu, Xiao, and Fan) to be useful in situations where articles writing or literature reading was needed. But for Hai, it was enlightening in that it could help him better express himself in communication with foreign medical professionals by making use of the relevant sentence structures. For Fu, the instruction on abstract writing was only related to article writing in the future. For Hai, Ke, and Xiao, abstract writing was also helpful in literature reading in that awareness of the genre structure also improved reading comprehension. And for Fan, abstract writing was also essential for attending academic conferences. Though Fang, the ME teacher, had explained to the students why they need to write abstract (See Line 19 – 16 in Appendix 9), the students received the information and perceived it individually. However they perceive and conceptualize the genres being taught, they have appropriated genre as a conceptual tool to transform the value of English learning to a certain degree. The only exception is Yuan, who, though clear about the English learning needs all the time, was still resistant to learn English in the ME class after the case study (see Section 6.2.2).

Russell (1997) has discussed how genre mediates change in individual through appropriation. He (ibid) identifies the appropriation at two levels; first the appropriation of the genre of a discipline as a tool to participate the activity of that discipline; and second, the appropriation of the object and identity of the new activity

system.

Moreover, as an individual appropriates (learn to use) the ways with words of others, they may (or may not) also appropriate the object/motive, and subjectivity (identity) of the collective, of a new activity system. (Russell, 1997, p.516)

Teaching medical freshmen in the framework of GBP can not achieve both levels of appropriation easily because they are still at the elementary stage of medical study and it is neither necessary nor effective to really involve them into the activity system of the medical profession. The teaching practice can do such a job for medical students at the advanced level when they are about to graduate and become new members of the profession. Therefore, in the present research, the students' appropriation of genre as a conceptual tool is only reflected by how they reconceptualize their English learning needs (the object of medical English learning activity system rather than the object of medical practice activity system). A surprising outcome from the case study is one student, Hai, was found to have changed the understanding of his future identity in terms of moving from being a mediocre doctor for whom it is not necessary to learn fluent English to a good doctor with English proficiency to be familiar with the outside world. It is therefore not overly optimistic to believe that if the ME course can be redesigned to be held every year, as suggested by the results of the needs analysis in the present research, and if the genre-based instruction can be integrated into the overall ME course, the learning results that Russell points out would possibly be produced and the students would likely be helped to establish new identities of novice entrants to the community of

practice of the medical profession.

Conclusion

This chapter has discussed how the ideas of genre and GBP were conceptualized and transformed by the ME teacher and the students during the genre-based instruction in the case study to answer the research question posed in the beginning of the chapter. The term *appropriation* has been adopted in the discussion to describe the developmental process of concept formation.

In the horizontal dimension, the teacher's understanding of genre and GBP had developed from abstract and theoretical ideas to concrete classroom practice, appropriating the ideas as pedagogical tools. Though the concept of genre did not theoretically develop among most of the students, they were able to appropriate genre and GBP as learning tools, appropriating the surface features of some specific genres in related practice and realizing the possibility of utilizing the way language meaning is systemically realized by language structure in reading.

In the vertical dimension, genre and GBP had been appropriated as conceptual tools in the teaching and learning of ME. GBP's principles, frameworks, and ideas about teaching and learning English had helped the teacher to attach new values to ME instruction and establish new object for the ME course, namely to familiarize her students with the situations in which they need to use English in the future and train them to develop learning skills, so that they become both motivated to and capable of

learning medical English. On the students' part, the genres used in the specific situations enabled them to foresee the role English would play in their future career and helped them reconceptualize their English learning needs. One student was even in the process of developing a new identity for his future with the help of genre-based instruction. But at the same time, an exception was found, implying the necessity to consider factors such as the students' previous experience of learning English and personal interests in the genre-based instruction so that more students would benefit from the instruction in the future. One student, though knew about the English learning needs clearly all the time, remained resistant to ME learning because of the overwhelming requirement imposed externally.

Again, the conclusions in this chapter should be interpreted with caution because most of the data concerning the students' learning came from the interviews with the six students for in-depth analysis. They are not assumed to represent the views of all medical students in the case study. The most suitable remedy for this shortcoming, in this research study, has come from triangulation with data from the genre-based instruction questionnaire as well as classroom recordings, which provide a general picture of the views and actions of all the case study students.

The learning that happened in the interventional instruction was mediated by the genre-based pedagogy that was introduced into the ME class by the researcher. The next chapter will focus on how the researcher and the ME teacher crossed the boundary between the discipline of English education and medical education to bring about expansive learning.

Chapter 8: Crossing the Boundary of Disciplines

I'm more relaxed to explain medical knowledge in English because it's something I'm familiar with. But these are things new to me, not my specialty. I don't think I can express myself well in English. ---- Fang in the post-intervention focus discussion

Introduction

This chapter focuses on the boundary-crossing actions of Fang (the ME teacher) and the researcher, delineating how the pedagogic actions took place across the boundaries of general English teaching and medical English teaching, how they evolved in different stages of the case study and how bilateral benefits were brought about during this process. It is aimed at answering the last sub-question of the third research question:

- ◆ **How does boundary-crossing happen to facilitate the genre-based instruction?**

There are two sections in this chapter. The first section depicts the boundary-crossing actions as expanding and evolving all the time in the expansive learning cycle, driven by the occurrence and resolution of contradictions. The second section presents the boundary-crossing actions as bilaterally beneficial assisted performance and discusses the learning of both participants (crossers) in the process of boundary-crossing.

The data for the findings in this chapter come from different sources, namely the

lesson plans and teaching materials, the implemented lessons, the focus discussions and telephone/email exchanges between Fang and the researcher, the classroom observation protocols filled by the researcher, the post-unit reflective logs written by Fang, and the research journals written by the researcher. Some steps were taken to enhance the trustworthiness of the data:

- All data were recorded to keep track of all the things done and all the thoughts that were articulated during the case study. For example, all verbal data including focus discussion and phone calls were recorded and transcribed verbatim. All lessons were video-taped and some parts of them, if considered relevant for providing important data, were transcribed verbatim. The email exchanges were printed and retained.
- Fang was involved in some data analysis, such as the analysis of classroom instruction based on the recorded lessons, the observation protocols and the reflective logs. After each unit of instruction, she and I watched the recorded lessons together, discussing the likely and observable effects of genre-based instruction and possible way of improvement before moving on to design new lesson plans and teaching materials.
- The interpretation of the boundary-crossing actions and learning presented in this chapter was also discussed between Fang and I in the focus discussion after the intervention instruction. In particular, the cycles of boundary-crossing actions, the contradictions that arose during the case study and the boundary-crossing learning were all discussed with and authenticated by Fang.
- Although auto-ethnography is becoming recognized as a useful method (Anderson, 2006), verification was also done through the researcher's personal reflection by writing the research journals all the time.

8.1. The Boundary-Crossing Actions in the Expansive Learning Cycle

This section discusses the boundary-crossing actions in the present research from four aspects. The first two pertain to boundary-crossing actions which: a) were the horizontal movement across two different disciplines; b) happened in cycles; and the next two aspects concern: c) how the boundary zone was expanded all the time; and d) in what ways the contradictions drove the boundary-crossing cycles to evolve in an expansive learning cycle.

8.1.1 The Horizontal Movement across Borders of Disciplines

The development of mind, or learning, as mentioned earlier, happens along two dimensions that comprise the vertical movement across levels and horizontal movement across borders (Engestrom, 1996). When two or more different activity systems are concerned, multivoicedness of meaning in the different, complementary and also conflicting tools, rules, and patterns of social interaction will inevitably involve dialogic problem solving, calling for ‘boundary crossing’ between these activity systems through formation of new mediating concepts (Engestrom, et al., 1995). Boundary crossing is therefore the horizontal movement across borders as two or more activity systems collaborate.

In the present research, I acted as the boundary broker who brought a new mediating concept, namely genre-based pedagogy, into the activity system of ME instruction.

My own identity as a general English teacher meant that I did not simply enter into the activity system of ME instruction as a researcher; rather, I brought into the other’s field the ideas, beliefs and norms from my own discipline of general English

teaching. Given that in the investigated context the ME teacher is a medical professional, the border actually was located between the discipline of English language teaching and that of medical subject teaching.

The boundary-crossing actions in the present research involved a series of two-way interactions, mutual engagement and collaboration inside and outside, before and after the ME class. They can be summarized as follows:

- ◇ Analyzing the existing problems in medical English teaching;
- ◇ Examining and debating the theory orientations of genre-based pedagogy and its practice in ESP classrooms within different contexts;
- ◇ Discussing and designing contextually sensitive genre-based lesson plans and teaching materials;
- ◇ Implementing the genre-based lesson plans in the medical English classroom;
- ◇ Reflecting on the genre-based instruction in the class and evaluating the learning outcomes.

8.1.2 The Boundary-Crossing Actions in cycles

The boundary-crossing actions in the present research did not stop within one cycle; rather, after the initial pre-intervention boundary-crossing actions, we detected three small cycles that matched the three units of ME instruction in the intervention case study.

◆ Pre-intervention boundary-crossing actions:

- ◇ Analyzing the existing problems in medical English teaching
- ◇ Examining and debating the theoretical orientations of genre-based pedagogy and its

◆ **Intervention boundary-crossing actions:**

➤ **Cycle 1:**

- ◇ Discussing and designing genre-based lesson plans and teaching materials,
- ◇ Implementing the genre-based lesson plans in the medical English class,
- ◇ Reflecting on the genre-based instruction in the unit taught and discussing possible improvement for the next unit.

➤ **Cycle 2:**

- ◇ Consolidating the learning outcomes by designing new lesson plans,
- ◇ Implementing the genre-based lesson plans in the medical English class,
- ◇ Reflecting on the genre-based instruction in the unit taught and discussing possible improvement for the next unit.

➤ **Cycle 3:**

- ◇ Consolidating the learning outcomes by designing the next lesson plans,
- ◇ Implementing the genre-based lesson plan in the medical English class,
- ◇ Reflecting on the genre-based instruction in the unit taught and discussing possible improvement in the later instruction.

◆ **Post-intervention boundary-crossing actions:**

- ◇ Reflecting on the overall genre-based instruction and evaluating the learning outcomes,
- ◇ Discussing the possibility of using genre-based pedagogy in the ME course in the future.

8.1.3 The Expanded Boundary Zone in the Boundary-crossing Actions Cycles

The three cycles of boundary-crossing actions, within the process of teaching the three units, did not simply repeat themselves; rather, they appear to be expansive in both activity setting and boundary zone.

Activity setting refers to the “contexts in which collaborative interaction,

intersubjectivity, and assisted performance occur” and it incorporates both “the cognitive and motoric action itself (activity)”, and “the external, environmental, and objective features of the occasion (settings)” (Tharp & Gallimore, 1988, p.72). In each cycle, the activity setting of boundary-crossing actions expanded from the out-of-class setting to the in-class setting. The former had two participants, namely Fang and I, and was usually in Fang’s office. The latter involved many more participants, namely the class of 46 students, and a bigger spatial locus (i.e. the classroom) that allowed more activities and interactions between the participants. The boundary-crossing actions that occurred in the expanded activity setting therefore involved the third party and extended their influence.

Kramsch (1993) uses “contact zone” to describe the important learning and development that takes place as people and ideas from different cultures meet, collide and merge. And Konkola (2001, cited in TuomiGrohn et al., 2003) proposes “boundary zone” to describe a place where elements from both activity systems are present and where it is possible to integrate the different perspectives of the different activity systems and create a shared boundary object. In the present research, boundary zone is used to refer to both the *place* where elements from both activity systems are present and the *scope* of involvement into the other’s activity system at the time when the border-crossers cross the border. The expanded boundary zone in the present research are marked by more and more interaction of ideas from both activity systems and more and more involvement of the border-crossers into each other’s activity system, as the boundary-crossing actions re-occurred in strengthened

cycles. It is demonstrated by the changes that took place in the two activity settings of the boundary-crossing actions: first, the focus discussions out of class and second, the instruction in the class.

In the focus discussions before and after each unit, the foci of discussion shifted from specific details to more general considerations of the lesson plans. In the classroom instruction, the division of labour between the two participants blurred as they became more and more involved into the other's field. These changes were discussed in the three boundary-crossing action cycles below.

8.1.3.1 Cycle 1--- The unit of the circulatory system

The discussions that dealt with this unit focused on how to integrate the medical sections with the genre-based sections and how to transit naturally from the former to the latter. Fang appeared to be more concerned about the explanation of some terms that were used to describe the tasks the students would have to accomplish in the class. For example, she was confused about *language devices* in the handout (e.g. see Task 1 in the handout of the genre of definition making in Appendix 6), saying that she thought *device* referred to an equipment, such as heart assisting device. I paid more attention to whether some medical ideas were correctly expressed. For example, I was not sure if it was right to summarize the two sentences that describe the structure of pericardium as *peripheral structure* and had to ask for Fang's opinion. Discussions that concern these specific details reflect the focus of attention on the set of knowledge that was particular in the other's field as Fang and I first ventured into

the other's activity system.

This stage of instruction was characteristic by explicit division of labour between us. The lesson was planned to make full use of each other's specialty because both of them agreed that the students would see Fang as more authoritative to present medical knowledge and I as more knowledgeable to discuss linguistic problems. This can be demonstrated by the following episodes from the class.

❖ Episode 1

(I stressed the importance of reading in English for medical study and medical career development before introducing the genre of definition to the students. I invited Fang to talk about why she needed to read in English.)

Researcher: How about the second question? For what purposes do you read as a medical professional? We have a medical professional here. Dr. Fang, I know you read a lot in English. Why are you reading?

Fang: As professionals we try to do some research, and we try to find some clues. We need to know the most advanced ideas in the current research. Also, there are many new techniques in medical research. So we must get some information of how to use them.

Researcher: So it's also ... The most important thing is you get to know some information about your field. With the information, you can do the research. You can develop your career. Thank you, Dr. Fang.

(Excerpt from the ME class on Mar 31)

In this episode, instead of telling the students myself, I thought Fang was in a better position to tell the students why they would have to read in English as medical professionals because Fang was a medical professional involved in a

lot of reading of published literature in English. .

❖ Episode 2

(I analyzed an extended definition with the students. In order = to draw the students' attention to the sequence of information in the description of an organ, I invited Fang to confirm what she said.)

Researcher: And question four, in what sequence is the passage organized?

From general to ...

A student: Detailed.

Researcher: To detailed, or specific. So the passage is organized from general to detailed, or specific. How about when it is talking about the structure? It's from ...

Some students (together): outside to the inside.

Researcher: From outside to the inside. Dr Fang, is it usually the case that when we describe an organ, we talk about it from the outer to the inner?

Fang: Yes. We talk about the structure of an organ, usually from outside to inside, from peripheral structure to the innermost structure. That's the way. We must describe it in order. Not here, there, here, there.

Researcher: Yes. Can you give another example here?

Fang: Yeah, the structure of the cell. Do you remember?

(Some students laughed.) A student: It's last semester.

Fang: Yeah. We learnt about the cell last semester. How do you describe a cell? It's from the membrane, then to the cytoplasm, then to the nucleus. Describe it from the outside to the inside.

Researcher: Thank you. A very good example. Now I know how to describe organs!

In this episode, I knew that a common sequence of describing an organ is from outside to inside, which I had discussed with Fang before the class. But in the

class I intentionally involved Fang in the analysis because I wanted Fang to explain more with another example.

◇ Episode 3

(Fang asked a student to explain myocardium. She pointed out the student's grammatical mistake in the answer and wanted me to confirm it.)

Student: Myocardium is the thick ... thick muscles constitute a part of the heart.

Fang: Is the thick muscles constitute a part of the heart. Here, we can't use constitute directly. Am I right, Miss Yang?

Researcher: Yes. Is the thick muscles that constitute a part of the heart.

Fang: Yes, *that*.

Researcher: Or *which*. You should use *that* or *which* to link the clause with the key word.

Fang: Yes, the thick muscles that constitute ... don't miss *that*.

The above episodes show how Fang and I made use of our expertise to impress the students in the ME class. Our division of labour was clear cut: Fang was responsible for the input that concerns medical knowledge and I had to explain language use. When we came across issues that fell into the other's field, we naturally turned to the other for confirmation and explanation.

8.1.3.2 Cycle 2---- The unit of the nervous system

The focus of discussion for the lesson planning of this unit was on how to present different genres through both contextual analysis and linguistic analysis⁴³ as new

⁴³ According to So (2005), contextual analysis refers to the analysis of genre types and subtypes, of context of situation displayed in the parameters of field, mode, and tenor, of the communicative purposes, and of the institutional practice or community of discourse. And linguistic analysis refers to the analysis of schematic structure, linguistic features, and intertextual analysis. For details see So, 2005, p.70.

genres were introduced to the students and the focus of instruction was on what made the genres different. Fang was still interested in the metalanguage appearing in the lesson plan, such as *field*, *tenor* and *mode*. At the same time, she began to attend more to the tasks that the researcher had designed for each activity. For example, she was particularly interested in Task 3 for the listening comprehension which asked the students to analyze the contexts and language of the listening materials and come out with related listening skills, Fang clearly stated that it was an activity unlikely to occur in her previous class where the tasks only checked the students' comprehension of the listening materials. I consulted Fang regarding the diagrammatic classification of the central nervous system (Task 2 in the handout of the genre of classification in Appendix 6), which was used to stress the importance of understanding medical subject knowledge through the linguistic pattern of classification. But I was not sure if I had understood the text correctly and presented the scheme accurately. This change of focus of attention from the specific knowledge from the other's discipline to a more general understanding of how the knowledge is related with one's own discipline indicates that as the border-crossers became more familiar with the other's field, they began to relate what they had just learnt with their original practice in their own disciplines.

The classroom instruction on this stage observed more spontaneous interaction between Fang and I, which displayed that they became more involved into each other's discipline and more confident in talking about things falling into the other's special field.

✧ Episode 4

(I was introducing verbs that could be used to describe classification when Fang cut in to discuss the usage of the word 'differentiate'.)

Researcher: Classify, group, categorize, divide are common verbs we use to describe classification. There is a very special one: fall into. What makes it special? We use active voice if the verb is *fall into*.

Fang: And how about *differentiate*? We don't say *differentiate between*. We usually say *differentiate A from B*. Anyway, in the articles I read, *differentiate from* is often used. It means to see or show the differences.

Researcher: En, as far as I know, we can also use *between* after *differentiate*. It depends. For example, each neuron has a cell body and two types of protoplasmic processes. We can say it in this way: we differentiate between two types of protoplasmic processes according to the impulses ... to the directions of the impulses they carry.

In this episode, Fang expressed her ideas about the usage of *differentiate*, and I made a sentence, using *differentiate between* to introduce the classification of protoplasmic processes. Both of us tried to step into the other's special field and use related knowledge to contribute to the class. The division of labour between us was no longer as explicit as before. In the focus discussion afterwards, Fang said she used to correct the students' mistakes in pronunciation or grammar, but she never consciously talked about the usage of language. The new lesson plans and my involvement in the class naturally drew her attention to it and she was getting used to talking about it. For me, the discussion of specific medical knowledge was challenging. When reflecting on the classroom processes for this unit, I wrote in my research journal that, "*it was a totally new experience to say*

something about the human body. I feel as if I am displaying my slight skill before an expert. Luckily I have read the textbook many times and become familiar with the content.”

8.1.3.3 Cycle 3---- The unit of translating and writing skills

In the focus discussions concerning the third unit, Fang began to develop more holistic understanding of genre-based lesson plan, as compared with the attention paid to specific details such as the choices of words and the connotation of certain terms in the previous two units. She had designed most of the lesson plan and revised it according to my suggestions. Her attention to the lesson plan as a guide to help students establish a general understanding of new genres was displayed when she asked me if the tasks for case history were arranged in good order.

I studied the lesson plans for the other two units carefully. I think the analysis of case history should begin from the situation. That is, in what occasions we need to write case history. After that we talk about what we write in the case history. (Fang in the seventh intervention focus discussion)

Her understanding of the order of introducing a new genre is consistent with the order of analysis suggested by So (2005), which begins from contextual analysis to linguistic analysis (see Footnote 40 on page 411 for more explanation). Later, when teaching abstract writing, Fang also began from contextual analysis, focusing on the purposes of writing and reading abstracts, and then moving on to the discussion of the schematic structure and linguistic features of abstracts (see Appendix 9 for an

excerpt from Fang's ME class on abstract writing).

Fang also talked about how she designed the tasks for the abstract writing:

This is also what I did when I tried to write an article for the first time. I collected dozens of similar articles from the magazines and compared them, like the main sections in the articles and what tenses are used to introduce previous research. (Fang in the seventh intervention focus discussion)

Fang's more comprehensive understanding of genre-based lesson plan and her reflection on previous learning experiences indicate that she had developed a deeper familiarity with GBP and was able to relate the tool imported from the other discipline with what she already knew and did in her own discipline. The interaction between the new knowledge or experience and the old ones helped to facilitate the lesson planning and classroom instruction, enabling Fang to face the challenges typically faced in the boundary zone.

I, though not responsible for the designing of the lesson plan for this unit, provided suggestions to improve the lesson plan, such as adding the discussion of language event sequence (Paltridge, 2001) and the usage of hedging (Varttala, 1999) (see Task 2 and 4 in the handout of case histories in the third unit in Appendix 6). I was interested in the contexts of case history writing and abstract writing and in the discussion invited Fang to introduce different formats of abstract in the medical field, comparing them with those in the linguistic field. Again, the integration of new knowledge from the other's field with the existing knowledge base was apparent. It

can be seen that as the boundary-crossers come into contact with the other's field for a longer time, they gradually integrate new ideas or new knowledge with the original ones in their own field.

The last unit of instruction was mainly implemented by Fang. I only taught for 20 minutes, explaining the differences between English and Chinese and introducing the process of translation. Fang went along with the instruction smoothly and followed the lesson plan well most of the time, except in one case when she went into in-depth medical details to explain the case history in Text D (see the discussion in section 7.1.2). It was noticed that she code-switched to Chinese many times. The reason for this, as she explained in the discussion after this unit, was that she felt uneasy using English to explain the language aspect of the lesson.

I'm more relaxed to explain medical knowledge in English because it's something I'm familiar with. These are things new to me, not my specialty. I don't think I can express myself well in English. (Fang in the post-intervention focus discussion. Parts used at the outset of this chapter.)

It can be seen that Fang, on the last stage of the case study, was able to do the job that was previously regarded as the job done by the expert in the other field. This was a breakthrough in boundary-crossing as the border was somewhat broken through and the activity system of the ME instruction was finally expanded with GBP as a new mediating tool and a new object to teach English in the medical situations rather than to teach medical knowledge in English. But, at the same time, she was still uncertain of her new role, namely a medical English teacher who really taught

English language, and occasionally had to resort to Chinese, the mother tongue, to talk about ideas that she was learning from the GBP intervention.

The above discussions display the ever expanded boundary zone where ideas from both activity systems interact and where new practice and old practice integrate. The force of the expansion derived from the occurrence and resolution of contradictions in the boundary-crossing actions cycles, which is discussed in the next subsection.

8.1.4 Contradictions as the Source of Evolution in Boundary-crossing Actions Cycles

The cooperation between Fang and me was initiated through personal contact between colleagues and conducted based on mutual understanding of the research purpose, namely to improve ME instruction. So there were neither unequal power relationships, as observed by some boundary-crossing studies (e.g. Tsui & Law, 2006), nor conflicts of interests that would add to the existent problems. The contradictions arising during the interventional instruction remained, most of the time, in the domain of teaching and learning and were resolved through dialogic problem solving in discussions and negotiations.

The genre-based pedagogy was introduced into the ME class with the aim to resolve some of the contradictions in the ME class activity system (see Figure 5.6), such as the contradiction between: (1) the ME teachers as unqualified language teachers and their object to be able to lecture in English, (2) the students' lack of independent

learning skills and the fact that they are given a lot of spare time for autonomous learning, and (3) the high importance attached to English learning by the college and the students' inability to recognize the English learning needs for future career development. It was found that in the process of introducing GBP as a new mediating tool and resolving the existing contradictions, new contradictions were generated, the resolution of which forced the boundary-crossing actions to move forward in strengthened cycles.

A new contradiction had surfaced when Fang and I began to discuss the lesson plan for the first unit. Fang had to finish the teaching content in each unit as prescribed by the course. It meant that if she wanted to teach the medical subject knowledge in the unit, there would be no time for the genre-based instruction. Adding the genre-based instruction into the class would have to cut into the time allotted for the presentation of medical knowledge. Another contradiction was that Fang knew little about GBP and the genre-based lesson planning and teaching, which required substantial knowledge background of the pedagogy. The resolution to these contradictions was sought through negotiation and communication of ideas between Fang and me. Fang agreed to revise the original lesson plan to include genre-based instruction. The teaching objectives were rewritten and teaching activities redesigned (see Appendix 6 for the original and revised lesson plans). Some sections on medical knowledge were deleted and only the basic ones were kept. Fang said it was good to force her to think what were the most important things the students must master in the unit.

I've been thinking about reducing the teaching content. I tried to teach more before. But it was too much for the students and they didn't learn well. Now I think I would just teach them the most basic ideas. (Fang in the second pre-intervention focus discussion)

I discussed the concept of genre and GBP with Fang. For Fang to better understand GBP, I also gave her a Chinese article on GBP written by a famous Chinese linguist (Qin, 2000). After the genre-based activities were designed, I explained each one to Fang and consulted her whenever medical knowledge was concerned. Fang also contributed to the new lesson plan, providing materials for the listening comprehension and the content input for the oral practice. In this way, the genre-based lesson plan was mutually designed and the elements from both activity systems were integrated. The teaching activities that were carried out based on the lesson plan were acceptable to both Fang and the students.

A new contradiction was found after the first cycle of teaching. The interviews with the students after the first unit revealed that some students did not have a clear idea of the concept of genre. As mentioned previously, their prior knowledge of genre was obtained from the Chinese lesson, which used genre, or *tī cí*, the Chinese equivalence, mainly as a literary term to refer to different styles of writing, such as narration, exposition or argumentation. This had led to a conceptual confusion. It was decided that genre be translated into *wéntī*, instead of *tī cí*, and introduced to the students once again. Because *wéntī* literally means the formation of words, it was more easily accepted and understood by the students. In addition, in the second unit,

I introduced the genre of classification first, followed by Fang who taught the nervous system, thus reversing the order that was followed for the first unit in which Fang introduced the circulatory system first and then I taught the genre of definition (see the difference in the sequence of teaching activities between unit one and unit two in Appendix 6). It was hoped that the students would focus more on the genre being taught.

When the second cycle of teaching nearly ended, and preparation for the lesson plan for the third unit started, a set of new contradictions arose. Fang and I had different understanding of the teaching objectives for this unit. Fang thought it was important to focus on translating skills, but I believed that writing was more important according to the results of needs analysis in my research. Fang wanted to give priority to translating skills because she thought the students were not competent to write any academic article at the elementary level of medical study and translating was more helpful for them because they might have to do some translation when reading the English textbooks. As for the instruction on writing, Fang thought the focus was to introduce some important kinds of medical writing, such as reviews, abstracts, case reports, thesis, and research paper (see Fang's original teaching objectives for unit three in Appendix 6). But I, as the researcher and teacher, thought that brief introduction was inadequate, if the students did not have chances to really write.

A compromise was made after discussion. The introduction of different translating skills were retained in the lesson, but we decided that less time would be devoted to

this section, leaving translating exercises to be done by the students after class as written homework. The section on different kinds of medical writing was also kept, but some detailed explanation was deleted. Four genres, namely case history, abstract, cover letter, and bio, were taught and practiced. Whether or not to teach case history writing was also controversial at the very beginning. Needs analysis among the medical doctors showed that in almost all cases, case histories were written in Chinese. But Fang thought case history was the easiest kind of text for the students to write. In addition, the students could use the medical knowledge they had just learnt in the previous units to write case history if the case was about a disease they had become familiar with. As for abstract writing, it would be impossible to require the students to write an abstract because they were not doing any research at all. However, it was retained with a task requiring students to write an abstract after reading a relatively simple research article. .

A special translating exercise was also added, namely abstract translation. It had been found in the needs analysis that English abstracts were required when the doctors or teachers wanted to publish articles in Chinese magazines. Fang told me that many people usually came out with the Chinese abstract first and translated it into English, instead of writing it directly in English. I therefore suggested adding abstract translation in the lesson plan (see the teaching activities in the translation module in unit three in Appendix 6) because I believed translation based on a text of a similar genre in the students' mother tongue was also a good practice for genre specific writing (see Flowerdew, 1993, for this activity type to teach professional genres).

The contradictions arising during boundary-crossing required the crossers to face the challenge of negotiating and combining elements from both fields to achieve hybrid solutions. During this process, they became more and more involved in the other's field and more interaction of ideas from both fields took place. In this way, the boundary-crossing actions were strengthened and evolved in cycles. Thus they have been presented as three boundary-crossing cycles evolving an expansive learning cycle (see Figure 8.1). The cycles are enlarged all the way, symbolizing the expanded boundary zone as the boundary-crossing actions continue. The arrows in the cycles indicate the boundary-crossing actions at different stages. Arrows 1 and 2 are boundary-crossing actions before the interventional instruction took place, which refer to the actions of analyzing existing problems in ME teaching and examining and discussing GBP. Arrows 3-5 are the boundary-crossing actions in the first cycle, arrows 7-9 are those in the second cycle, and arrows 11-13 are those in the third cycle, referring to the design, implementation and evaluation of the genre-based lesson plans in each cycle. Arrows 6 and 10 are boundary-crossing actions between the cycles that aimed at resolving the contradictions through negotiation. The results of these actions pushed the research forwards to formulate new cycle of actions. Arrows 14 and 15 are boundary-crossing action after the interventional instruction, which were taken to evaluate the overall instruction and learning results and discuss the possibility of using GBP in the whole ME course. The big expansive learning cycle is not closed, implying potential actions to study the ME course further in the future.

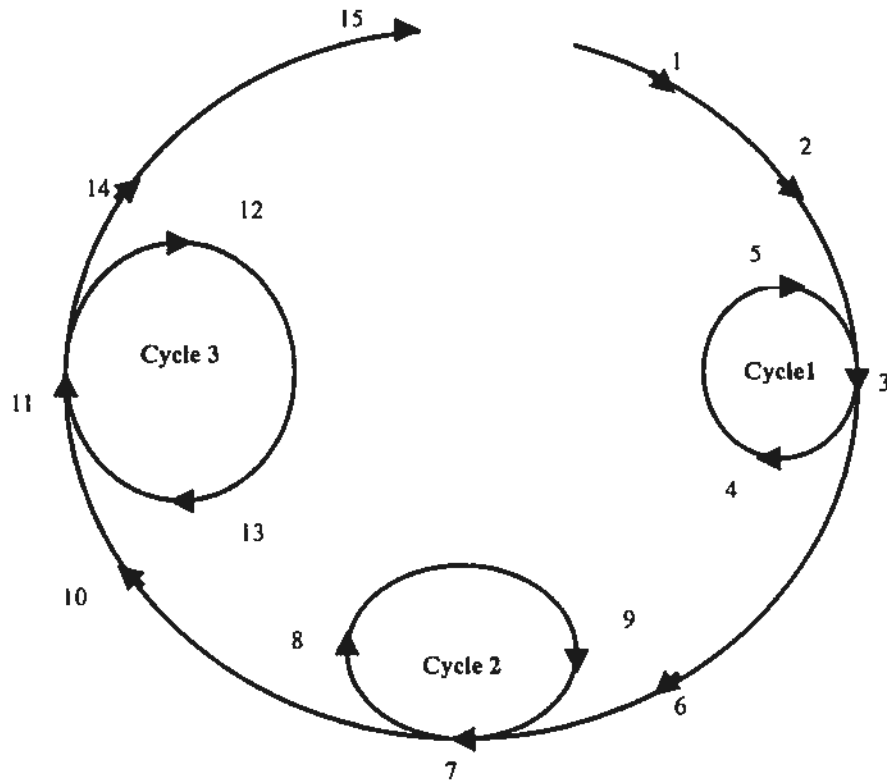


Figure 8.1: The Boundary-crossing Actions in the Expansive Learning Cycle

8.2 Boundary-crossing Actions as Bilaterally Beneficial Assisted Performance

The term *assisted performance* is used by Tharp and Gallimore (1988) to define teaching:

Teaching consists in assisting performance. Teaching is occurring when performance is achieved with assistance. (Tharp and Gallimore, 1988, p.21)

In their definition, it is the learner's performance that is assisted in the teaching. This thesis borrows "assisted performance" to refer to the team-teaching of Fang and I in the ME class. Our teaching performance during the intervention case study was facilitated by the boundary-crossing actions introduced in the above section and was realized through the assistance provided to each other by making use of our expertise in the respective disciplines. This assisted performance is bilaterally beneficial. The

original intention of the intervention was to help Fang improve ME teaching, but the results turned out to be learning on both sides. The two border-crossers' learning can be summarized in the following table (8.1). Details of their learning are discussed in the following subsections.

Table 8.1: The Boundary-crossers' Learning

Fang	Researcher
<ul style="list-style-type: none"> ● New pedagogical tool to teach ME ● New understanding of the ME course and medical language ● New identity of being a ME teacher 	<ul style="list-style-type: none"> ● New understanding of GBP ● New understanding of the ME course and medical language ● New identity of being a general English teacher

8.2.1 Fang's Boundary-Crossing Learning

Section 7.1 has discussed in detail how GBP was appropriated by Fang as both a pedagogical tool and a conceptual tool to facilitate her teaching. Before the interventional instruction, classroom observations showed that Fang taught ME in a traditional way, lecturing most of the time, though she occasionally included listening and speaking practice in her class. She thought she could help the student to better understand the English textbook by explaining the text word by word and sentence by sentence. She herself told the researcher several times that she was not satisfied with the teaching effects and wanted to make changes. This was an important reason why she agreed to join in the research. A most important gain from the team teaching, as claimed by Fang herself, was the specific methods of redesigning teaching materials and organizing classroom activities. The three-staged genre-based teaching model impressed Fang as a "ready-made" tool to design the

learning tasks. The steps of deconstruction, joint construction, and independent construction are perceived by her as she found different degrees of student involvement in the learning tasks

Once I chose a proper material, say, listening text, I would play it to the students one or two times, depending on how well they could understand it. Then I would ask them some questions, mainly to check their comprehension of the content. This is what I did with listening materials before. But I've learnt from your way of preparing. Now I would ask myself what I expect the students to learn from it. And I would design the tasks in the way that require more and more efforts from the students, that is, they would begin from having general understanding of the materials and finally be able to produce something of their own, to speak or to write something. (Fang in the post-intervention focus discussion)

I strongly believed in the values of GBP in language teaching as well as learning and made conscious efforts to use GBP as a new tool in lesson planning and classroom instruction during the interventional study, which influenced Fang to a great extent. She gradually appropriated GBP and accepted the conceptual underpinnings. Her own teaching object in the ME class was eventually reconceptualized. She used to think the course had a single focus on medical terms. Though she did think ME should also be taught as a language, and she also tried to teach it according to her own understanding, her focus on the vocabulary and sentence levels of the texts precluded her from teaching English as communication (see Appendix 7 for a look at a typical ME class taught by Fang before the interventional instruction). The attention paid to the contexts of genres and their overall structures at the discourse level in the genre-based instruction has changed her previous priority given to terms,

phrases and sentence structures. She thought she had got some ideas about what medical English was as a language as clear from the following quote.

It's what we do with English in different situations. And the situations are specially medical ones. The same message may be expressed in different ways in different situations. (Fang in the post-intervention focus discussion)

It is the importance that is attached to the situations of English use that makes her realize that medical English can also be taught to broaden the students' horizons as future medical professionals by helping them foresee the future situations requiring English use.

The new pedagogical tool, new value of the ME course, and new understanding of ME language contribute to a new identity of being a medical English teacher for Fang. She wrote in the reflective log on the last unit of instruction that "*this is something I wished my English teacher could have done for me when I was a student*". Later in the focus discussion, the researcher asked for clarification of this comment. Fang explained that she had been taught to learn English in a very traditional way, memorizing words and texts without being able to really use the language in real situations. She said:

If my English teacher could have taught something like this, like why we need to express something in English in this way, that is, how to express ourselves in English to achieve our communicative purposes, I would have learnt much more and been able to use English better. (Fang in the post-intervention focus discussion)

When asked further what she had learnt from the genre-based instruction as a ME teacher, Fang said it was the feeling of teaching something “*really English*”, not just dozens of medical terms in English. By “*really English*”, she referred to the use of English in medical contexts. And she hoped her students would be able to learn the situations as well as the use of English. The new way of teaching medical English gave Fang the sense of teaching English in use rather than textbook knowledge. In a sense, she is no longer in an awkward position of being a medical subject teacher to teach English. Instead, being able to draw on the strengths of language teaching methodology and integrate it into her knowledge base of medical subject pedagogy, she is in a more powerful position as she is equipped to make use of both language knowledge and medical knowledge to empower the students to become more active learners and ultimately be active participants in the academic field. But, her use of Chinese during the instruction was inevitable, she stated that teaching English in this way (GBP) was demanding for her because it was something she was unfamiliar with and not previously trained for.

8.2.2 The Researcher’s Boundary-Crossing Learning

My learning from the boundary-crossing actions is similar in that my understanding of the ME course as well as medical language and her original identity of being a general English teacher have also been renewed, in addition to new understanding of GBP.

I used to apply GBP in an English writing course for a group of medical graduate

students. Feeling incompetent to teach the medical professional genres such as case reports, abstracts and academic articles, I designed the genre-based course in the way that non-academic genres, such as life stories, book reviews, and argumentative essays, played a more important role⁴⁴.

In my previous teaching experience of using GBP, I worked alone and, most of the time, thought about the pedagogy in mind without speaking about it. The boundary-crossing actions of discussing lesson plans and reflecting on the instruction with Fang in the case study required me to articulate orally, not only to speak about the pedagogy, but also to explain and elaborate ideas whenever necessary. Like the teacher in Macken-Horarik's (2002) study, I had to use the metalanguage of GBP (such as genre, tenor, mode and field) to plan the lesson, to reflect on the instruction, and to assess the students' performance. In so doing, the metalanguage of GBP had become a tool for boundary crossing. At the same time, the necessity of explicitly using metalanguage to enhance the students' learning from the genre-based instruction had raised my awareness of adopting a more consciousness-raising approach to GBP. In this sense, my understanding of GBP's role in language teaching had also been renewed, i.e. I realized that GBP is not only a useful tool to teach students how to use English; it is also a useful tool to teach them how to learn English. This is what I wrote in the research journal:

I was excited to know that some students have learnt how to make use of genre knowledge in learning. I talked with Fan on the phone just now. He told me the

⁴⁴ This experience of using GBP is published by the researcher as a book chapter about teaching medical students in China (see Yang, in press in the list of references).

way to express classification helped him to create an image of structure in his mind and helped him understand reading materials better. (Excerpt from the research journal on April 4th)

At the same time, I had new understanding of the value of the ME course. I realized the importance of mastering both domains of knowledge in this content-based and genre-based medical English course, namely the domain of medicine and domain of linguistics. The discussions across boundary clarified some of my misconceptions in medicine, such as the confusion of case reports with case histories, and gave me the confidence to talk about the language use in medical contexts. The teaching across boundary in the ME class brought about interaction of the knowledge from both domains and displayed the challenge of teaching medical English because of the inseparable relations between medical knowledge and linguistic knowledge in the course. The following episodes from the genre-based instruction provide evidence illustrating this challenge.

◇ Episode 5:

(Fang had invited Xiao to explain ventricle using the technique of definition making.)

Xiao: Ventricle is the two lower chambers of the heart which contains right and left ventricle

Fang: Contain? Not so correct. Include

Some students (in low voice): Include.

Researcher: Or you can say composed of.

Fang: Not so exact.

Researcher: Not so exact?

Fang: Not so exact. Include.

Researcher: So include is better?

Fang: Yeh. Because ventricle is a general term to describe the chamber of the heart.

Researcher: Oh, I see. Yes, it's not something that is composed of small parts inside it. So we don't use compose here.

Fang: Yes. When it's located on the left, we call it left ventricle, when on the right, right ventricle.

In this episode, the focus of discussion is which verb is accurate to define *ventricle*. The key to this definition is, firstly, the medical knowledge that there are left and right ventricles while ventricle is a general term to refer to both of them, and secondly, *include* is a better choice of word to describe the relations between ventricle as a general term and the two specific ones termed according to their locations in human body.

Episode 6:

(The researcher was showing to the students how to make a sentence definition.)

Researcher: What is myocardium, then? It is the thick muscles that...

A student: which

Researcher: ...'which' is OK here...that constitute the entire heart together with endocardium. Can I say it in this way, Dr Fang?

Fang: I don't think so.

Researcher: You don't think so? Explain it for us, please.

(The students laughed.)

Researcher: Maybe I explained the constitution of the heart in a wrong way.

Fang: Yes. Here. Just now some students asked me the differences between

pericardium, myocardium, and endocardium. Pericardium is the sac. Two layers. (*She spoken as she drew a simple picture on the whiteboard*). Two layers of the sac, pericardium. Let's begin from the inner most. Myocardium, eh? And there is a membrane inside, which is endocardium. And then, another layer, outside, this is epicardium. And epicardium is actually called visceral pericardium because it is a layer of pericardium. Another layer of pericardium is parietal pericardium. These two layers constitute the entire pericardium. Are you clear now?

The students (together): Yes.

Researcher: So, when articulating a definition, you need some medical knowledge too! Not just language. (*The students laughed.*) This is a good example of using language to express your knowledge. Thank you, Dr. Fang.

In this episode, not being able to figure out the constitution of the heart because of the confusing terms, I did not give a correct definition of *myocardium*, despite the correct use of sentence definition. I lost no time to make use of my own mistake to teach the students the important combination of knowledge and language.

The assistance from Fang in the case study enabled me, as a teacher, to teach genres on the content base. When preparing for the lesson plans of the first two units, I had tried very hard to identify genres that were typical in the medical textbook and that could be better integrated into the medical content instruction. The teaching experience has helped me, the researcher who also was an active learner, to understand medical language in a wider sense, i.e. medical language not only entails “the technical terms of medicine”, but also “the preferred choices of lexis and syntax, typical discourse structures (case histories, operation notes, research articles, etc.),

and any other features which are distinctive conventions of the language used in medical contexts” (Maclean & Maher, 1994, p. 2431). Such understanding is displayed in the following excerpts from my research journals.

The medical textbook is full of long definitions, different kinds of classification and long explanation of processes or structures. No doubt the students are easily lost in the textbook and can only focus on the Chinese meaning of new words. Now I understand that it's very important to teach them how to identify important ways of expression and see how the knowledge is introduced through the conventions of language. (Excerpt from the research journal on March 21)

Today I talked about abstracts with Fang. It's interesting that there are different requirements for abstract writing in different disciplines. I found that abstracts for medical articles, especially the research ones, tend to be more rigid. It will be easy for the students to write an abstract once they know the genre structure and the linguistic features of these abstracts. (Excerpt from the research journal on April 23)

Finally, I, as the researcher, also had new understanding of the identity of being a general English teacher. I used to think medical English as something alien and had little idea of the students' subject learning when giving the general English course. This limitation became clear when I got to know more about what the students need to use English for academic study. For instance, the students' low reading speed of the sample abstracts had led to the discussion of teaching speed reading. Fang thought it was the general English teacher's job to teach students speed reading because it was a basic skill. *“Without this skill, they won't be able to read dozens of pages of research article within a short time”*, said Fang. The afterthought arising

from this discussion was expressed in the research journal:

I used to teach English for the only sake of language. The occasional connection of the language with the students' specialty was done just to arouse the students' interest. Now I think an English teacher must also consider the student's needs of learning English in the subject study and career development and create more opportunities for the student to practice the language in more authentic contexts. (Excerpt from the research journal on April 23)

Fang has realized her role in helping the students become more active learners and active participants in the academic field. So have I. Now I think the general English teachers should share with the responsibility to develop the student's identity as novice and future active participants in the academic field by encouraging the student to use English in authentic medical contexts.

But, like Fang, the researcher's trial in playing the new role was featured by hesitancy and diffidence. To take an example, the pronunciation and spelling of the medical terms are indeed challenging, as I wrote in my research journal below.

I practiced to pronounce "erythrocytes" and "erythroblastosis" many times before the class. It will be very embarrassing if I pronounce them wrong in the class. Anyway, I am the English teacher. (Excerpt from the research journal on March 30)

Just as Tuomi-Grohn and Engestrom (2003) state, "crossing boundaries involves encountering difference, entering into territory in which we are unfamiliar" (Tuomi-Grohn & Engestrom, 2003, p.4). It is the difference and unfamiliarity that have brought about both the challenges and the opportunities to learn expansively in

the present research.

Conclusion

This chapter has discussed the boundary-crossing actions in the present research from two perspectives namely (i) how they took place and (ii) what learning was brought about. The research question posed at the beginning of the chapter can be summarized and answered as follows:

Boundary-crossing actions happened firstly as horizontal movement across the border between the discipline of medical teaching (Fang) and that of English teaching (the researcher), with genre-based pedagogy as the boundary agent and the new mediating tool in the activity system of medical English teaching. The intention to resolve the recurring contradictions in the process of boundary-crossing led to expanded boundary zone in which the ideas, beliefs and practice of both disciplines interacted and integrated as the border-crossers became more and more involved into each other's fields. The boundary-crossing actions evolved in an expansive learning cycle comprising recurring cycles of preparing for, implementing and evaluating the genre-based instruction for each unit, while at the same time, resulted in situated learning for both border-crossers.

To sum up, boundary-crossing had facilitated the genre-based instruction in the present research in the follow ways:

- ◆ Boundary-crossing helped Fang and the researcher to step out of their own fields and walk into the other's field, leading to the interaction of ideas and knowledge

from both disciplines. Such interaction brought about the integration of medical knowledge with genre knowledge and enabled the two to produce genre-based lesson plans and teaching materials.

- ◆ Boundary-crossing resulted in collaboration between Fang and the researcher in the ME class. Their classroom performance had quite effectively displayed some important genres in medical study and working contexts (e.g. definition, classification, case histories, abstracts, and cover letters) through both the instruction using medical knowledge and the use of English language in context.
- ◆ Boundary-crossing provided opportunities for Fang and the researcher to discuss, analyze, and resolve some problems (or contradictions, as referred to previously) arising during the genre-based instruction and led to the improvement of genre-based lesson planning and pedagogy in the classroom. Without the identification and resolution of the contradictions, the genre-based instruction would not have been implemented smoothly.
- ◆ Boundary-crossing brought about learning for both Fang and the researcher all the time. The “win-win” situation made the genre-based instruction a significant learning process for both of them and, in addition to the purpose of helping the student with ME learning, had indeed become another motive to continue with the instruction in the future after the completion of the research.

This chapter has discussed how boundary-crossing happened and what learning was brought about. The interaction between Fang and me inside the classroom deserves more elaborate analysis. However, this is beyond the scope of this study since it is already too long. But it is definitely a fruitful area for further research.

Chapter 9: Summarizing the Case Study

Expansive learning is a historically new type of learning which emerges as practitioners struggle through developmental transformations in their activity systems, moving across collective zones of proximal development. ---- Engestrom, 1999, p.3

Introduction

The intervention case study, as the three previous chapters have presented, was conducted with the aim to answer the third research questions with its three sub-questions as presented here again:

How can some of the contradictions be resolved through genre-based pedagogy mediated expansive learning?

- a. **How are the students' perceptions of English learning needs reconceptualized?**
- b. **How is the concept of genre and genre-based pedagogy conceptualized and transformed in the process of learning?**
- c. **How does boundary-crossing happen to facilitate the genre-based teaching?**

Chapters 6, 7, and 8 have answered the three sub-questions separately. This brief chapter aims at summarizing the case study to provide a general answer to the third research question at a macro level. It begins from the summary of the expansive learning that had taken place during the intervention case study and goes on to discuss how some of the existing contradictions in the current ME class activity system were resolved throughout the genre-based instruction. It then goes on to

introduce the intervention case study as the collective zone of proximal development that happened among all the participants of the study, namely Fang (the ME teacher), the students, and the researcher. The chapter concludes by summing up the implications of the case study.

9.1 The GBP-mediated Expansive Learning

In the expansive learning theory, learning is re-conceptualized as development of both vertical movement across *levels* and horizontal movement across *borders* (Engestrom, 1987 & 1999). Based on a GBP-mediated expansive learning model (see Figure 2.12), the present research investigated the learning happening in the case study from three perspectives:

1. The vertical development as displayed by the medical students' re-conceptualization of their object of English learning, namely their English learning needs;
2. The horizontal development as illustrated by the boundary-crossing learning of the ME teacher and the researcher; and
3. The teacher and the students' concept formation of genre and GBP as the indication of developing both vertically and horizontally.

The three dimensions of expansive learning can be summarized as follows:

- ◆ The vertical dimension: The students' re-conceptualization of English learning needs

The different genres taught in the class have provided the students with the information about how English will be used in their study and future career development and broadened their views of the English learning needs. One of them even formed a new identity of becoming a good doctor with the help of

English to get more information. Two students who had already been rather clear about the English learning needs before the case study re-conceptualized the value of English learning to the extent that they began to view English as providing a new way of thinking or a cultural way of learning in addition to being a linguistic vehicle to learn about the medical knowledge.

- ◆ The horizontal dimension: The boundary-crossing learning of the ME teacher and the researcher

Fang, the ME teacher, has learnt to use GBP as a new pedagogical tool to teach ME and developed new understanding of the medical language as language used in medical situations. She also attributes new value to the ME course in that the course should also aim at broadening the students' outlook as future medical professionals by helping them foresee the future situations requiring the use of English. A new identity of being a ME teacher was also created when Fang realized that she was able to draw on both medical knowledge and linguistic knowledge (facilitated by GBP) to empower the students to become more active learners and active participants in the academic field.

I, the researcher, had also had enhanced understanding of the medical language, considering it to entail features ranging from lexis, syntax to discourse that are conventional to the medical contexts. I also realized the importance to integrate the knowledge from both domains to achieve best teaching effects in the ME class. The conscious efforts to work with Fang and use GBP in the class had also helped me to re-conceptualize GBP as a useful tool to teach students not only how to use English, but also how to learn English. Finally, I had renewed my identity as a general English teacher, extending my identity to include the teaching of ESP. I had broadened my thinking in that not only did I consider the student's needs of learning English in the subject study and career development in a general English course but also I embraced the responsibilities of the teacher of ESP (in this case ME) to train students as active future professionals.

- ◆ The vertical-horizontal dimension: The teacher and the students' concept formation of genre and GBP

In the horizontal dimension, the teacher's understanding of genre and GBP had developed from abstract and theoretical ideas to concrete classroom practice, appropriating these ideas as pedagogical tools. Though the concept of genre had not theoretically developed among most of the students, they were able to appropriate genre and GBP as learning tools, albeit appropriating the surface features of some specific genres in related practice and realizing the possibility of utilizing the way meaning is systemically realized by language structure in reading.

In the vertical dimension, genre and GBP had been appropriated as conceptual tools in ME teaching and learning. GBP's principles, frameworks, and ideas about teaching and learning English had helped the teacher to attach new values to ME instruction and establish new object of the ME course, namely to familiarize her students with the situations in which they need to use English in the future and train them in learning skills, so that they become both motivated and capable of learning medical English. On the students' part, the genres used in the specific situations enabled them to foresee the role English would play in their future career and helped them re-conceptualize their English learning needs. One student even seemed to have developed a new identity for his future with the help of genre-based instruction.

9.2 Resolving Contradictions in the ME Class Activity System

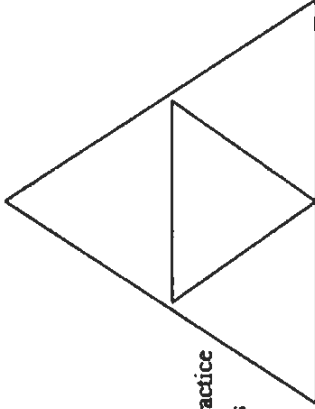
It can be seen from the above summary that the expansive learning that was mediated by the genre-based instruction in the ME class was multi-dimensional and multi-lateral. It was due to the expansive learning that some contradictions that had been identified in the ME class activity system (see Figure 5.6) had been resolved to a certain extent. See Figure 9.1 for a culturally more advanced ME class activity

system transformed through the resolution of some of these contradictions.

First of all, the ME teacher previously regarded English as only a linguistic tool to teach medical knowledge, and the students mainly thought of it as an examination tool. Appropriating genre and GBP as a practical tool (for teaching or for learning) and a conceptual tool (e.g. the developing awareness of text structure and applying this awareness in meaning making) helped both the teacher and the students to develop new ways of seeing the ME course. For the teacher, English is now both a pedagogical tool through which English learning methods and skills can be taught and a communicative tool through which the students will be able to communicate in situations involving medical learning and working. For the students, in addition to the acknowledgement of English as a linguistic and communicative tool by the majority, two reported to have learnt to use English as a conceptual tool to develop new ways of thinking and a cultural ways of learning.

Tool

- New teaching materials designed according to GBP tenets
- New methodological skills offered by GBP
- New values of English learning and use:
Teacher: English as a pedagogical tool, a communicative tool, and a linguistic tool.
Students: English as a communicative tool, a linguistic tool, and a conceptual tool



Subject

- New identities:
- Teacher: language teacher guide into the community of practice
 - Student: novice and future professionals

Object

- Mastery of basic medical terms and knowledge
- Development of Language skills and awareness of language use in



Outcome

- Teacher: new identities
new values of English learning and use
new pedagogical values of ME course
enhanced abilities to teach English
- Student: new identities
new values of English learning and use
higher awareness of English learning needs
improved English language skills
better learning strategies

Rule

- The students are given a lot of spare time for self-learning.
- The ME course is compulsory for the 1st-year students without medical knowledge background.
- The ME course is taught by medical teachers.

Division of Labor

- Community**
ME class
- Teacher: Teaching medical knowledge in English scaffolding language use in medical situations
Discussing English learning needs with students.
 - Student: Mastering basic medical terms and knowledge
Taking initiative to analyze target genres in medical situations

Figure 9.1: The Culturally More Advanced ME Class Activity System Transformed by Genre-Based Instruction

The planned solutions to deal with the contradictions lead to the resolution of the conflicting objects in the original activity system. With the new values of ME teaching and learning, the teacher and the students seemed to share unified object of the ME course, which was, within the medical context, to develop skills and use specific to English language, in addition to the mastery of basic medical terms and acquisition of subject knowledge.

The expansive learning has transformed the teacher and the students as subjects of the ME class activity system. The teacher has somewhat taken up the role of language teacher and at the same time act as the guide into the medical community of practice when she scaffolds English language use in medical situations and discusses English learning needs with the students. Of course, I am aware of the fact that the short-term intervention was only the first step towards developing Fang's ability to teach English competently as a medical subject teacher. But it can be said that the change in the identity and the new ability to teach the medical language with the help of GBP have, to a certain extent, was a historic step, likely to solve the original problem of being incompetent to teach medical English.

It is too early to claim that the students have formulated new identities as novice and future professional through the genre-based instruction because of the relatively short time of the instruction and their low medical learning level. But the students have made important progress within this short introduction to GBP in that not only have they re-conceptualized their English learning needs and become more aware of the medical situations in which English is important, but also, at the same time they have mastered

some learning strategies from the techniques of genre analysis. Such learning strategies help to solve the contradiction between the sad lack of independent learning skills although a lot of time is allocated for self-learning. Undoubtedly we can assume changes in the division of labour because as more motivated and active learners, they would have the initiative to analyze target genres in medical situations and thus assume more responsibility as a stakeholder in the ME curriculum.

The expectations of resolving the existing contradictions in the ME class activity system, through genre-based instruction, have been realized to a great extent. But since the findings concerning the students are based on a small number of students (No=46) as compared by the 198 students in the whole grade, it is too optimistic to draw firm conclusions, although the data does support the premise that the GBP-mediated expansive learning can potentially resolve the contradictions well. The present research has just explored a likely way to solve the problems through the combined efforts of the teachers from different disciplines. It serves to provide a practical base for future curricular innovation to be conducted in a larger scale to reduce the existing contradictions drastically.

9.3 Expansive Learning as Collective Zone of Proximal Development

Engestrom has described expansive learning as “a historically new type of learning which emerges as practitioners struggle through developmental transformations in their activity systems, moving across collective zones of proximal development” (Engestrom, 1999, p.3). The collective zone of proximal development is defined as:

...the distance between the present everyday actions of the individuals and the historically new form of the societal activity that can be collectively generated as a solution to the double bind potentially embedded in the everyday actions (Engestrom, 1987, p.174).

The description of expansive learning as the collective zone of proximal development offers new insight into the interaction of the participants in the present case study, namely Fang (the ME teacher), the case study students, and I, the researcher. It began from the researcher's experientially situated decision to conduct an intervention case study as a solution to the "double bind" situation⁴⁵ of the medical students who were: (1) involved in the dilemma of learning ME to get course credits without full awareness of the English learning needs; and (2) being forced to devote a great a deal of time to the course due to the overwhelming requirement from the college. This individual action was transformed into collective activity of boundary-crossing in terms of discussions and actions (such as lesson planning) shared between Fang and the researcher in order to use GBP as a new mediating tool. Fang's final application of GBP into the ME class fulfilled another round of collective zone of proximal development in that from Fang's individual action (her appropriation of GBP into her instruction) to the collective activity of the students (their appropriation of genre and GBP into their ME learning). This time the "double bind" situation was experienced by Fang who was put in an embarrassing position to teach medical English with inadequate training in language teaching, a double bind that I, the researcher, may well have guided her towards resolution. The collective zone of proximal development was realized in classroom

⁴⁵ "double bind" is defined by Engestrom in this way: in double bind situations, the individual, involved in an intense relationship, receives two messages or commands which deny each other - and the individual is unable to comment on the messages, i.e., he cannot make a metacommunicative statement (Engestrom, 1987, p.117).

instruction. In this way, a cycle of expansive transformation was accomplished.

9.4 Implications of the Intervention Case study

In this subsection, the implications of the intervention case study are summarized based on the discussion of findings in the three previous chapters, (Chapters 6, 7, and 8). Additionally the limitations of the case study will be discussed in Section 10.3.2. in Chapter 10.

9.4.1 Teaching the Concept of Genre More Consciously to the Students

Engestrom (2004) regards the process of concept formation as the process of transforming learning that begins from a theoretical, abstract, and simple idea and ends as practical, concrete, and complex manifestations. In the present research, this process is realized by Fang, the ME teacher, who first accepted GBP theoretically and gradually appropriated it in the ME course in specific lesson plans and classroom teaching activities. But it seems that the students' concept formation did not develop from abstract to concrete. Contrarily, the students tended to grasp the features of some specific genres and develop practical understanding of them as learning tools in their study without appropriating the label of *genre*. They would have benefit much more from the genre-based instruction, if, at some point of the instruction, their attention was drawn to the discussion of genre as a general and theoretical term. In the future when GBP goes beyond this study, students might be able to develop a knowledge framework of genre and generalize what they have learnt into a wider scope of learning that transcends the ME classroom and expands to other subject learning.

9.4.2 Highlighting the Techniques of Genre Analysis

“Teaching students about language and how to use it often requires a high degree of consciousness and explicitness in early stages” (Macken-Horarik, 2002, p.42). It is to this end that Flowerdew (1993) suggests adopting an educational, or process approach to the teaching of genres which can make learners aware of “how genres differ one from another and within each other, and how they can go about discovering these differences” (p.309), and to a even greater extent, “how they can be taught to approach, adapt to, and ultimately acquire new genres (p.315). Most of the students in the present research had not only been able to learn from the process of genre analysis in the ME class but also were starting to appropriate it as a learning method. But most of them had viewed it as a simple method of modeling and were still needed to enhance the techniques to critically analyze genres. It is therefore suggested that future genre-based instruction, if indeed GBP can be implemented formally in the ME class, should include activities that can highlight the techniques of genre analysis and teach them to consciously use genre analysis as a learning method (see Flowerdew, 1993, for the introduction of these kinds of activities).

9.4.3 Keeping a Proper Balance between the Genre-base Content and the Students' Academic Learning Level

It was found that some teaching activities (e.g. abstract writing) were not favored by the students mainly because they were still at the elementary level of academic study and were not able to cope with some professional genres, such as abstracts and academic articles. Although the students' medical academic level was considered basic, Fang and the researcher decided to introduce some professional genres to evaluate the feasibility.

It turned out that the requirement for the students to read an original academic article and write an abstract for it posed great difficulty on the students. It is therefore suggested that genre-based instruction should be better tailored to suit the students' learning level, especially in ESP course where the instruction is built on the basis of the subject content most of the time.

9.4.4 Explaining the Real Learning Needs Clearly While Catering for the Student's Interests:

According to the results of the needs analysis, English case histories writing and conversations in the clinical contexts are not commonly found in the Chinese-speaking context. But the English questionnaire survey showed that the students were interested in these activities and were satisfied with them too. The students might have been misled to think that these activities reflected the English learning needs in the real contexts. Reflection and joint evaluation reveal that the teacher should have explained the objectives of these activities to the students more clearly, ensuring that students realize the difference between task objectives, such as input for language practice to facilitate internalizing what has been learnt as medical subject knowledge as opposed to input offered in ME to arouse and cater for student interests.

Conclusion

The expansive learning that took place during the intervention case study had helped to resolve some of the existing contradictions in the current ME class activity system. The process of expansive learning can be conceptualized as collective zone of proximal development that had involved all the participants of the case study. There are, as usual,

some inevitable dilemmas with any case study and this case study is no exception, yet it was deemed necessary to summarize the implications future research. It should also be noted that most of the findings of the case study were based on the self-reported data from the interviews with the ME teacher and the six students. Though triangulation using multiple sources and tools has been undertaken through the usage of data from classroom observations and students' oral or written products, the conclusions still are only an exciting blueprint for educational change and innovation.

Chapter 10: Concluding the Research

The hardest core to crack is the learning core ---- changes in instructional practices and in the culture of teaching toward greater collaborative relationship among students, teachers and other potential partners. ---- Fullan, 1993, p. 49

Introduction

This chapter concludes the thesis with:

- ❖ a summary of the major findings of the research to answer the research questions,
- ❖ a discussion of its significance for other research and its limitations, and
- ❖ suggestions for further research.

10.1 Summarizing the Findings

This section summarizes the findings of the present research by revisiting the research questions one by one and offering the answers. It concludes with the answer to the main research question.

10.1.1 Revisiting the Research Questions

- 1) **What are the medical students' English learning needs as perceived by different parties (i.e. students, teachers, administrators and medical doctors) concerned with the Medical English course?**

From the longitudinal perspective, the medical students' English learning needs in the medical studies are reflected in the needs to: (i) take English courses, (ii) pass English examinations, (iii) acquire medical subject knowledge in English, (iv) read medical literature published in English, and (v) write medical reviews or articles in English.

They may use English occasionally in clinical contexts. But as medical doctors, they

will need English most in reading literature and writing articles. Ultimately, if they are to become medical teachers and researchers in university, in addition to reading and writing, they may have to use English in lesson planning and some academic activities such as taking part in conferences or listening to seminars.

The medical students' English learning needs are perceived differently by different parties. Among the students, those at the elementary level seem to feel that they are being forced to learn English. Not fully aware of their language needs for the future career, they think their biggest English learning need is to pass examinations. Those at the intermediate level only identify the needs to glean appropriate medical knowledge in English, which most of them tend to resist. More internally motivated, those at the higher level recognize English learning needs as the needs to present reports, read medical literature and write articles. The teachers of the medical college identify the medical students' English learning needs from three perspectives. First, practically the students need to learn English well to obtain degrees and good jobs; second, academically they need to achieve a higher level of English abilities to develop as medical professionals; and finally functionally they need to exhibit better English proficiency to compete in the workplace. They regard terminology, reading and listening skills as most important for the students to learn. Most of the teachers investigated suggest executing the language policies (e.g. using English as the medium of instruction and require the EIC (English Immersion Class) students to sit for USMLE (United States Medicine Licensing Examinations) that suit the students best according to the real needs in the Chinese contexts and the students' personal desires. But those in the collegial administrative posts tend to stress the importance of learning English despite

largely resistant attitudes towards learning English was discernible in the data provided by most students..

2) What contradictions, if any, are revealed through critical analysis of the English learning needs?

The critical analysis of the medical students' English learning needs identifies inner contradictions in the medical English activity system that arise at four levels. At the primary level, contradictions are found in the components of *subject, rule, and division of labour*. They are the: (i) appointment of medical subject teachers who are not trained in language teaching to teach ME, (ii) compulsory requirement for first-year students who lack medical knowledge background to take advantage of the ME course, and (iii) administrative decision to enforce ME course without negotiating with either teachers or students.

At the secondary level, contradictions are found between the: (i) new object of learning ME to develop comprehensive English language abilities and the students' old object of learning ME mainly ~~to get course credits~~, (ii) new object of ME learning and the students' inability to call upon proper learning strategies to achieve the expected learning results within ME, and (iii) the new object of ME learning and the requirement that only EIC students will learn the medical subjects in English thus leading to low motivation among non-EIC students.

At the tertiary level, a mismatch is found between the students' and the ME teachers' understanding of the purposes of the ME course. The students are more interested in getting pass in exams rather than learn medical subjects through English as the ME

teacher expects them to do.

At the quaternary level, contradictions are found between the central activity system of ME learning and its neighboring activity systems, which results in the central activity system altered by the interests, values and beliefs of the participants in other activity systems and thus come into conflict with the participants in the central activity system. For example, the ME teachers seem to pay little attention to the students' original learning skills to deal with exams and fail to help them develop proper learning strategies in ME learning. Although both medical doctors and medical teachers have to use English in research activities due to the institutional requirements, but they fail to pass the information onto the students and raise their awareness of English learning needs for developing their future careers. And finally, the students are not well-informed of the college's policies pertaining to studying abroad and not able to foresee the importance of English competence in medical study.

3) How can some of the contradictions be resolved through genre-based pedagogy mediated expansive learning?

- a. How are the students' perceptions of English learning needs re-conceptualized?**
- b. How is the concept of genre and genre-based pedagogy conceptualized and transformed in the process of learning?**
- c. How does boundary-crossing happen to facilitate the genre-based teaching?**

Based on a GBP-mediated expansive learning model (see Figure 2.12), the expansive learning happening in the case study are explored from three observational dimensions: (1) the vertical development as displayed by the medical students' re-conceptualization

of their object of English learning, namely their English learning needs; (2) the horizontal development as displayed by the boundary-crossing learning of the ME teacher and the researcher; and (3), the teacher and the students' concept formation of genre and GBP as the indication of developing both vertically and horizontally (for detailed summary see Section 9.1). Table 10.1 summarizes the multi-dimensional and multi-lateral learning in the case study from two perspectives in terms of the learning that happened practically and conceptually.

Table 10.1: The Expansive Learning in the Intervention Case Study

Learner	Learning	
	Vertically/Conceptually	Horizontally/Practically
The students	<ul style="list-style-type: none"> ● Having broadened view of English learning needs ● Forming new identity for the future ● Reconceptualizing the value of English learning 	<ul style="list-style-type: none"> ● Appropriating the surface features of specific genres in practice ● Applying genre structures in reading comprehension ● Using genre analysis as a learning method
The ME teacher	Developing new: <ul style="list-style-type: none"> ● understanding of medical language ● value of the ME course ● identity of being a ME teacher capable of teaching language use 	<ul style="list-style-type: none"> ● Using GBP as a pedagogical tool to teach ME, especially in terms of lesson planning and learning task designing
The researcher	Developing new: <ul style="list-style-type: none"> ● understanding of medical language ● values of using GBP: GBP can be used as a tool to teach students how to learn English in addition to how to use English ● identity of being a general English teacher: being aware of the students' English learning needs in subject areas 	<ul style="list-style-type: none"> ● Using GBP on a content base, i.e. integrating the linguistic knowledge and language use with the medical knowledge

The expansive learning had helped to resolve some contradictions in the ME class activity system. The contradictions resolved through GBP are summarized in Table 10.2 below.

Table 10.2: Contradictions Resolved through Genre-based Instruction in the ME Class

Level	Component	Contradiction	Resolution through GB Instruction
Primary	tool	The ME teachers and the students have different values attached to learning English.	The GB instruction helped both the teacher and the students to develop new and unified values attached to learning English.
	object	The ME teachers and the students have different expectations of the ME class.	With the unified values of English learning, the teacher and the students had shared object of the ME class.
Secondary	subject vs. object	Some ME teachers do not have high English proficiency to deliver the medical input in English.	GBP provided the metalanguage for the ME teacher to talk about medical issues with the students and, to a certain extent, is likely to relieve their linguistic difficulties of teaching in English. ⁴⁶
	subject vs. object	The ME teachers are not trained in language teaching and not capable enough to teach English used in communicative contexts.	Though not formally trained in GBP and is not yet competent enough to teach English using a genre approach during the case study, the ME teacher has got some concrete pedagogical tool from GBP to teach language use in the ME class, such as the way to organize class activities from joint construction to independent construction, and the way to analyze a piece of text from the context of situation to genre and the linguistic features.
	Rule vs. object	The first-year students lack medical information but have to take the ME course which focuses on medical subject/domain knowledge.	With a new focus to teach language use, the ME teacher had to free class time for GB instruction, which forced her to simplify the teaching content for medical knowledge. The students' burden, brought about by the overstress on medical knowledge, may have been somewhat relieved.
	Rule vs. subject	The students do not have proper learning strategies for autonomous learning.	GBP provided the students with learning skills for enhancing autonomous learning, e.g. learning through genre analysis.

⁴⁶ According to the classroom observations during the needs analysis, the ME teacher taking part in the intervention case study (i.e. Fang) was more proficient in English than the other ME teachers. However, it can be argued that if teachers don't have a high proficiency level, the need to use metalanguage to teach medical issues and the use of GBP will present further challenges to them.

10.1.2 Answering the Main Research Question

The main research question of the present research was: **In what ways, if at all, does genre-based pedagogy, informed by critical needs analysis, lead to expansive learning and transform medical English instruction?** It can be answered in this way:

The critical analysis of the medical students' English learning needs in a Chinese medical college has revealed inner contradictions in the ME activity system. With the intent to resolve some of the contradictions, we introduced the use of GBP as a new mediating tool in the ME instruction. It was incorporated into the ME class by the ME teacher and the researcher through boundary-crossing actions in three teaching cycles, expanded and strengthened all the way. Both the ME teacher and the students appropriated GBP conceptually and practically, leading to multi-dimensional expansive learning. The researcher has also learnt from the boundary-crossing. New teaching/learning tools were formed, new values of English learning and new understanding of the objects of the ME course were developed, and new identities were established. The introduction of a new mediating tool (i.e. GBP) had led to changes in the other components of the ME class activity system and finally transformed it into a culturally more advanced one, with more consistent *object* shared by the subjects, new conceptual *tools* (e.g. the new values attached to learning English), new quality of some of the *subjects* (i.e. enhanced ability in ME learning/teaching), and new responsibility in learning (the *division of labor*).

10.2 Significance of the Present Research

The significance of the present research is discussed in two broad areas: its significance for researching learning in ESP courses and its significance for researching team-teaching in the ESP programs. Finally, how the present research has enhanced the understanding of some key constructs in the study (e.g. activity theory, critical needs analysis, and genre-based pedagogy) is discussed.

10.2.1 Significance for researching learning in ESP Courses

The significance for researching learning in an ESP course lies in how learning was analyzed theoretically from the sociocultural perspectives, and methodologically from the expansive developmental perspective. A multi-dimensional and multi-lateral GBP-mediated expansive learning model is also introduced as a useful tool in researching learning in various ESP areas.

10.2.1.1 The multi-planed sociocultural analysis of learning

To re-iterate, Vygotsky (1978) states that knowledge is socially embedded, and learning occurs from socially-mediated collaborative processes. This sociocultural theory of learning emphasizes that human intelligence originates in our society or culture, and individual cognitive gain occurs first through interpersonal (interaction with social environment) then through intrapersonal (internalization). For more detailed explanation of how learning takes place from the sociocultural perspective, see Section 2.5.1 for the introduction of some key concepts such as the general genetic law of cultural development, internalization, and Zone of Proximal Development.

The sociocultural view of learning as “socially situated activity” (Ohta, 2000) requires systematic research on learning to be done by considering the dialectic relationship between the interpersonal plane and the intrapersonal plane. In the present research, different planes of sociocultural analysis of learning, following Rogoff’s (1995) classification, has been undertaken. The English learning needs analysis was done on the community plane. The intervention case study was mainly done on the interpersonal plane (between the ME teacher and the researcher) and the personal plane (the six students for in-depth analysis).

Just as Rogoff (1995) claims, the planes of focus is neither separate nor hierarchical; instead, they simply involve different grains of focus with the whole sociocultural activity of medical English learning. The focus of the needs analysis was on the collective activity of medical English learning as perceived by different parties in the medical college. Learning was analyzed on the community plane to obtain a comprehensive understanding, serving as the starting point for critical needs analysis. At the same time, it also helped to reveal some influence on English learning from a broader context, namely the national context in which English learning was attached with great importance at the age of globalization, such as the great attention paid to CET (College English Test) and the importance attached to the publication of SCI (Science Citation Index) articles. The boundary-crossing learning of the ME teacher and the researcher happened on the interpersonal plane. The analysis on this plane stressed “the mutual involvement of individual and their social partners, communicating and coordinating their involvement as they participate in socio-culturally structured collective activity” (Rogoff, 1995, p.146) of medical English instruction in the class. At

the same time, individual students were chosen with the aim to analyze the process in which “individual(s) transform their understanding of and responsibility for activities through their own participation” (Rogoff, 1995, p.150) in the ME class as the boundary-crossing actions of the ME teacher and the researcher developed into collective learning activity in the ME class.

At different stages of research, the analysis of medical English learning zoomed in on a single plane, with the salient features of other planes remaining in the background.

These are inseparable, mutually constituting planes comprising activities that can become the focus of analysis at different times, but with the others necessarily remaining in the background of the analysis. (Rogoff, 1995, p.139)

During the needs analysis, the qualities of ME teachers that emerged was as unsuitably qualified language teachers and the medical students seemed, generally speaking, inadequately motivated learners. At the same time, the lack in cooperative culture of teaching and administrating in the medical college exposed the gap of communication in the interpersonal relationships, either between the teachers and the students or between the teachers and the collegial administration. During the collaboration between the ME teacher and the researcher, the instrumentalistic practice of learning medical English in the institutional context was problematized and subjected to changes. When the individual students' learning was studied, the team-teaching of the ME teacher and the researcher was necessarily kept in mind as the students' learning was actually more or less the direct product of the team-teaching activities. The innovative team-teaching of a medical subject teacher and an English language teacher in the ME class had, to a

great extent, impressed the students and led to substantial attention to the teaching content. In this way, the analysis of learning on one plane was always informed by learning on other planes, helping the researcher to appreciate the complex activities that take place on a certain plane.

Rogoff (1995) also suggests that such a socio-cultural analysis of learning requires considering how individuals, groups, and communities transform as they together constitute and are constituted by socio-cultural activity. The present research has studied how the transformation happened on the individual and interpersonal planes. Individually, the students appropriated genres and GBP as learning tools and reconceptualized their English learning needs by different degrees. The teacher appropriated genres and GBP as pedagogical tools and renewed her understanding of the medical language as well as the ME course and developed new identity as a ME teacher. And the researcher developed new understanding of GBP, the medical language and the ME course and extended her identity as a general English teacher. But the learning happening to the individuals did not take place individually. It had to be examined on the interpersonal plane and re-conceptualized as the collective zones of proximal development through the collective activities of boundary-crossing, such as lesson planning, between Fang and the researcher and the collective activities surrounding participation in the genre-based ME class by Fang, the researcher and the case study students.

To sum up, the highlighting of one socio-cultural plane and the complementation of the other planes through out the whole research have fully embodied the sociocultural view

of learning. The socio-cultural view of learning is based on the premise that learning occurs from socially-mediated collaborative processes (Vygotsky, 1978) and such a view treats learning as socially situated activity (Ohta, 2000), stressing situated learning and scaffolding (Lave & Wenger, 1991; Wenger, 1998). The present research extends the current ESP research by analyzing ESP genre-based learning on different socio-cultural planes, displaying through systematic analyses how learning happened and was transformed in social interaction.

Moreover, such multi-planed analysis of learning offers a localized orientation for the ESP research to understand and expose “new forms of inequalities in education and society and new productions of subaltern subjectivity under globalization” (Lin & Martin, 2005, p.6). The present research establishes a case to study English learning that happens in the interaction of both global and local forces in specific sociocultural contexts. It is therefore significant for researching learning in other sociocultural contexts.

10.2.1.2 An Expansive Developmental Model to Research Learning

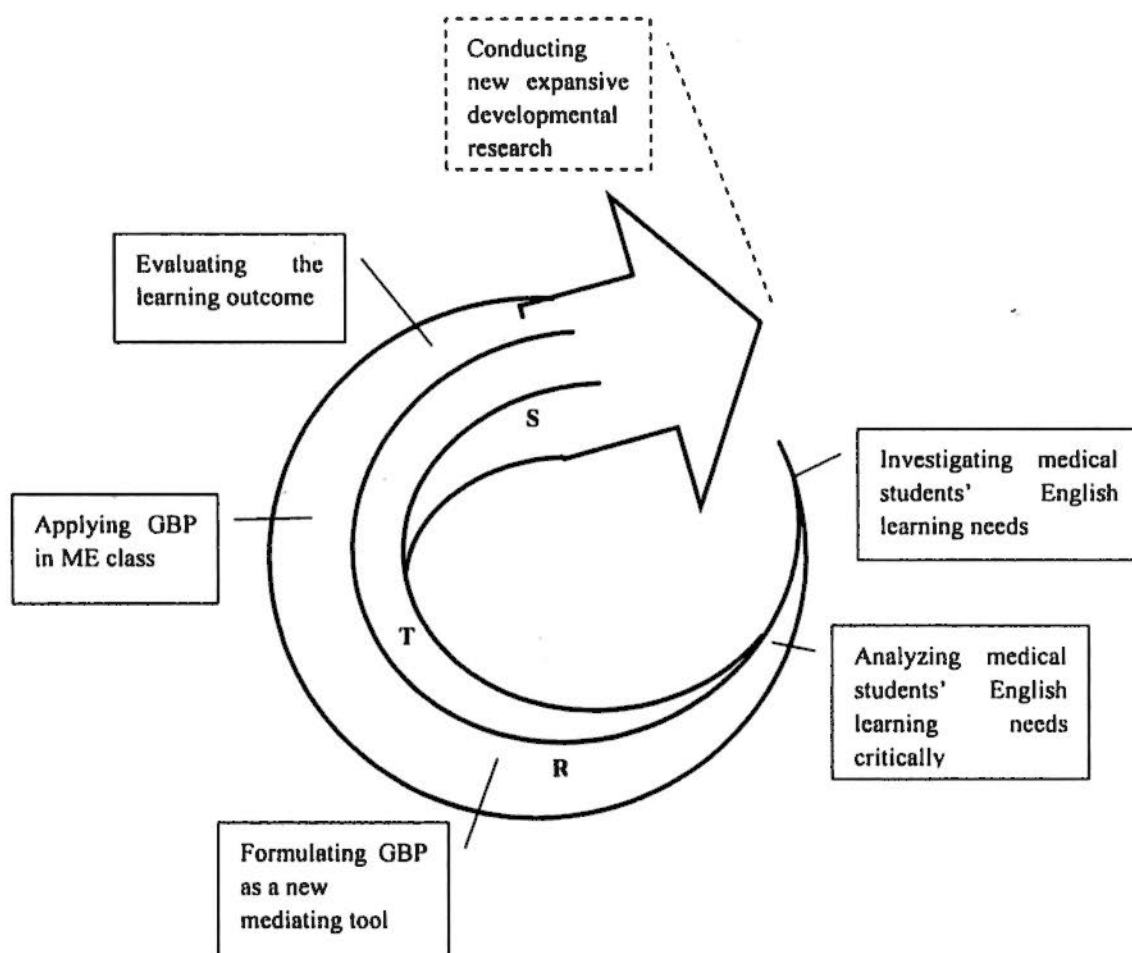
The present research has adopted an expansive developmental model to research learning. This research model is expansive in that the depth of analysis increased as it proceeded and more and more participants became involved in the research, firstly the researcher, then the ME teacher, and then the students in the case study. It is developmental in that it attached greater importance to the process of learning than the product of learning, emphasizing how the learners became what they were rather than what they finally accomplished. In particular, concept formation was adopted to explore

the ME teacher and the students' conceptualization of genre and GBP. How they appropriated the concepts, step by step, constituted the process of learning. It is interventionist in that the research also examined the effect of intervention, linking the analysis of situation to concrete action of problem-solving. Considered from the methodological perspective, critical needs analysis, conceptualized, in Chapter two, as the process of understanding the existing conditions and transforming them, is in essence an interventionist research in which concrete actions are taken to achieve the objectives of analysis, criticism and transformation.

The five-stepped research cycle presented in Figure 3.1 can be depicted again to better illustrate the features of the present research (see Figure 10.1). In this figure, the enlarged swirl of research indicates the expanded research depth and the involvement of more participants. The research on learning finally became a process of learning for me, the researcher. I encountered a series of activities to push the research forwards and eventually accomplished the purposes of the research.

The present research contributes to current ESP research by using such an expansive developmental research model to bring about changes in ESP learning. ESP has long been criticized of its pragmatist stance and a critical stance has been advocated to not only just identify the existing conditions of learning in ESP, but also to search for possible areas for change and enrichment (Benesch, 1993; Pennycook, 1994a & 1997; Widdowson, 1998; Hyon, 1996). This research model enables the ESP researchers to critically investigate and analyze the existing conditions of learning and actively implement new conceptual tools to mediate innovation. It displays how a critical

approach to researching ESP can be realized in stepwise “praxis” of critical reflection and action (Freire, 1993).



* R = the researcher; T = the ME teacher; S = the students in the case study

Figure 10.1: The Expansive Developmental Research Model of the Present Research

10.2.1.3 A Multi-dimensional and Multi-lateral GBP-mediated Expansive Learning Model

In response to the calls from some ESP scholars to carry out more studies of genre and instruction in classroom-based instructional contexts (Tardy, 2006) and to adopt learner- and learning-focused approaches to researching learners' learning of genre and their development of generic/rhetorical consciousness (Cheng 2006), Chapter 2 has postulated a GBP-mediated expansive learning model, providing three observational

dimensions to research the learning that took place in the ME class. It is based on this model that this thesis has presented the findings in the second stage of the present research and provided answers to the third research question. As can be seen from the summary in Section 9.1, some learning from different observational dimension is overlapping. Section 10.1.1 summarizes the expansive learning in the case study from two perspectives namely the practical one and the conceptual one for all parties involved. This multi-dimensional and multi-lateral learning can be presented in a renewed GBP-mediated expansive learning model (Figure 10.2).

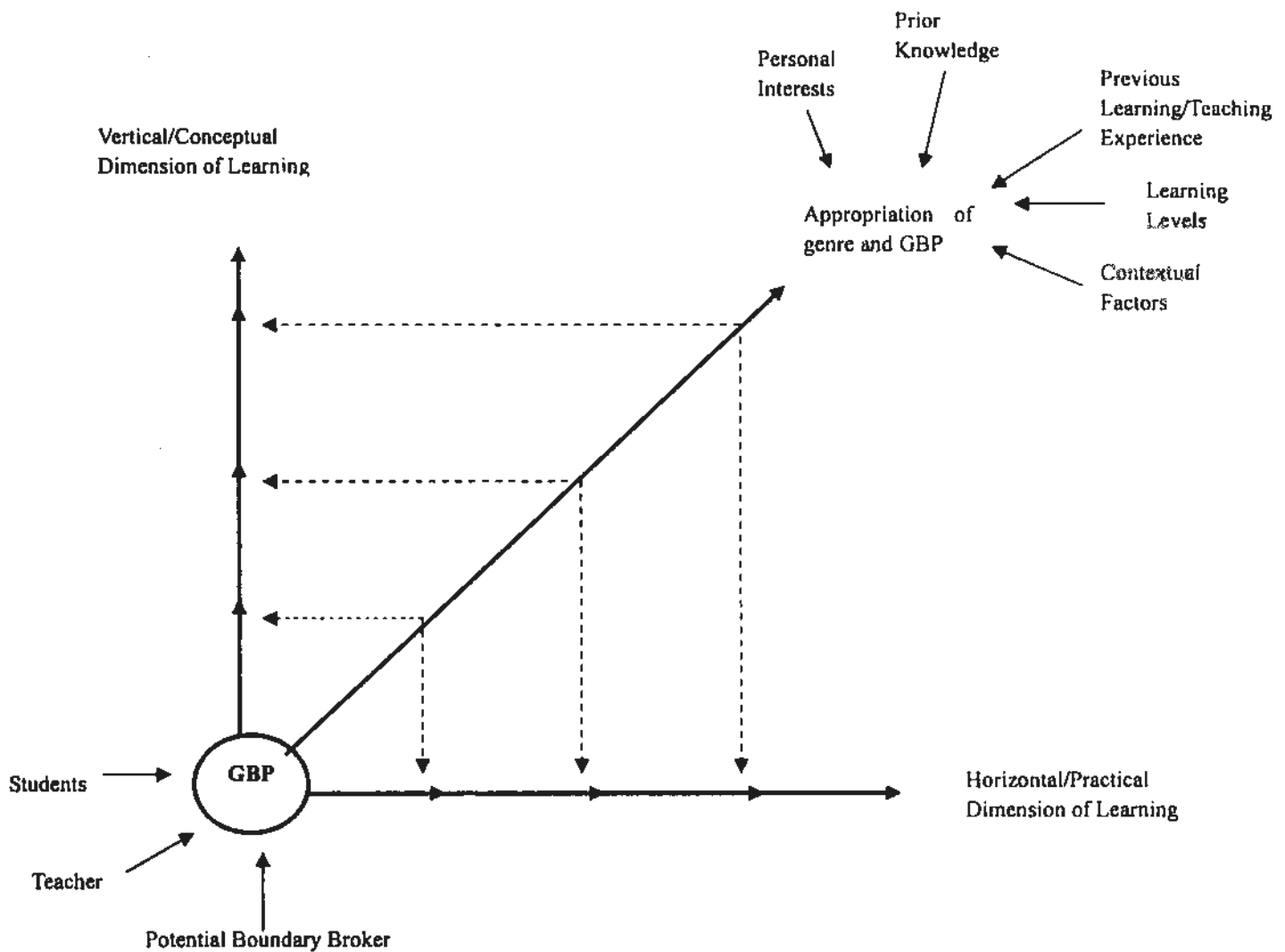


Figure 10.2: A Multi-dimensional and Multi-lateral GBP-mediated Expansive Learning Model

In this model, when GBP begins to be used in course design, lesson planning, and classroom instruction, the appropriation of genre and GBP reflects the concept

formation of genre and GBP among the learners, who consist of the teacher, the students, and the potential boundary brokers (e.g. the researcher in the present research) who introduce GBP into the original class activity system. This process of appropriation may be influenced by various factors ranging from personal interests (e.g. the interest in language learning), prior knowledge (e.g. the prior knowledge of genre and GBP), previous learning/teaching experience (e.g. learning or teaching languages at the sentence level), learning levels (e.g. the subject knowledge level) and contextual factors (e.g. limited class time that restricts the application of GBP or genre-based practice). The dotted arrows towards both horizontal and vertical axis imply the influence of concept formation on both dimensions of learning.

For the students, the horizontal/practical dimension of learning refers to the way some surface features of genres and the method of genre analysis are appropriated as learning tool or method and are used in learning. With the passing of time, the area of learning may be generalized from language learning to subject learning or other areas of learning, displaying the horizontal development of using GBP as a practical tool in learning. For the teacher, the horizontal/practical dimension of learning refers to the way genre and GBP are appropriated as practical pedagogical tool in course design, lesson planning and classroom instruction, developing from abstract and simple theoretical concepts to concrete and locally utilized practice. For the potential boundary broker, the introduction of GBP into a new teaching domain brings about new understanding of GBP used in new areas and its integrative use with other domains of knowledge.

In the vertical/conceptual perspective, the students may develop new understanding or

values of English language learning (including the learning needs and the qualities of the language itself) and new identities (including the imminent identity of being a novice into their future community of practice or future identity of being a professional in practice). For the teacher, this dimension of learning refers to the renewed understanding of the course that is taught, especially how the course can be improved by teaching language in use, and the renewed understanding of language learning and language use. At the same time, the teacher may also establish a new identity in terms of new responsibilities towards the need to include the students' interests and revise the learning objectives in the course. In a similar vein, the potential boundary broker may also develop new understanding of the activity object in the new teaching domain and establish a new identity as an English teacher who can make use of the insights from both disciplines in practice.

With this renewed model of GBP-mediated expansive learning, the findings in the present research can be generalized to other genre-based instructional contexts other than medical English (or English for Medical Purposes) learning. Indeed this model can be used to investigate learning in other ESP genre-based classroom. It provides multi-observational dimensions to inquire about the “various parameters of learning in ESP genre-oriented pedagogy” (Cheng, 2006, p.86) and focuses on what learners learn and how they learn under the genre-based instruction.

The model can also be generalized in other language learning contexts mediated by new tools other than GBP. For example, expansive learning can be studied in the computer-assisted instruction (CAI) of English by investigating how the concepts as

well as the application of the new technology (e.g. some e-learning software or on-line learning systems) have been appropriated and mediated language learning. The multi-dimensional and multi-lateral model can bring insights to the interpersonal interaction between the teachers, the learners and the researchers (if any) involved through boundary crossing and the human-computer interaction through concept formation.

Finally, the formulation of the renewed expansive learning model sets a good example of how theoretical perspectives can be made use of to establish theoretical models to guide research practice and how research practice can help to test the effectiveness of theoretical models and improve them. It would be difficult to decide to what extent the present research belongs to the inquiry of “grounded theory” because, though it is not totally aimed at “the discovery of theory from data” (Glaser & Strauss, 1967, p.1), the role the literature of GBP plays in this research is similar to the place of literature in some research using grounded theory, that is, “a progressive accessing and reading of relevant literature [becomes] a part of data collection procedure” (Dick, 2005). The researcher embarked on the research project with relevant literature on sociocultural theories, critical theories, and Activity Theory, which offer the insights to analyse the medical students’ English learning needs in the initial stage. It was during the data collection and analysis of the first research stage (i.e. needs analysis) that the researcher began to access GBP as it gradually became relevant. During the pilot case study, further reading in expansive learning theory brought in new dimensions to observe learning. It was not until then that the GBP-mediated expansive learning model came into being. The model was renewed at the end of the research in light of the final

research results. This approach to “literature as emergent”⁴⁷ and the way in which a theoretical model was developed in the present research are based on the grounded theory. This research practice is also particularly significant for teacher-research in terms of how theory and data can facilitate each other to fulfil the ultimate research purpose of improving practice.

10.2.2 Significance for Researching Team-teaching in ESP Programs

Dudley-Evans & St. John (1998) identify three level of collaboration between ESP teachers and subject specialists, namely cooperation, collaboration and team-teaching. Section 3.2.2.3 has introduced how the researcher’s collaboration with the ME teacher in the intervention case study evolved at these three levels as the study progressed. This pyramidal involvement into a new teaching domain is revealing to ESP programs especially when the interdisciplinary collaboration of the subject specialist and the language teacher is needed. It provides stepwise research actions for a newcomer to enter a new field through exploration and cooperation.

Besides the tactical involvement into a new discipline, the team-teaching in the present research was studied from the theoretical perspective of boundary-crossing, which emphasized the negotiation and improvisation of “knots of collaboration” by crossing the boundaries of disciplines to meet new challenges and reshape one’s own activities (Engestrom, 2004, p.145). It provides theoretical insight into the study of the dynamic interaction between the subject specialists and the language teachers in ESP programs.

⁴⁷ The other way to use literature in grounded theory is “literature as data”, in which the literature is read and compared to the emerging theory in the same way that data is compared to the emerging theory, following the procedure of note-taking, coding, and memoing (see Dick, 2005).

In addition, the team-teaching in the present research is different from the team-teaching in the “adjunct model” of content-based instruction (Snow & Brinton, 1988). In the adjunct model, the content teacher and the language teacher do not really teach the same course and only collaborate outside the class in terms of teaching objectives, materials and assignments to link the content course with the language course. In the present research, the content teacher and the language teacher actually taught in the same class besides collaborating to plan the lesson and design teaching materials and activities together outside the class. The advantages of this team-teaching model is, firstly, the avoidance of the ISKD (In Class Subject Knowledge Dilemma) situation⁴⁸ (Wu & Badger, 2009) that have been confronted by many ESP teachers (as evidenced by Episode 6 in Section 8.2.2) and, secondly, the exposure to each other’s instruction inside the class that leads to substantial understanding of the other’s knowledge domain and instructional practice.

Of course, this model of team-teaching is “relatively expensive” (Graham & Beardsley, 1986) as compared with the situation in which the course is taught by one teacher alone. But working closely with the language teacher in designing the course, preparing materials and assignments and participating in the class can effectively remedy the uniquely dominant participation of medical personnel in EMP instruction (Maher, 1985). In particular, the language teacher’s working as a consultant during the EMP course is significant in the Chinese context as the literature review shows that the EMP courses in the Chinese context are especially dominated by medical specialists in most Chinese medical colleges or universities and generally EMP is taught by medical subject

⁴⁸ In Class Subject Knowledge Dilemma refers to the difficult situations in which language teachers have to cope with unanticipated issues related to their subject knowledge in class (Wu & Badger, 2009).

teachers rather than English teachers (Li, et al., 2007). The present research can therefore provide insights for implementing similar research in the Chinese context and change this situation. This model of team-teaching is also significant for similar contexts outside China, especially in EFL learning contexts.

10.2.3 Enhancing Understanding of Some Key Constructs

The findings of the present research help to enhance understanding of some key constructs, namely: (i) Critical needs analysis, (ii) Activity Theory, (iii) Concept formation, (iv) Boundary crossing, and (v) Genre-based pedagogy.

✧ Critical Needs Analysis

Critical needs analysis aims at both the understanding of the existing conditions and the transformation of them. Its objectives are three-fold in that it aims to: (a) describe, (b) criticize, and (c) transform. The critical needs analysis in the present research not only involves a re-orientation of research focus (i.e. focusing on analysis, criticism and transformation), but also a re-orientation of research methods from the perspective of Activity Theory (see below). It brings about insights to conduct critical needs analysis as an important way to innovate in educational contexts: using activity as the unit of needs analysis, analyzing the existing conditions by seeing into the inner contradictions of the activity systems involved, formulating new tools to resolve the contradictions, and, finally, investigating the results of transformation in learning behavior and conceptualization of learning needs

✧ Activity Theory

Activity Theory is the sociocultural way of studying human mental development as happening in a collective, artifact-mediated and object-oriented activity system that is characterized by multivoicedness and developed through the resolution of inner

contradictions. In the present research, Activity Theory is used as both a contextualizing tool and an analytic tool to study the situation of learning. Using Activity Theory as an analytical tool in needs analysis enables the present research to adopt a critical approach to analyzing the medical students' English learning needs, seeking ways to transform the current perceptions of English learning, and evaluating the interventional results.

◇ Concept formation

Engestrom (2004) regards the process of concept formation as the process of learning that begins from a theoretical, abstract, and simple idea and transforms it into practical, concrete, and complex manifestations. In the present research, the students for in-depth analysis tend to grasp the features of some specific genres and develop practical understanding of them as learning tools in their study without being able to formulate a theoretical concept for genre. This finding indicates that concept formation in some learning behaviors may be far more complex than expected. The process of concept formation in workplace has been studied extensively (Engestrom, 2001a & 2004; Engestrom, et al., 1995), but classroom learning investigated from the theoretical perspective of concept formation is not common. The present research raised the significance of studying classroom learning from this perspective by enhancing the understanding of the students' learning process and identifying ways to improve learning. For instance, in the present research, it was found that the concept of genre should be more consciously taught to the students so that they can develop a knowledge framework of genre and generalize what they have learnt into a wider scope of learning.

◇ Boundary-crossing

“Boundary crossing” is formulated as the crossing of boundaries between different activity systems driven by new conceptual resources (Engestrom et al., 1995). The boundary-crossing actions are presented in an expansive learning cycle to display the quality of evolution during the interaction of the activity systems (Engestrom, 2001b). The present research has identified three cycles of boundary-crossing actions expansive

in both activity setting⁴⁹ and boundary zone⁵⁰ (see Figure 8.1) and finally leading to bilateral boundary-crossing learning. To be more competent to teach the ME class, the ME teacher has to make use of her knowledge in both medical field and English language. In other words, being a good ME teacher means the necessity of operating in and moving between the activity system of medical teaching and the activity system of English language teaching. The boundary-crossing action cycles in the present research provides a new model to research collaboration at a time when a newly emerging landscape of expertise requires experts to be operating in, and move between, multiple parallel activity contexts (TuomiGrohn et al., 2003). A similar view of expertise is also expressed by Engestrom.

There is a new generation of expertise around, not based on supreme and supposedly stable individual knowledge and ability but on the capacity of working communities to cross boundaries, negotiate and improvise “knots” of collaboration in meeting constantly changing challenges and reshaping their own activities. (Engestrom, 2004, p. 145)

The theoretical perspectives of boundary-crossing between the community of practice in medical teaching and the community of practice in English language teaching offer insights to the understanding and acquisition of this new generation of expertise.

✧ Vertical and horizontal dimension of expansive learning

Learning is conceptualized as the Zone of Proximate Development (ZPD) by Vygotsky, which refers to the distance between “actual developmental level as determined by independent problem solving” and the higher level of “potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p.86). But Engestrom thought it necessary to expand the theoretical framework beyond the vertical idea embedded in ZPD and incorporate the

⁴⁹ Activity setting refers to the “contexts in which collaborative interaction, intersubjectivity, and assisted performance occur” (Tharp & Gallimore, 1988, p.72).

⁵⁰ Boundary zone refers to both the *place* where elements from both activity systems are present and the *scope* of involvement into the other’s activity system when the border-crossers cross the border (Konkola, 2001, cited in TuomiGrohn et al., 2003).

horizontal dimension in such zones. He (1999) reconceptualized learning as development of both horizontal movement across *borders* when two or more activity systems interact and vertical movement across *level* of developments, which comprise the two dimension of expansive learning.

The present research borrow these terms to describe the expansive learning of all research participants (i.e. the students, the ME teacher, and the researcher) in the genre-based framework (see Section 9.1 and the summary in Table 10.1). The terms have been expanded to relate the vertical dimension with conceptual development, and horizontal dimension with practical development. For the students, vertical development involves broadened view of English learning needs, new identity for the future and reconceptualized value of English learning; for the ME teacher and the researcher, the new understanding of medical language, new value of the ME course or GBP, and the new identify of being a ME/GE (General English) teacher, all of which belong to conceptual gain and stress the development in levels of understanding. The horizontal dimension, on the other hand, deals with practical gain in terms of how to apply the surface features of specific genres and use genre knowledge as learning skills or tools (for the students) and how to operate the ME/GE course with the help of GBP (for the ME teacher and the researcher). It lays a greater emphasis on the scope of learning which expands from one area to others.

❖ Genre-based pedagogy

In the current research, genre-based pedagogy includes relevant lesson plans, teaching materials and actual classroom practice that are shaped by the genre-based pedagogical principles to offer learners explicit understanding of how texts in target genres are structured and why they are written in the ways they are (Hyland, 2003 & 2004). The findings from the GBP-mediated learning have raised the following issues to improve the teaching effectiveness of GBP in classroom instruction:

✓ Explicitly instructing genre and genre analysis

There are doubts over the usefulness of explicit instruction of genre

knowledge in the classroom (Freedman, 1993). The present research has found the potential of genre as a tool to help students develop a better understanding of learning, the learning process, and the ways to improve learning. It indicates that explicit classroom instruction of genre can raise the students' awareness of how English language is used in the context of situation and of the role English plays in academic learning and career development. The findings from the research even suggest that the strategies of genre analysis need to be highlighted and practiced in the classroom so that more students can intentionally use it as a learning method when coming across new genres (see Section 9.4.2).

✓ Effectively integrating GBP into content-based programs

The findings from the current research also suggest that for the GBP to be effectively integrated into the content-based programs, some issues need to be considered carefully, namely identifying the students' learning needs while at the same time catering to their learning interests and keeping a sensitive balance between the genre-based content and the students' academic learning levels.

✓ Conducting GBP training for content teachers

The current research studies the ME teacher's conceptual development of genre and GBP as a way to find out how the new concepts facilitate the classroom instruction. For the ME teacher to understand the concepts, the researcher provided some sorts of GBP training for the ME teacher through the focus discussions of GBP principles and lesson plans (see more detailed introduction in Section 8.1.4). It is found that helping the ME teacher substantively developed an understanding of genre and GBP, so that one could successfully apply GBP in a content-based program like the ME course and improve learning. GBP training for content teachers is therefore important for the success of genre-oriented content-based programs.

10.3 Limitations of the Research

Section 3.3 has discussed the possible limitations of the present research and listed strategies to remedy them, such as triangulation, prolonged observations, and member checking. Reflection on the research upon its conclusion naturally reveals that some limitations still persist despite attempts to control them. This section discusses the

limitations in terms of its critical ethnographic design and the intervention case study design.

10.3.1 Limitations of the Critical Ethnographic Design

◆ The Issue of Generalizability

The present research was conducted in a medical college in a secondary city in China. By “secondary”, it refers to the administrative rank of the city. The context-sensitive approach it has adopted has helped to explore how medical English learning is perceived by different parties in the socio-cultural environment of the college. But, as Wexler (1987) criticizes, I think it is possible that the “locus of analysis” may be “too site specific”. Some context-specific descriptions may have added to the thorny issue of generalizability of this research. The data collected in the first stage of the research, namely the English learning needs analysis of the medical students in this college, came from the students, teachers, administrators, and medical doctors that were studying or working in the medical college, which meant that their perceptions of medical students’ English learning needs were more or less restrained by their immediate study and work environments. Due to practical problems, the research failed to interview the students interning or doctors working in the hospitals in bigger cities such as Guangzhou and Shenzhen⁵¹, where the degree of openness to the outside world is much higher than the city in which the medical college is located. The “environment of using English and being exposed to English-speaking situations may greatly vary. Therefore, the medical students’ English needs investigated in this context may not be representative to medical

⁵¹ According to the statistic provided by the Student Affairs Office of the medical college, about 30% of the last-year students intern in hospitals in cities other than the one the college is located.

students studying in other colleges or universities in China. Hence one might doubt the possibility of generalizing the results of the present research into other studying and working contexts.

However, generalizability is not a serious issue because the purpose of the case study is not to generalize (Yin, 2003; Merriam, 1988). And some steps have been taken to enhance the reliability and trustworthiness of the findings, such as providing rich, thick description of the investigated context through different sources of data (i.e. official documents, observations and interviews) so that the readers can decide whether the investigated situation match their research situations and whether the findings from the present research can be transferable.

◆ The Problem of Empowering

Section 3.1.1.2 has presented the advantages of critical ethnography over traditional, descriptive ethnography. What distinguishes the critical one from the descriptive one is the practice of critical ethnographers to “speak ‘on behalf’ of their subjects as a means of empowering them, giving them ‘voice’ (Creswell, 1998, p.211)”. Critical ethnographers enjoy more interpretative freedom to articulate the meanings of the informants (Canagarajah, 1993). Creswell (1998) suggests two points where the critical ethnographers can verify their interpretation: the verification through triangulation and informant consensus and the verification through the researcher’s personal reflection. In the present research, the triangulation of sources and methods has been made to the greatest extent possible and, as a way of maintaining reflexivity, research journals were written as well. But informant consensus was not fully obtained. Although all

transcriptions of interviews or discussions were sent back to the participants for clarification, most of them could not be given the chance to know about the interpretation of data and findings of the research (except Fang, the ME teacher, who worked with the researcher to analyze the findings from the needs analysis and the interventional case study as part of the boundary-crossing actions). In this sense, the “voice” that was given to the subject (in this case, medical students) would have been further empowered with consensual analysis.

10.3.2 Limitations of the Genre-based Interventional Instruction

The genre-based interventional instruction has enhanced learning from the ME course for some students. But some students neither paid adequate attention nor expressed satisfaction with some of the learning activities. And most students did not show signs of conscious development in the understanding of the concept of genre. The limitations of the instruction can be summarized as follows:

◆ The limited time devoted to the intervention instruction:

Because each ME teacher only taught a small section of the ME course (see the introduction of how the ME teaching load was divided among the ME teachers in Section 3.2.4.2), cooperating with one ME teacher greatly restricted the length of the intervention case study. The case study only lasted for four weeks. The genre knowledge that could be imparted in such a short time was limited. Some genre theorists might say that it is not possible to impart “genuine” genre knowledge in such a short space of time. This possibly limits the instruction’s effectiveness to greatly facilitate the students’ appropriation of genre and GBP as learning tools and generalize the learning into other subject domains. If more time had been available, we could have produced a framework of genre-based teaching and assessment for a

whole ME course, which would be significant for later instruction and research. It is therefore suggested that follow-up study in the future may involve a project of longer duration.

Moreover, the short time devoted to the intervention instruction may well have restricted the sources of the evidence of the students' learning in the present research. I had to rely mainly on the students' self-reported data (i.e. the interview data) to investigate their learning. The evidence about the impact of GBP on the students' short-term learning, namely how they master the surface features of certain genres can be triangulated with the data from the classroom observations and the students' written products. But their long-term learning, such as how they use genre knowledge as a reading skill or genre analysis as a learning method, was beyond the scope of this research, although the long-term effect is an essential research area.

◆ Lack of validation of the genre-based materials

The teaching materials and activities had been designed based on the principles stemming from an eclectic approach to the three perspectives of genre theories (i.e. Systemic Functional Linguistics, New Rhetoric, and English for Specific Purposes. See Section 3.2.4.2 for detailed introduction). To validate its appropriateness for the ME course, one unit of the teaching materials has been peer reviewed by a microbiology professor who used to teach medical English in a Japanese university (see Section 3.3.2)⁵². The results of the genre-based instruction would have been more convincing if the genre-based materials had also been validated by experts in genre study and piloted.

◆ Quality of teaching

The genre-based teaching effects might also have been influenced by the clarity of delivery and teaching effectiveness of the teachers, namely Fang and I, the researcher. Teacher knowledge is an additional problem. One limitation of GBP, as

⁵² The microbiology professor was not able to spare time to review more units because of his own busy schedule.

Paltridge (2001) points out, is the difficulty that involves the notion of genre itself that is the difficulty to identify a spoken or written text as an instance of particular genre and describe its characteristic features. Such a difficulty depends on the teacher's genre knowledge which entails both textual knowledge and social and cultural knowledge. For teachers who are not native-speakers of the language they are teaching and who are not teaching in a community in which the target language is not spoken (exactly the case in the present research), this issue becomes more complex. The present research did not inquire about the students' comments on the teaching quality of GBP. But it indicates that in other genre-based studies that involve teacher-researchers, the teacher factor, including the quality of teaching, which can affect the results of the study, can be the focus of study.

◆ The interventionist position

In the intervention case study, the desire of the researcher for the intervention to succeed might be another possible limitation of the methodology. Although at the very beginning, I have made it clear to Fang and the students that the results of the genre-based instruction was open and they could express any negative ideas, my strong belief in GBP might have affected their attitudes to and expectations from the instruction and to a certain extent contributed to a generally positive evaluation of the interventionist instruction.

My interventionist position has also met with some challenges during the case study. The biggest one was the negotiation with the ME teacher to give up some part of medical knowledge instruction to spare time for genre-based activities. To avoid being too intrusive and to ensure Fang that she could play an equally important role in the case study, I had to skillfully explain my concerns on the teaching content. Sometimes I had to give up my original plan because of Fang's insistence on her own teaching plans. For example, Fang believed that translating skills were very important for the students and insisted on teaching translation in the third unit. Although I had gathered data concluded from the needs analysis that translation is not as important as other skills, such as reading and writing, I had to compromise at

the end.

5

10.4 Directions for Further Research

Based on the findings and limitations of the present research, this section discusses the areas for further research in needs analysis, genre-based medical English course development, teacher training and motivational study.

10.4.1 Conducting Interscholastic Needs Analysis

The present research conducted medical students' English learning needs analysis in a medical college located in a secondary city in China. It would be significant to conduct a similar needs analysis in other medical colleges or universities located in major cities such as Guangzhou or Shanghai and compare the results of the analysis with those from the present research to identify factors that influence the perceptions of English learning needs, such as institutional culture and working environment that are more closely related with the degree of openness to the outside world of the city. Such interscholastic needs analysis will add to the understanding of Chinese medical students' English learning needs and shed light on research on course design and materials development of EMP in China.

10.4.2 Developing Genre-based Medical English Course

Developing a genre-based medical English course provides many focuses of analysis for future research, to name just a few:

- ◆ The genre-based instruction of academic listening, reading, speaking, writing,

translating and terminology

Genre-based instruction has long been applied in writing class, and occasionally in reading, listening, and speaking class. Developing a genre-based medical English course will meet the challenges of using GBP to teach medical terminology and translation in addition to the four basic language skills.

◆ The long-term effect of genre-based study

The present research investigated the short-term effects of genre-based study among the medical students and failed to provide more evidence for long-term aspects of learning, such as using genre knowledge as a reading skill or using genre analysis as a learning method. A coherent genre-based ME course will allow the researcher to investigate the long-term effect of genre-based study. In addition, as suggested by Cheng (2006), using approaches that explicitly address learning such as Language Awareness and Learner Autonomy can lead to exciting possibilities of studying how genre-based learning happens.

◆ The effect of genre-based study among different subject learning levels

Developing a genre-based medical English course creates opportunities for medical students of different subject learning levels to get involved in genre-based study, allowing the researchers to study how different subject learning levels may influence genre-based study.

◆ Systematic assessment of genre-based learning and program effectiveness

Stoller (2004) lists the systematic assessment of students' language and content learning and program effectiveness as one of the challenges for content-based curriculum development. Hyland (2007) has suggested the idea of genre-based assessment and how genre can be used to interweave teaching and assessment. One focus of analysis for future research will be the establishment of a systematic assessment system of the genre-based medical English course.

10.4.3 Researching on GBP in Other ESP Contexts

Future research can also be done on GBP in other ESP contexts. For example, although business English has become an important branch of ESP research in China (Pang, et al., 2002; Yuan, 2005; Zhao, 2006), few studies have been undertaken on genre-based pedagogy. It will be worthwhile to research GBP in business English instruction. Moreover, business English instruction involves a lot of collaboration between the teaching faculty and the business organizations, the developmental research model and GBP-mediated expansive learning model in the present research will be useful for conducting research on this collaboration and for investigating the boundary-crossing between school and work that is mediated by GBP.

10.4.4 Investigating Teacher Collaboration in More Educational Contexts

Section 10.2.2 has discussed the significance of the present research for researching team-teaching in ESP programs. Further research can be done to investigate how subject specialists collaborate with English teachers in areas other than classroom instruction, such as training for novices in workplaces. With the framework of expansive learning theory, a researcher will be able to analyze how learning happened horizontally in the interaction and boundary-crossing of different activity systems in other educational contexts other than the classroom.

10.4.5 Researching Teacher Training for Language Pedagogies

The present research has explored how a novice of GBP (i.e., Fang, the ME teacher) has appropriated and developed understanding and application of GBP in teaching practice.

It would be significant for further research to be done in the area of teacher training. In particular, how new language pedagogies are introduced to the novices, such as student teachers, and how they form and transform the new concepts can be studied from the perspectives of boundary-crossing and concept transformation, bringing insights for pre-service and in-service teacher training and education.

10.4.6 Researching Motivational Strategies in English Language Classroom

The present research has indicated that overwhelming external stress, such as the institutional requirements, may demotivate students in learning English and lead to resistant attitudes. Thus I believe in the importance of establishing motivation-sensitive teaching practice in the language class. A good case in point is one of the students for in-depth analysis who was “numb” to all English-related curricular learning (but not learning that was self-motivated, e.g. reading English novel or magazine), including the genre-based instruction in the present research. Further research can also be done to see how this problem of demotivation can be resolved through the application of motivational strategies with reference to GBP and/or using critical needs analysis as a tool in the English language classroom. Some strategies suggested by Dornyei (2001), such as enhancing the learners’ language-related values and attitudes, increasing the learners’ goal-orientedness, or making the teaching materials relevant for the learners, are worth researching in the EFL context.

Conclusion

This chapter has summarized the major findings of the present research, discussed its

significance, pointed out its limitation, and suggested areas for further research. The major findings have been presented as three steps of critical needs analysis to answer the research questions, namely the investigation of medical students' English learning needs as perceived by different parties, the critical analysis of these learning needs as inner contradictions of the ME activity system, and the transformation of ME activity systems as a result of expansive learning in the genre-based instruction framework. The significance of the present research has been discussed in three broad areas namely the significance of: (i) researching learning in ESP courses socio-culturally (through multi-planed socio-cultural analysis) and critically (through an expansive developmental research model), (ii) researching team-teaching, and the enhanced understanding of the key constructs in the present research. In particular, a renewed GBP-mediated expansive learning model (see Figure 10.2) has been proposed for future research. The limitations of the present research lie in the overall design of critical ethnography concerning the problems of generalizability, empowerment and the particular limitations of the genre-based interventional instruction. Finally, areas worthwhile for future research have been suggested in needs analysis, genre-based medical English course development, teacher training and motivational studies.

This thesis begins by stating the three-fold research purposes as a way to conduct a critical needs analysis of medical students' English learning needs in a Chinese medical college. The purposes have been realized by a comprehensive needs analysis in the investigated context and an attempt to meet the needs by piloting an intervention case study in the framework of genre-based pedagogy. It concludes with expansive learning among all participants of the research, namely the students, the ME teacher and the

researcher herself.

An important precondition for the present research is a cooperative ME teacher who is open to new ideas and ready and willing to take on extra work as the research proceeds. The collaboration between Fang and me was built totally on mutual trust and mutual understanding of each other's job. Rather than a large-scale study sanctioned by the college, the case study was a personal endeavour on the part of the researcher, conducted on a small scale without any interference from the college. It would be argued that despite the promising findings of the study, a critical approach to pedagogic innovation such as this one may meet with a lot of obstacles in a society based on Confucian values and harmony, and that any follow-up research using such a critical framework can be difficult.

The research shows that critical needs analysis can be re-conceptualized as the process of expansive learning for the researcher, beginning with the questioning and analyzing of the learning needs of the current learning activity system, followed by the formulation and implementation of new mediational tool (a new concept, model, or methodology), and concluding with re-conceptualized and transformed learning needs in a culturally more advanced activity system. It is hoped that this journey of exploration can add to the understanding of future research and lead to learning on the parts of both the researcher and the researched.

Appendix 1A: The English Learning Questionnaire for the First Piloting

Directions: *This questionnaire aims at investigating the perceptions related to English usage and teaching. The information provided in response to the items in the questionnaire will be strictly confidential and used for the sole purpose of academic research. Please provide accurate answers or check the appropriate response.*

Section I. Personal background

1. Age _____
2. Sex _____
3. Grade _____
4. How many years have you been learning English? _____
5. Have you ever been to any English-speaking country? Yes ___ No ___
If yes, for what purposes? Traveling ___ Total length of stay _____
Study ___ Total length of stay _____
Work ___ Total length of stay _____
Academic activities ___ Total length of stay _____
Other purposes (Please specify) _____

Section II. Your purposes and reasons of learning English On a scale of 1 to 5, indicate how much you agree or disagree with each statement, 1 being the most strongly disagree, 5 being the most strongly agree.

6. I learn English so that I get better marks at school. _____
7. I learn English so that I can pass an examination in English. _____
8. I learn English so that I can travel to other countries. _____
9. I learn English so that I can communicate with foreigners. _____
10. I learn English so that I can get a better job after graduation. _____
11. I learn English so that I can learn more about the English-speaking countries. _____
12. I learn English so that I can understand songs in English. _____
13. I learn English so that I can understand films or TV in English. _____
14. I learn English so that I can understand books in English. _____
15. I learn English so that I can understand the Internet resources. _____
16. I learn English because I enjoy learning English. _____
17. I learn English because English is a compulsory course in the university. _____
18. I learn English because English is a very important part of my medical study. _____
19. I learn English because English is an important world language. _____
20. I don't know why I'm learning English. _____
Other reasons (Please specify) _____

Section III. The importance of learning English On a scale of 1 to 5, indicate how important you think English skills are in the medical English course, your current medical studies and future career. Please mark after each statement, 1 being the less important, 5 being the most important.

21. How important do you think English is to your **current** medical studies? _____
22. How important do you think English is to your **future** careers? _____
23. How important do you think the following English language skills are for your success in **medical study**? _____

Writing _____ Reading _____ Listening _____ Speaking _____
Grammar _____ Vocabulary _____

24. How important do you think the following English sub-skills are for your success in **medical studies**?

Reading

English textbooks _____ Course handout and assignment _____
Medical journal articles _____ Texts on the computer _____
Instructions for labs _____ Study notes _____
Others (please specify and mark the importance) _____

Writing

Lab reports _____ Assignments _____
Taking notes in lectures _____ Medical record _____
Answering exam questions _____ letters or emails _____
Research articles _____
Others (please specify and mark the importance) _____

Speaking

Daily conversations _____ Conversations in workplace _____
Presenting oral reports _____ Asking questions in class _____
Participating in class discussion _____ Participating in academic discussion _____
Others (please specify and mark the importance) _____

Listening

Following lectures _____ Following class _____
Listening to oral presentation _____ Listening to radio/other audio materials _____
Others (please specify and mark the importance) _____

Grammar

Doing grammar exercises _____ Listening to lectures on grammar _____
Others (please specify and mark the importance) _____

Vocabulary

Doing vocabulary exercise _____ Memorizing new words _____
Participating in spelling contest _____
Others (please specify and mark the importance) _____

25. How important do you think the following English learning areas are in the **Medical English course**?

Writing _____ Reading _____ Listening _____ Speaking _____
Grammar _____ Vocabulary _____

26. How important do you think the following English sub-skills are in the **Medical English course**?

Reading

English textbooks _____ Course handout and assignment _____
Medical journal articles _____ Texts on the computer _____
Instructions for labs _____ Study notes _____
Others (please specify and mark the importance) _____

Writing

Lab reports _____ Assignments _____
Taking notes in lectures _____ Medical record _____

Answering exam questions _____ letters or emails _____
Research articles _____
Others (please specify and mark the importance) _____

Speaking

Daily conversations _____ Conversations in workplace _____
Presenting oral reports _____ Asking questions in class _____
Participating in class discussion _____ Participating in academic discussion _____
Others (please specify and mark the importance) _____

Listening

Following lectures _____ Following class _____
Listening to oral presentation _____ Listening to radio/other audio materials _____
Others (please specify and mark the importance) _____

Grammar

Doing grammar exercises _____ Listening to lectures on grammar _____
Others (please specify and mark the importance) _____

Vocabulary

Doing vocabulary exercise _____ Memorizing new words _____
Participating in spelling contest _____
Others (please specify and mark the importance) _____

Section IV. The existing Medical English course

27. What percentage of the classroom instruction do you think should be done in English? (Please check)
- 90—100% _____ 70—80% _____ 50—60% _____ 30—40% _____ less than 20% _____
28. What percentage of the classroom instruction is done in English now? (Please check)
- 90—100% _____ 70—80% _____ 50—60% _____ 30—40% _____ less than 20% _____
29. Which English skills are taught in the Medical English course? Mark the ones that are taught in the class according to the degree of frequency from 1 to 5, 5 being the most frequent ones.
- Writing _____ Reading _____ Listening _____ Speaking _____
Grammar _____ Vocabulary _____
30. What kinds of teaching activities take place in the Medical English course? Mark the ones that take place in the class according to the degree of frequency from 1 to 5, 5 being the most frequent ones. Leave the non-existing ones blank.
- Teacher lecture _____ Student oral presentation _____
Role playing⁵³ _____ Grammatical drills _____
Vocabulary drills _____ Audio/video playing _____
Group discussion _____
Other activities (Please specify and mark) _____
31. How do you like the teaching activities in the Medical English class? Mark the ones

⁵³ Role playing refers to drama-like classroom activities in which students take the roles of different participants in a situation and act out what might typically happen in that situations.

that take place in the class according to degree of preference from 1 to 5, 5 being the most preferred one. Leave the non-existing ones blank.

Teacher lecture _____ Student oral presentation _____
Role playing _____ Grammatical drills _____
Vocabulary drills _____ Audio/video playing _____
Group discussion _____
Other activities (Please specify and mark) _____

32. How do you like the current teaching materials in the Medical English course? Mark the ones that you have for the course according to degree of preference from 1 to 5, 5 being the most preferred one. Leave the non-existing ones blank.

The current textbook ("New Medical English") _____

The supplemental text materials, if there is any provided by the teacher _____

The supplemental audio materials, if there is any provided by the teacher _____

The supplemental video materials, if there is any provided by the teacher _____

Please specify and mark if there are other kinds of teaching materials used in the course:

Section V. Current proficiency

33. How do you evaluate your abilities in the following English language skills? Please mark with 1 (very weak), 2 (weak), 3 (average), 4 (Good) and 5 (very good).

Writing _____ Reading _____ Listening _____ Speaking _____

Grammar _____ Vocabulary _____

34. Do you have any problems in English learning? Yes _____ No _____

If yes, what English problems do you perceive you are currently facing in your studies? (Please mark on the scale of 1-5, 5 being the most serious ones)

The students have problems in listening comprehension. _____

The students have problems in speaking skill. _____

The students have problems in reading comprehension. _____

The students have problems in writing. _____

The students have problems in translation. _____

The students have problems in grammar. _____

The students have problems in vocabulary. _____

Other problems (Please specify and mark) : _____

Section VI. Preferred style of learning English On a scale of 1 to 5, indicate how much you agree or disagree with each statement, 1 being the most strongly disagree, 5 being the most strongly agree.

35. I like to work in pairs. _____
36. I like to work in small groups. _____
37. I like to learn with the whole class. _____
38. I like to work alone in class. _____
39. I like the teacher to offer individual help to students in class. _____
40. I like the teacher to correct all my mistakes. _____

41. I like the teacher to be strict and control the lesson. ____
42. I like the teacher to follow a textbook closely. ____
43. I like the teacher to make explanations in Chinese. ____
44. I like the teacher to give detailed explanation. ____
45. I like the teacher to raise questions. ____
46. I like the teacher to make learning fun. ____
47. I like the teacher to give tests. ____
48. I like the teacher to give homework. ____
49. I learn best from Chinese teachers. ____
50. I learn best from foreign teachers. ____
51. I like to study grammar and the rules of correct English. ____
52. I like to learn new words. ____
53. I like to practice the sounds and pronunciations of English words. ____
54. I like to have translation exercises in class. ____
55. I like to have reading exercises in class. ____
56. I like to have writing exercises in class. ____
57. I like to have speaking exercises in class. ____
58. I like to have listening exercises in class. ____
59. I like to give oral presentation in class. ____
60. I like to learn through games in class. ____
61. I like to learn through role plays in class. ____
62. I like the teacher to use radio, videos and films. ____
63. I like to learn English through grammar exercises after class. ____
64. I like to learn English through surfing on the Internet after class. ____
65. I like to learn English through English songs after class. ____
66. I like to learn English through TV or films after class. ____
67. I like to learn English through reading newspaper, magazines or books after class. ____
68. I like to learn English through participating in campus activities after class. ____
69. Are there other ways of learning English after class that you prefer? Please specify:

VII. Your feedback on this survey

70. Is there anything else that you want to comment on English learning/teaching but not appearing in this survey? Please specify.

71. Do you have any difficulties completing this survey? Please give your suggestions to improve this survey.

Appendix 1B: Section II in the English Learning Questionnaire for the Second Piloting

Section II. Your purposes and reasons of learning English On a scale of 1 to 5, indicate how much you agree or disagree with each statement, 1 being the most strongly disagree, 5 being the most strongly agree.

6. I learn English so that I can understand English films, videos, TV or radio.
7. I learn English so that I can broaden my view.
8. I learn English so that I can understand English pop music.
9. I learn English so that I can travel abroad.
10. I learn English so that I can read English books, newspapers or magazines.
11. I learn English so that I can understand the Internet resources.
12. I learn English because it makes my life less monotonous.
13. I learn English because I want to think and behave like the English/Americans do.
14. I learn English because I am interested in foreign languages.
15. I learn English because I want to work abroad later.
16. I learn English because I have to pass some examinations in English.
17. I learn English because it will enable me to learn more about what is happening in the world.
18. I learn English because I want to be similar to the English/Americans.
19. I learn English because I would like to make friends with foreigners.
20. I learn English because my parents expect me to learn it.
21. I learn English because an educated person is supposed to be able to speak English.
22. I learn English because it offers a new challenge in my life
23. I learn English because I want to study abroad later.
24. I learn English because I need it in my medical study.
25. I learn English because English is a compulsory course in the university.
26. I learn English because it will enable me to know various cultures and people.
27. I learn English because I need it in my future job.

Appendix 2A: Genre-Based Instruction Questionnaire (for pilot intervention case study)

Please check the appropriate response to evaluate the class you have just have. The data from this survey will only be used for research purposes rather than the official evaluation of the teacher or the course. Your honest responses will be of great help to improve the instruction. You don't have to sign your name. Thank you for your cooperation!

	Strongly Agree				Strongly Disagree
	5	4	3	2	1
	←—————→				
1. The unit is useful in helping me to understand the urinary system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The unit is useful in helping me to understand the role of English in medical contexts (study or workplace situations).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The unit is useful in helping me to use English in medical contexts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The sample texts offered in this unit are useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The activities in this unit are helpful in my study.					
a. Teacher's introduction of knowledge on urinary system by Miss Fang.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Teacher's introduction of knowledge on language use in different situations by Miss Yang.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Students' practice of describing the structures and functions of urinary system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Students' practice of oral interactions in different situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The teacher's instruction is effective.					
a. Miss Fang's instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Miss Yang's instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The teaching approach used in this unit is effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. The teaching approach used in this unit is interesting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. What have you learned most from this unit?					
10. What do you like most of this unit?					
11. What do you like least of this unit?					
12. Please make any further comments on the strengths /weaknesses of this unit.					

Appendix 2B: Reflection Log (for pilot intervention case study)

Unit: The Urinary System

Time: March 2 & March 4, 2009

Class: First-year student, class 2

1. What are your observations and comments on the students' responses in the class

		My observations and comments
Students' responses to different classroom activities	Instruction on the knowledge and terminologies of urinary system	
	Instruction on sample texts of description	
	Instruction on sample texts of case history, operative report, and discharge summary	
	Instruction on language use in different medical situations	
	Exercises on terminologies	
	Students describing urinary system in English	
	Practices on conversations	

2. How do you evaluate the time distribution, sequence and difficult levels of the activities?

3. How do you evaluate the outcome of students' learning?

4. Will you use a similar teaching approach or teaching materials in your future class? If yes, what revisions will you make to improve teaching?

5. What you have learned from this team-teaching?

Appendix 2C: Classroom Observation Protocol (for pilot intervention case study)

Unit: The Urinary System

Time: March 2 & March 4, 2009

Class: First-year student, class 2

1. My observations and comments on the students' responses in the class

		My observations	My comments
Students' responses to different classroom activities	Instruction on the knowledge and terminologies of urinary system		
	Instruction on sample texts of description		
	Instruction on sample texts of case history, operative report, and discharge summary		
	Instruction on language use in different medical situations		
	Exercises on terminologies		
	Students describing urinary system in English		
	Practices on conversations		

2. Is there anything about the instruction that deserves further discussion with the teacher?

Appendix 2D: The Lesson Plan Used in the Pilot Intervention Case Study

Total time: 250 minutes

Class: the first-year student, Class 2 (No=47)

The medical teacher's original plan

Teaching objectives:

- Describe the structures and main functions of the urinary system
- Know the structures of kidney and nephron
- Describe the process of urine formation
- Describe the process of urination
- Common diseases of urinary system

Teaching activities:

1. Teacher introduces related word roots, the overall structure of urinary system, including key organs and their functions, and the formation of urine and process of urination.
2. Students explain the structure and functions of urinary system, using the terms and knowledge they have just learned.
3. Students do filling exercise for terms --- choosing from a list of terms to complete several statements relevant to urinary system.
4. Teacher introduces symptoms and signs of urinary system disorders, including tests for relevant diseases
5. Students role play in the dialogues between the intern, patient and the resident.

Revised lesson plan after discussions between the medical English teacher and the researcher

Teaching objectives:

- Students will have the basic knowledge about urinary system and master some basic terminologies.
 - Students will know the structures and main functions of the urinary system and master relevant English terminologies
 - Students will know the common diseases of urinary system and master relevant English terminologies
- Students will be able to apply the medical knowledge and terminologies in different situations that use English
 - Students will be able to describe the structure and main functions of the urinary system (esp. the structures of kidney and nephron, the process of urine formation and urination) and introduce common diseases of urinary system.
 - Students will be able to identify the differences between written and oral medical texts they may encounter or produce in learning or working situations.
 - Students will be able to identify the way in which language changes and is changed by the contexts in which it occurs.
 - Students will be able to present knowledge they have learned from this chapter in proper language according to the different situations given (short presentation in medical class, resident-intern dialogue or

doctor-patient dialogue)

Teaching activities:

1. Medical teacher introduces related word roots, the overall structure of urinary system, including key organs and their functions, and the formation of urine and process of urination. **(50ms)**
2. English teacher discusses the characteristics of grammar, word choices and discourse structures for descriptive texts of structures, using sample texts from the medical textbook. **(10ms)**
3. Students practice describing the structures and functions of urinary system. **(20ms)**
4. Medical teacher introduces symptoms and signs of urinary system disorders **(30ms)**
5. Medical teacher introduces common diseases of urinary system. **(30ms)**
6. Students do vocabulary exercises. **(10ms)**
7. English teacher discuss the linguistic and discourse features of sample texts of case history, operative report and discharge summary. **(10ms)**
8. English teacher introduces the way written language is transferred to oral interactions according to specific situations, using the three variables of field, tenor, and mode. **(5ms)**
9. Students role play in different given situations, based on the information from the sample case history, operative report and discharge summary: **(40ms)**
 - a. A patient of kidney stones complains to the doctor of his/her problems;
 - b. The doctor explains the disease and treatment to the patient after the examination results come out.
 - c. A resident explains the disease and operation to an intern.
 - d. The doctor gives advice to the patient after he/she has been operated and is about to be discharge.

Teaching Materials:

1. Sample text for description of structures: making definitions for organs

Definitions may simply be short, parenthetical additions to a sentence or perhaps a whole paragraphs or even several paragraphs. The extent of the definition depends on the purpose of the explanation, the level of familiarity your audience has with the subject, and the extent to which there is an agreed upon definition of the concept.

e.g.

Sentence definition

A. The kidney is a pair of organs in the body that remove waste products from the blood and produce urine.

Extended definition

B. The kidneys are bean-shaped organs, each about the size of a tightly clenched fist. They lie on the posterior abdominal wall behind the peritoneum and on either side of the vertebral column near the lateral borders of the psoas muscles. The superior pole of each kidney is protected by the rib cage, and the right kidney is slightly lower than the left because of the presence of the liver superior to it. Each kidney measures about 11 cm long, 5 cm wide, and 3 cm thick and weighs about 130 g. A fibrous connective tissue layer, called the renal capsule, encloses each kidney, and

around the renal capsule is a dense deposit of adipose tissue, the renal fat pad, which protects the kidney from mechanical shock. The kidneys and surrounding adipose tissue are anchored to the abdominal wall by a thin layer of connective tissue, the renal fascia.

1. Can you identify the situations in which the above definitions are given?

	Definition A	Definition B
Purpose:		
Audience:		
Channel:		
Situation:		

2. What are the linguistic characteristics and discourse structures of definition B?

Discourse structure:

Tense:

Voice:

The language of defining and naming:

2. Sample texts of case history, operative report, and discharge summary

Read the following samples of medical reports and try to understand them from two perspectives: the content and the language. In understanding the content, you need to relate the information with what you have learned from this unit. In understanding the language, you need to consider the following questions:

What information is included in the sample texts?

In what sequence are different kinds of information presented?

What grammatical and linguistic characteristics can you identify in these medical reports?

A. Case History:

This 32-year-old married white man, appearing his stated age, was admitted to the hospital after presenting himself to the emergency department in acute distress. He complained of intermittent pain in the right posterior lumbar area, radiating to the right flank. He has a family history of nephrolithiasis and has been treated for this condition several times in the past 10 years.

B. Operative Report:

Patient: John Allen

Date of Operation: May 21, 199X

Preoperative Diagnosis: urinary tract obstruction

Postoperative Diagnosis: Ureteral calculi

Surgery Performed: Ureterscopy with calculus extraction

Indication: The patient a 32-year-old previously healthy man presented with complaints of flank pain, oliguria, nausea, and chills. Patient denied gross hematuria. Diagnostic studies (kidney, ureter, bladder [KUB]; intravenous pyelogram [IVP]) revealed presence of a ureteral stone.

Procedure: The patient was placed in the dorsal lithotomy position. The area was draped and prepared in the standard manner. Thirty (30) ml of topical anesthesia (1% Lidocaine) was administered and a penile clamp applied to ensure retention. The ureteroscope was inserted, with access to the middle third of the ureter gained by passing a guidewire under fluoroscopic control. The guidewire was advanced beyond the stone and the calculus was delivered through the ureter, engaged in a retrieval basket, and removed. The patient tolerated the procedure well and left the operating room in good condition.

Melvin Peterson, MD
Urologist

C. Discharge Summary:

This patient was admitted to the urology unit from emergency department, complaining of severe intermittent pain in the back and right flank. His kidney, ureter, and bladder showed calculi in the region of the right renal pelvis. Laboratory data were all normal except for slight microscopic hematuria. Intravenous pyelogram showed three stones in the right kidney with minimum hydronephrosis. Cystoscopy with a right retrograde pyelogram confirmed the presence of three stones in the right kidney. Minimal ureteral obstruction was present. Pyelolithotomy was completed with no complication. A ureteral catheter was inserted as was an indwelling Foley catheter. Drainage from the right kidney as pale yellow in 48 hours. The Foley and ureteral catheters were removed 3 days postoperatively. At discharge, the patient is voiding without difficulty. The stones were sent to the laboratory for analysis. The report indicated that they were calcium oxalate. He is discharged to his home on restricted activity for the next 2 weeks. He is advised to drink copious amounts of fluids. He will be examined in the office in 3 weeks.

Appendix 3A: English Learning Questionnaires (for students)

Directions: *This questionnaire aims at investigating the perceptions related to English usage and teaching. The information provided in response to the items in the questionnaire will be strictly confidential and used for the sole purpose of academic research. Please provide accurate answers or check the appropriate response.*

Section I. Personal background

6. Age _____
7. Sex _____
8. Grade _____
9. How many years have you been learning English? _____
10. Have you ever been to any English-speaking country? Yes ___ No ___
 If yes, for what purposes? Traveling ___ Total length of stay _____
 Study ___ Total length of stay _____
 Work ___ Total length of stay _____
 Academic activities ___ Total length of stay _____
 Other purposes (Please specify) _____

Section II. Your purposes and reasons of learning English On a scale of 1 to 5, indicate how much you agree or disagree with each statement.

	Strongly agree				Strongly disagree
	5	4	3	2	1
6. I learn English because I can learn more medical knowledge through English.					
7. I learn English because the college provides chances to study abroad for some students good at English.					
8. I learn English because I am interested in foreign languages.					
9. I learn English to become more knowledgeable.					
10. I learn English so that I can behave and think like the English/Americans do.					
11. I learn English because it is a challenge.					
12. I learn English because I want to become more educated through English learning.					
13. I learn English because some examinations have to be taken in English.					
14. I learn English because I am interested in British and American culture.					
15. I learn English to broaden my outlook.					
16. I learn English in order to immigrate to a foreign country.					
17. Learning English adds something new into my life.					
18. I learn English because I want to improve myself as a medical professional in the future.					
19. I learn English because the college stipulates that English is a compulsory course.					

20. Learning English enables me to get to know new people from different parts of the world.
21. As an important international language, learning English help me understand the outside world.
22. Learning English enables me to integrate into the British/American society.
23. I learn English because it brings new experience to my life.

Other reasons (Please specify)

Section III. The importance of learning English On a scale of 1 to 5, indicate how important you think English skills are in your current medical studies and future career.

	Most important				Least important
	5	4	3	2	1
24 How important do you think English is to your current medical studies?					
25 How important do you think English is to your future careers?					
26 How important do you think the following English language skills are for your success in medical study ?					
a. Reading					
b. Writing					
c. Speaking					
d. Listening					
e. Translating					
f. Grammar					
g. Terminology					
27 How important do you think the following English sub-skills are for your success in medical studies ?					
A. <u>Reading</u>					
a. English textbooks					
b. Course handouts and assignments					
c. Medical journal articles					
e. Instructions for labs					
d. Internet resources					
B. <u>Writing</u>					
a. Lab reports					
b. Assignments					
c. Lectures notes					
d. Medical records					
e. Examination questions					
f. Letters or emails					
g. Research articles					
C. <u>Speaking</u>					
a. Having daily conversations					
b. Having conversations in workplace					
c. Presenting oral reports					
d. Participating in non-academic discussions					
e. Participating in academic discussions					

- D. Listening
 - a. Following academic lectures/seminars
 - b. Listening to class
 - c. Listening to radio/other audio materials
- E. Translating
 - a. Translating academic articles from Chinese to English
 - b. Translating academic articles from English to Chinese
 - c. Translating article abstracts from Chinese to English
- F. Grammar
 - a. Using grammar properly in writing
 - b. Using grammar properly in speaking
- G. Vocabulary
 - a. Understanding medical terminology in textbooks
 - b. Understanding medical terminology in literature reading
 - c. Pronouncing medical terminology properly
 - d. Using medical terminology in writing
 - e. Using medical terminology in academic discussions

Most important				Least important
5	4	3	2	1

Please specify other usage of English in medical study and mark the importance, if any:

Section IV. The current Medical English course

- 28. Do you think it is necessary for the medical students to take medical English course?
Yes ___ No ___
- 29. What do you think the focus of the medical English course should be?
 - a. Medical knowledge
 - b. English language skills
 - c. Both medical knowledge and English language skills
- 30. Which English skills do you think should be the focus of the Medical English course?
You can have more than one choice. Please check as appropriate.
 Reading _____ Writing _____ Speaking _____ Listening _____
 Translating _____ Grammar _____ Vocabulary _____

31. Which English skills are taught in the Medical English course?

- a. Reading
- b. Writing
- c. Speaking
- d. Listening
- e. Translating
- f. Grammar
- g. Terminology

Most frequent				Least frequent
5	4	3	2	1

32. What kinds of teaching activities take place in the Medical English class? Leave the non-existing ones blank.

- a. Teacher lectures
- b. Student oral presentations
- c. Role playing
- d. Grammatical drills
- e. Vocabulary drills
- f. Activities involving audio/video playing
- g. Group discussions
- h. Writing exercises
- i. Reading exercises

Most frequent				Least frequent
5	4	3	2	1

33. How do you like the teaching activities in the Medical English class? Leave the non-existing ones blank.

- a. Teacher lectures
- b. Student oral presentations
- c. Role playing
- d. Grammatical drills
- e. Vocabulary drills
- f. Activities involving audio/video playing
- g. Group discussions
- h. Writing exercises
- i. Reading exercises

Most preferable				Least preferable
5	4	3	2	1

34. How do you like the current teaching materials in the Medical English course?
Leave the non-existing ones blank.
- The current textbook (“New Medical English”)
 - The supplemental text materials, if any.
 - The supplemental audio materials, if any.
 - The supplemental video materials, if any.
- Please specify other materials in the class and check:

Most preferable				Least preferable
5	4	3	2	1

35. When do you think medical English should be taught in the 7-year medical study?
 You can check for more than one choice.

In the first year _____

In the second year _____

In the third year _____

In the fourth year _____

In the fifth year _____

In the sixth year _____

Having a short medical English course every year _____

The _____ reason _____ of _____ your _____ choice

36. What is the average time you spend on the medical English course after class every week?

0 – 0.5 hour _____

About 1 hour _____

1 – 2 hours _____

More than 2 hours _____

V. Your feedback on this survey

37. Is there anything else about English learning/teaching that you want to comment but not appearing in this survey? Please specify.

Appendix 3B: Classroom Observation Protocol (for needs analysis)

Date:

Time:

Course:

Class:

Teacher:

I. Instructional Activities

Activity					
Activity type					
Time spent on the activity					
Medium Of Instruction					
student involvement (little mediate high)					
student activity (taking notes, asking questions, asking for clarification, answering questions, giving comments, other)					
Teacher activity					
Purpose of activity (as discussed with the teacher later)					
Instructional aids					

II. Is there anything that can explicitly or implicitly indicating what and how the teacher wants the students to learn, or what and how the students want to learn?

Appendix 3C: Post-Observation Interview Prompts

A. Background information

- a. Major and academic background
- b. length of English learning
- c. Previous English learning/teaching experiences

B. Your English learning Needs

- a. What are your routine working activities? Can you describe a typical working day?
- b. Does English play a role in your daily jobs, e.g. teaching and researching? Why do you think you need English? What difficulties do you have using English in your job?
- c. Besides daily jobs, do you use English in your daily life, e.g. for entertainment or other kind of communication?

C *Your students' English learning needs*

- a. Why do you think **your students** need to learn English?
- b. How do you compare your own needs with your students' needs?
- c. How do you think you can help raise their awareness of the needs of learning English, as a teacher?

D. The Medical English course

- a. What do you think the objectives of the course should be?
- b. How important are the different language skills (reading, writing, speaking, listening, vocabulary or grammar) in medical studies? Which skills do you think should be stressed in the Medical English course?
- c.* What are your biggest concerns when preparing for the Medical English class?
- d. Do you have any purposes in mind when organizing each classroom activity?
- d.* What problems or difficulties do you think your students have in the medical English course?
- e.* What are the critical factors that have caused the difficulties/problems? How do you think these problems can be solved?

* Questions c, d, e in Section D are raised for the ME teachers to answer only

Appendix 3D: Focus Group Discussion Prompts

I. About English Learning

1. Which English course have you taken? What English exams you have taken or have to take in the future study?
2. What chances of using English do you have in your daily life or study?
3. What difficulties do you have in your study that is relevant to your English proficiency? Why are there the difficulties and how to solve them?
4. Why do you think you need to learn English (in the past, at present and in the future)?
5. What English skills are helpful in your medical study and career development?
6. In what aspects do you needs English in medical study and career development (exams, employments, further study, going abroad, etc.)? Where do you get this information from?

II. About the medical English course

7. What English language skills should the ME course focus on?
8. How do you think of the current medical English course in terms of teaching methods, materials, and schedule?
9. What do you expect to learn from the course?

Appendix 3E: Doctors' Workplace Activity Sheet

Activity Sheet

Date: _____

Activity	1.	2.	3.	4.	5.
Time					
Venue					
Participants					
Purposes					
Language used					
Tools					
Other comments					

Appendix 3F: Retrospective Interview Prompts:

1. Please introduce yourself briefly (educational and professional background, including title, position or specialty).
2. Please describe the workplace activities that you have had on that specific day.
3. Is this workday a typical day for you? Please specify if there are other activities that you may also have on the other days.
4. Are there any activities in the workplace that are relevant to English learning or using? Please explain how English is used in these activities.
5. Do you think some of your routine jobs are influenced by your proficiency of English?
6. Are there any activities after work that are relevant to English learning or using?

Appendix 4A: Open Questions to Elicit Data of Students' Views of ME Learning

1. Why are you learning English?
2. Why are you learning medicine?
3. Why do you think you need to learn English as a medical student?
4. Are there any differences between the way you learn general English and medical English?
5. Are there any changes in your feelings towards medical English course ever since you took it at the beginning?

Appendix 4B: Post-Unit Questionnaire

The teacher applied a new pedagogy in the medical English classes in the last five weeks (including the unit of the circulatory system, the nervous system, and translation and writing). The purpose of using such pedagogy is to help you better understand the use of English in medical study and career development. Please evaluate the classroom activities by checking or answer openly. The data from this survey will only be used for research purposes rather than the official evaluation of the teacher or the course. Your honest responses will be of great help to improve the instruction. You don't have to sign your name. Thank you for your cooperation!

	Strongly Agree 5	4	3	2	Strongly Disagree 1
	←—————→				
1. The lesson is useful in helping me understand circulatory system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The lesson is useful in helping me master the English medical terminologies of circulatory system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The lesson is useful in helping me understand nervous system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The lesson is useful in helping me master the English medical terminologies of nervous system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The instruction is useful in helping me understand <u>the role of English</u> in medical contexts (study or workplace situations).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The instruction is useful in helping me <u>use</u> English in medical contexts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The instruction and exercises on <u>definition making</u> are useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. The instruction and exercises on <u>classification</u> are useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The oral practice on <u>doctor-patient interaction</u> is useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. The oral practice on <u>doctor-doctor interaction</u> is useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. The lesson about <u>translation skills</u> is useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The exercises on <u>case history writing</u> are useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. The exercises on <u>abstract writing</u> are useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. The exercises on <u>abstract translation</u> are useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. The exercises on <u>email writing</u> are useful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. The teacher applied the pedagogy of "presenting sample → analyzing sample → producing new products". This pedagogy is effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. The pedagogy is interesting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. What have you learned most from this period of learning?

19. What do you like most of this period of learning?

20. What do you like least of this period of learning?

21. Please make any further comments on the strengths /weaknesses of this period of learning..

Appendix 4C: Classroom Observation Protocol (for 1st Unit in the case study)

Date: _____

I. My observations and comments on students' responses to different classroom activities.

	Classroom Activity	My observations and comments
Students' responses to different classroom activities	Instruction on the knowledge and terminologies of the circulatory system	
	Exercises on terminologies	
	Genre analysis of definition making	
	Oral exercises on definition making	
	Listening comprehension	
	writing a definition of CABG	
	Role-playing – the patient-doctor interaction	

II. Is there anything about the instruction that deserves further discussion with the ME teacher?

Appendix 4D: Post-unit Interview Prompts

I. A review of activities in this unit

- A. How do you think of the classroom activities in this unit? What do you like or dislike about them?
- B. What differences can you identify from today's activities as compared with those in the previous classes?
- C. What are the purposes of designing these activities according to your understanding?

II. A review of learning in this unit

4. What do you think you have learned from today's class?
5. Is there anything you have learned in this class that helps you know more about how English will be used in future study or career development?

III. Understanding genre

6. How do you understand the concept of genre as explained by the teacher? (In the second and third round of interviews, this question was changed to: Do you have any new ideas about the concept of genre?)
7. Do you consciously apply the genre knowledge in the subsequent exercises?
8. How do you like the new teaching method of "presenting samples – analyzing samples – producing new products"?

IV. Understanding the English learning needs (This groups of questions are raised in the last interview)

9. Before this period of instruction in the ME class, why did you think you need to learn English?
10. Why did you think you need to learn English now? Are there any changes in your understanding of English learning needs after the instruction? If yes, why do you think the changes happened?

Appendix 4E: Post-unit Reflective Log

1. What are your observations and comments on the students' responses to the genre-based instruction in the class

	Classroom Activity	My observations and comments
Students' responses to different classroom activities	Instruction on the knowledge and terminologies of the circulatory system	
	Exercises on terminologies	
	Genre analysis of definition making	
	Oral exercises on definition making	
	Listening comprehension	
	writing a definition of CABG	
	Role-playing – the patient-doctor interaction	

2. How do you evaluate the time distribution, sequence and difficult levels of the activities?

3. How do you evaluate the outcome of students' learning?

4. What ideas do you have to improve the genre-based instruction in the next unit?

5. What you have learned from this unit?

Appendix 5A: The Pilot Needs Analysis Report

Introduction

The research aims, research questions, research design, research instruments and data analysis of the pilot study for needs analysis have been introduced in Section 3.2.3.1 of the thesis. This report only focuses on the presentation and discussion of the research findings in the pilot needs analysis. The insights gained from this pilot study for the main study is finally summarized.

1. Presentation of Research Findings

The findings of each method of data collection are presented separately in this section, i.e. documentary analysis, classroom observations, questionnaire survey, focus group discussions, interviews with the teachers and the doctor. Where appropriate, cross references are made.

1.1 Findings from the Documentary Analysis

Findings from the documentary analysis can be categorized as those about the college's language policies, those about the current Medical English course, and those about the English proficiency the students are required of. Because these findings were used in the main study later, they are not repeated here. For detailed presentation of documentary analysis, please see Section 4.1 of the thesis.

1.2 Findings from the Classroom Observations

The common instruction activities that took place in the Medical English class were

summarized in Table 5A1. The activity types used here to describe the classroom activities followed Richards & Lockhart's categories (2000). This method of classification was later adopted in the main study. Section 4.3.1 has elaborated these activity types.

Table 5A1: Common Activities in the Medical English Classes

Activity type	Activities	Language skills involved	Time spent on the activity (minute)	percentage in total class time
presentation activities	Teacher: Instruction/lecture	reading & listening	494	55%
practice/application activities	Student: Oral presentation; Group discussion; Role playing	listening & speaking	271	30%
comprehension activities	Student: Listening to tapes; Watching video/drama	listening	93	10%
Assessment activities	Reviewing previous lectures; Doing in-class exercises	listening & speaking	32	4%
Feedback activities	Teacher: Giving comments on oral presentations	listening	7	1%
Total			897	100%

The most common classroom activity was teacher presentation through Power Point (PPT), which had the focus on explanation of human body systems and medical terms and takes up 55% of the total class time. In this activity, reading comprehension of the PPT and listening comprehension of the teacher's explanation were practiced. The second common activity was students' group discussion, oral presentation, or role playing. Speaking skill was the focus of this activity. Then, comprehension activities, such as video watching and tape listening, made up 10% of the total class time. Assessment activities that took the form of questions and answers in the reviews of previous lectures or inside-class exercise were relatively rare, only found in two teachers' classes. Feedback activity was only found in one teacher's class when she

commented on the student's oral presentation and gave advice to improve slices writing.

Of all the language skills, listening was the most frequently practiced one. Students listened to the teachers' lecturing on terms and human structures, listened to other peers answering questions or making oral presentation, or listened to tapes or lines in videos. Reading in the class only happened when PPT was shown to the students. Speaking was a regular activity in the class. Among the seven observed classes, 5 had group discussion or oral presentation. Writing was the least practiced skill in the class, with only two teachers spent time on academic writing.

According to my observation, the students' responses in these activities varied. They appeared to be most motivated and concentrated when there was tape listening or video watching. Most students were moderately interested in their peer's presentations. During teacher presentation, students usually gave short responses such as "yeh" and "no" to the teacher's inquires about their understanding. They showed strong interest in pronunciation and always repeat some terms after the teacher. But student involvement in these activities was usually much less. In group discussions (the group size ranged from three persons to six persons), the students were relatively more involved, but the involvement was not for all students and did not last long. For example, in one class, the students were asked to explain the digestive system in groups. About half of the students were active speakers at the beginning. The other half read the textbooks or looked up words in dictionary. Fifteen minutes later, most of the students stop talking. And it was also noticed that the students did not speak English all the time. They tended to speak more and more Chinese as the discussion went on.

1.3 Findings from the Questionnaire Survey

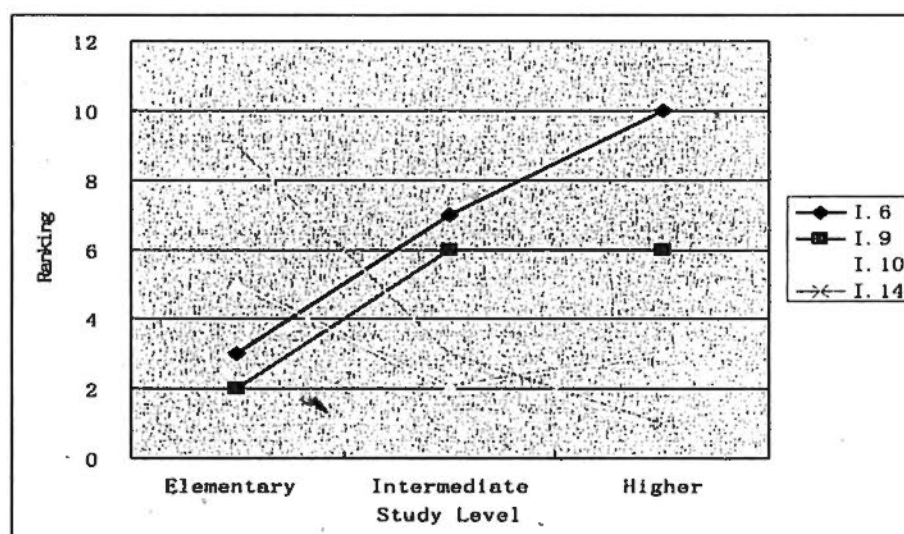
31 students from six different grades and five teachers took part in the questionnaire survey. The students were divided into three levels: elementary level (the first year and second year students, No=9), intermediate level (the third and fourth year students, No=11), and higher level (the fifth and sixth year students, No=11). Means of all items were calculated among different levels. In the teacher group, means were also computerized.

1.3.1 Purposes and Reasons of learning English

Items related to the purpose and reasons of learning English are Item 6 to Item 20 in Section II of the questionnaire (see Appendix 1A). Some tendencies can be found in terms of the purposes and reasons of learning English as perceived by different levels of students (see Figure 5A1). First, that English is learnt to get better marks at school (Item 6) ranks 3rd in the elementary level, 7th in the intermediate level, and 10th in the higher level. In contrast, the realization of the importance of English proficiency in future career (Item 10) increases, ranking 5th in the elementary level and 2nd and 3rd in the intermediate and higher levels. The ranking of Item 9 (“I learn English so that I can communicate with foreigners.”) decreases from 2nd in the elementary level to 6th in the intermediate and higher levels, while the ranking of Item 14 (“I learn English so that I can understand books in English.”) increases from 9th in the elementary level, to 3rd in the intermediate level, to 1st in the higher level.

These tendencies indicate that as the study level advances, the students’ view of English

learning and use become more pragmatic and practical. When entering university, English is considered mainly as a subject to study and speaking English with foreigners is a somewhat “romantic” expectation of English use in their future life. But upon graduation, they realize that in the Chinese context, a more realistic use of English is in reading academic books, journals or materials in the Internet and that high English proficiency will open the gateway to prosperous job opportunities. Thus it is possible (due to the limited numbers of students participating in the survey, these results need to be checked against the main study) that the perception of English learning of the elementary level students reflect more of the institutional desires, and that of the higher level student reflect more of their own desires. This is confirmed by the data from the focus group discussions with the students. Several first- and second-year students expressed their feeling of “being forced” to learn English because of the college’s requirement. And almost all fifth- and sixth-year students told me that they were eager to learn English for future development.



- * I.6= I learn English so that I get better marks at school.
- I.9= I learn English so that I can communicate with foreigners.
- I.10= I learn English so that I can get a better job after graduation.
- I.14= I learn English so that I can understand books in English.

Figure 5A1: The English learning needs perceived by different levels of students

To identify possible gap in the perceptions of English learning needs between the students and the teachers, the means of all items in Section II were calculated among all the students (total=31), then compared with the means of the same items in the teacher group (total=5). Among the top five purposes or reasons of learning English listed respectively by the teachers and the students, only Item 14 (“understand books in English”) is shared, which means that the teachers and the students have very different ideas of why the students want to learn English.

It is interesting to find that while the teachers rank Item 7 (“The students learn English so that they can pass an examination in English.”) as the most important purpose of learning English, the students rank it 8th. While the teacher think “the students learn English because English is a compulsory course in the university” (Item 17) is the 4th important reason, the students rank it 9th. This implies that the teachers’ beliefs of the students’ perceptions of English learning is not close to reality. One possible reason is that the teachers tell from the students’ responses and attitudes inside the class that the students are “forced” to learn English as a subject, as interviews with some of the teachers shows.

1.3.2 The Importance of English Learning in Medical Study

Both the teachers and the students think English learning are very important in medical studies (means = 4.25 in teacher group and means = 4.25 in student group) and future careers (means = 4.25 in teacher group and means = 4.38 in student group). The ranking of the importance of various English skills are shown in Table 5A2. It shows clearly that the elementary level students (1st and 2nd year) and the teachers totally agree with each

other as for the ranking of all the skills, reading being the most important one, vocabulary and listening come second, speaking comes third, translation fourth, writing fifth, and grammar the last. But the teachers group only agrees with the all student group in terms of reading (the most important) and grammar (the least important). The biggest difference lies in writing and vocabulary. The teachers believe vocabulary is the second important, but average students think writing is the secondary important. Possible reasons are that the first- and second-year students are taking the medical English course and their perceptions are deeply influenced by the teachers' way of instruction and focus in the class, and that with more than two-thirds of them in higher level of study, average students are able to see more clearly which skills are more important in their study and career development. Interviews with the teachers indicate that they think vocabulary, listening and speaking are more important skills for the elementary level students because they have to build up these skills for later medical studies. As for academic writing, it is too early to consider.

Table 5A2: Means and ranking of each skill by students and teachers

Language Skills	All students (N=31)		1 st & 2 nd -year students (N=11)		Teachers (N=5)	
	Means	Ranking	Means	Ranking	Means	Ranking
Listening	3.96	5	3.98	3	4.50	2
Speaking	4.17	3	3.98	3	4.25	4
Reading	4.57	1	4.27	1	5.00	1
Writing	4.19	2	3.42	6	3.75	6
Translation	3.77	6	3.48	5	4.25	5
Grammar	2.79	7	2.33	7	2.00	7
Vocabulary	4.16	4	4.02	2	4.50	2

1.3.3 The preferred ways of learning English

Items in Section VI are about the students' preferred ways of learning English. Among

them, Item 35-38 asks about individual/group learning, Item 39-50 ask about the preferred teaching styles, Item 46 and Item 51-62 ask about the preferred classroom activities, and Item 63-68 ask about the preferred way of out-of-class learning. The values of both groups in each subsection were then compared.

In terms of *individual/group learning*, both groups think the students do not like individual learning. But the students like pair-work better, while the teachers think they prefer group work. These explain why more group discussions are arranged than pair work in the classes being observed.

When asked about the preferred teaching styles, both agree that the students like to the teacher to correct their mistakes, and that they learn better with Chinese teachers than with foreign teachers. But the teachers wrongly assume that the students like the teacher to control the class strictly.

As for *the preferred classroom activities*, both groups agree that the students like listening activities, especially listening to radio, tape, or watch video. The students are more interested in oral practice and like to do oral presentations. They also like to practice pronunciation, which is confirmed by the classroom observation that the students always repeat medical terms with the teacher in the class. The teachers think highly of doing games or role playing, while the students only show moderate interest in these activities.

As for the preferred way of out-of-class learning, both groups think the students like to learn through TV or films. But it seems that the teachers do not think the students also

like to learn through reading journals, books, or newspaper, while the students actually do.

1.4 Findings from the Focus Group Discussions

Discussions with different groups of students reveal the following findings:

- a. The learning of English appears to be externally motivated (as required by the college to pass exams) among the students of elementary level to locally motivated (as desired by the students themselves to pursuit career development) among students of higher level.
- b. With the transition of motivation from external to internal, the style of learning English also change. The 1st and 2nd year students usually learn by memorizing vocabulary, while higher level students like to read books, journals or magazines, or watch video/films. In general, most students do not spend a lot of time learning English out of class. Additionally, students of lower level appear to lack of training in independent learning strategies, which prevent them from smooth transition from the “spoon-fed” learning in the high school to autonomous learning in university. This is confirmed by both data from focus group discussions and interviews with the teachers.
- c. There is common resistance to English learning among students, especially among the 1st and 2nd year students. The majority of the interviewed students in Grade 2006 and 2007 complain being “forced” or “pushed” to learn English. “If I can make the decision myself, I would rather not learn (English). (A male student in Grade 2006, April, 2008)” Students in higher grade dislike using English as medium of instruction in the medical subject courses. “Whenever the teacher speaks English, many will sigh and say ‘Chinese please’ ... But actually we can understand the lecture in English, (A female student in Grade 2004, April, 2008).”
- d. Among the participants in focus group discussion, most students who are currently taking the Medical English course claimed that they don’t think the course useful or helpful. Their reasons are that there were too many terminologies to memorize and

the medical knowledge is too difficult to understand because they have not taken the relevant courses in Chinese yet. But most students at higher level of study think the course may be useful to them if they have the chance to take it.⁵⁴ Students in both levels agree that the course can be very useful if it is scheduled for the 3rd or 4th year students.

- e. The college did not have enough communication with the students in terms of the objectives and content of the Medical English course. Neither are there enough sources for the students to know about the possible use of English in their studies and future career. Their message of English use mainly comes from students at higher grades. Incidental events like coming across a foreigner in the supermarket or a foreign patient during the internship may highly convince the students of the importance of English.
- f. English learning and use for the 7-year medical students can be summarized as follows:
 - 9) The first year students take General English as a compulsory course and pass CET 4:
 - 10) The second year students take Scientific English (for students in Grade 2003, 2004, 2005) or Medical English (For students in Grade 2006 and 2007) and pass CET 6.
 - 11) The third year and fourth year students take medical subjects, with the majority of the classes instructed through English PPT and Chinese explanation and very few (e.g. Medical Physics) totally in English. Course examinations always have about 10 additional credits for English multiple choices. These additional credits are valid for application of scholarship.
 - 12) The use of English During internship is only confined in a few occasions: read the manuals of imported medical instruments, use English abbreviations when prescribing, communicating with foreign patients (only one or twice during the one to two year internship), and discuss diagnoses and treatments with the clinical teachers which only happens when the teacher is good at English.
 - 13) The students begin postgraduate study from the fifth year. They are required by their supervisors to retrieve materials from foreign databases, read English journals, write literature reviews or abstracts, or, occasionally, translate materials either from English to Chinese or from Chinese to English. Upon graduation, they are required to present a short academic report in English and attend at least 40 seminars or lectures, either in Chinese or English.

⁵⁴ The Medical English course only began in March, 2008 with Grade 2006 and 2007.

1.5 Findings from post-interviews with teachers

Interviews with two Chinese teachers, both of whom are graduates from the Medical College, reveal a similar developmental view of English learning needs: In secondary school and in their earlier stage of tertiary study, they are somewhat required to learn English as a subject. In other words, they did not have their own desires to learn English then. As they pursued study for higher degrees (one in the Medical College and the other in Britain), they realize the importance of learning English and began to seek for opportunities of learning English (e.g. watching English films or talking with foreign friends through MSN). Nowadays English learning and use has become one part of their live, either in job or daily life.

Both interviewees have no previous experience of teaching language course and both prepare and teach Medical English based on their previous learning experiences and their understanding of the students' needs. For example, Huang used to find great help from a book about English word-building, so he stresses the formation of medical terms time and time again during his lectures. Xie was overwhelmed by the medical terms when she studied abroad, thus she believes that teaching vocabulary to the medical students is extremely important. The academic writing training she got in Britain led to her usage of IELTS writing materials in the class. Both teachers think English reading skill, vocabulary, and communicating skills such as speaking and listening are important for medical students. Because of their similar learning experiences with the students, both teachers are sympathetic towards the students' current situation of English learning and are concerned with how to make the course interesting and close to the students'

daily life. For instance, as I observed Huang's class, I noticed that he used video to explain the structures of skin, included a joke in his lecture, and asked students to make up a conversation on acne. In Xie's class, student watched the American series "Grey's Anatomy" because she believe the daily life of the medical interns appeals to her students and that humanism displayed by the doctors in the series is what the students should learn beside the medical knowledge.

While acknowledging the importance of learning English for medical professionals, both teachers expressed modest expectations from the Medical English course, contrast to the high expectations indicated from the syllabus. One even hinted that the implementation of the course and the policy of using English as medium of instruction in subject courses are mainly for the promotion of the college's international reputation so as to enroll foreign students (10% of the total enrollment is set up for a 5-year plan), which is a tendency in some medical colleges or universities in China.

The third interview was with a foreign teacher form Philippines. He is of Chinese origin but can only speak a little Chinese. He grew up in the bilingual environment of Filipino and English. His needs of learning English develop from the basic needs of social communication and education to professional needs of pursuing medical study. He has both experiences in teaching medical subjects and English in his own country. Because of having learnt English in a more or less English-speaking environment, he views learning English as a natural acquisition process, which develops from listening and speaking skills first, then comes to reading and writing skills. His organization of classroom activities follows the cycles of language input (e.g. teacher presentation),

language output (e.g. student oral presentation), and exercises. But he also ranks vocabulary as the No.1 important thing for the medical students, followed by listening and speaking, then by reading and writing.

The foreign teacher realizes that the students are lack of training on independent learning strategies, one thing that was not mentioned by the Chinese teachers but talked about by some of the interviewed students. This points to another aspect of students' learning needs, i.e. effective ways of learning the skills and language (Dudley-Evans & St. John, 1998), that has long been ignored in research.

1.6 Findings from the Retrospective Interview

The retrospective interview was arranged in place of the original planned workplace observations due to considerations of the difficulties to apply for observations in wards and operation rooms from the authority of the hospital and of the limited time that can be devoted to the observations. First of all, invitation to the interview was sent to a pediatrician working in the first affiliated hospital of the Medical College and the purposes of the research were made clear to her. Upon her acceptance, an activity sheet was sent to her for recording of her workplace activity as soon as she could on one day shift and one night shift (usually the night shift follows the day shift). On the third day, the retrospective interview was arranged (see activity sheet and the interview prompts in the appendices).

The interview helps to provide a sketch of a doctor's routine job as follows:

- a. **Handing-over**: both at the beginning and the end of a day's work, usually

happens at 8:00am and 6:00pm, the doctors hand over the cases to the one(s) in the next shift. The handing-over normally takes about half an hour and is done in Putonghua.

- b. ***Morning-round and night-round***: an important part of the job in the morning or in the evening for all resident doctors and interns in shift, during which they examine inpatients and discuss the latest development and treatment of the diseases. Most of the time, the language used is Putonghua. Occasionally, clinical teacher (in this case, the interview herself) may ask interns, especially those in postgraduate study, to discuss in English. But this depends on the teacher's proficiency of English.
- c. ***Examining and treating outpatients***: patients from the outpatient department may come to be diagnosed. The number of outpatients varies from day to day.
- d. ***Writing advice***: the doctor writes advice for the patients she is in charge of. The advice is in Putonghua, and in very few cases, English abbreviations are used, depending on the understanding of the nurses.
- e. ***Communicating with patients and their family***: the doctor explains the patients' conditions to the patients and their family, or give suggestions to the patients who are about to be discharged. The language used is Putonghua or Swatowese, the dialect in Swatow areas).
- f. ***Examining records of disease course***: the doctor take quiet some time to examine the records of diseases course made by her intern students, giving advice for revisions and trimming all the records. English is occasionally used, especially some English abbreviation for diseases and treatments.
- g. ***Group consultation***: doctors from other departments, such as the Contagious Department, may invite the doctor to diagnose patients. The language used is also Putonghua or Swatowese. The time spent on group consultation also varies from day to day. In some days, there is no group consultation at all.

Workplace activities that are relevant to English use are as follows:

- a. English abbreviations or terms may be used in writing advice or medical

records.

- b. Some discussions in English on diagnosis and treatments may happen between the clinical teacher and the interns.

Additionally, because the pediatrician is also teaching the Medical English course, during her night shift she spent some time on preparing class PPT and materials in English. She also mentioned an occasion in which she did the morning-round in English, when medical experts from the Oxford University came to visit the hospital. But this only happens far and between.

In her spare-time, the doctor spends some time on English literature reading and is planning to finish some article in English because she has just been enrolled by the College for doctoral study. To be awarded the doctoral degree, she will have to publish a SCI article with impact factor higher than 2. She also enjoys listening English songs as relaxation.

It seems that few activities are relevant to English use at the workplace. Whether English use is important in a doctor's spare-time depends on his/her orientation of career development. To get promoted, doctors have to pass a national English examination. But besides this, most of them may be satisfied with the publishing of Chinese articles and do not have to continue learning English. The interviewed pediatrician has been worked in a Canadian hospital as a visiting scholar for more than 6 months and is at the beginning of pursuing a doctoral study. English learning and use will surely play a very important role in her future career. Thus, it will be important to interview more doctors in different departments and in different professional levels,

ranging from interns, resident doctors, to department directors, so as to make up a complete picture of the activities that a medical practitioner does and identify the role of English use in their profession. To this end, more interviews will be done in the main study.

2 Discussions

The findings of the pilot study are discussed according to the research questions posed for the pilot study:

- a. What are the needs of learning English as perceived by different participants involved in the instruction of Medical English?
- b. What are the possible conflicts of these needs and how do the conflicts happen?
- c. How can the conflicts be solved through a critical needs analysis?

2.1 The Medical Students' English Learning Needs as Perceived by Different Parties

The advantages of conducting an activity-based needs analysis over the task-based needs analysis have been discussed in Section 2.3.3 of the thesis. The English learning needs of the medical students in the Medical College of a university in Southeast China can be summarized by the activities they have to perform as students and professionals.

- **Course/exam-taking activities:** The students are required to take general English course, medical English or scientific English and pass the course exams. They also have to pass CET 4 and 6 so as to graduate.
- **Subject-learning activities:** The students read English PPT in almost all subject courses, listen to English explanations in a few subject courses and answer a few

optional items of English multiple choices in course exams.

- **Academic activities:** The students, suggested by their supervisors, search English database, read medical journals published in English, and write reviews, abstracts, and sometimes articles, in English. They may attend English seminars, which are held time and time again at the College. They are also stipulated to present an English academic report before graduation.
- **Workplace activities:** Normally, the students use some English abbreviations and terms in prescriptions and medical records. In only a few occasions, they may have to read manuals of medical instruments, discuss diseases and treatments in English with their clinical teachers, or communicate with foreign patients.
- **Professional activities:** After graduation, if the students stay in municipal hospitals or want to pursuit doctoral degree, they will have to write academic articles to be published abroad.
- **Daily-life activities:** Most of the students only spend a little time after class learning English. If they do, they may read newspaper (e.g. the China Daily) or books, surf on the Internet, watch English videos, or listen to English songs. For those who have been in the medical profession for a longer time (e.g. Huang and Xie, the two Chinese teachers I interviewed), English-relevant activities have been part of their life which they really enjoy.

The students at different study levels perceive their English learning needs differently. For the elementary students, English learning is viewed as an *examinational tool* to pass exams and get credits in the course/exam-taking activities and subject learning activities they have to be involved. Most of them are extrinsically motivated to learn English, i.e. they learn English more because of the external requirements place on them by the college. When the students proceed in subject learning and become more involved into the workplace activities and professional activities, they become more intrinsically motivated as they gradually realize that English is an important *linguistic tool* to obtain

good employments and professional development. For some students at higher level and for the ME teachers, to a certain extent, English become a *cultural tool* in their daily life activities. In these activities, English helps to open a world of new cultures and new ways of communication and leads to a bigger space of communication with the outside world and the enrichment of one's life.

From treating English as an examinational tool, to a linguistic tool, and then to a cultural tool, the students' perceptions of English learning needs follow a developmental track. If put into the activity system of English learning, the developmental view of English learning needs can be explained in the *community* of English learning and using, the *rules* and regulational norms that afford and constraint the learning activities in this system, and the *division of labor* that prescribes the horizontal divided tasks and the vertical division of power and status. The framework of Activity Theory serves to contextualize and analyze the perceptions of English learning needs.

2.2 The Conflicts of English Learning Needs as Displayed by the Contradiction in the ME Activity Systems

While the students at the elementary level identify their needs to learn English as required by the college to pass examinations, their teachers identify the needs to learn English for career development, like students at higher level do. Students at different learning levels also hold different opinions on what language skills are important to learn. And the teachers and the students do not agree on the students' preferred way of learning English inside and outside the class. All these findings reveal the conflicts of English learning needs among different parties, which can be traced back to the inner

contradictions in between different activity systems of the Medical English innovation. According to Engeström (2001), one of the principles of the activity theory is the central role of contradictions as sources of change and development. There are all together four levels of contradictions within the human activity system (Engeström, 1987):

- Level 1:** Primary inner contradictions *within* each constituent component of the central activity.
- Level 2:** Secondary contradictions *between* the constituents of the central activity.
- Level 3:** Tertiary contradictions *between* the object/motive of the dominant form of the central activity and the object/motive of a culturally more advanced form of the central activity.
- Level 4:** Quaternary contradictions *between* the central activity and its neighbour activities.

Based on the pilot study data collected from various methods, the contradictions in and between different activity systems of the Medical English innovation can be presented as follows:

Primary contradictions: *course credits* (tool) used by the institution both as evaluation of the students' learning and as an instrument to control the students' learning by making the course compulsory; choosing of *medical subject teachers* in the instruction of Medical English means they are lack of language teaching training and poor in language teaching pedagogies (subject); the *timing of Medical English course* in the first year of study for preparation of EMI (English as medium of instruction) subject course in later years conflicts with the fact that the students are lack of necessary medical subject knowledge to understand the course in English (rule); the subject teachers' daily *teaching responsibilities* of medical subjects in conflict with the large amount of time devoted to Medical English in terms of class preparation (division of labour); the *institutional control of the course* (e.g. prescription of syllabus and scheduling of timetable) allow little or even no involvement of the students and subject teachers in the designing of the

course (division of labour);

Secondary contradictions: allowing the students plentiful of spare-time to arrange their own study (rule) vs. the students' lack of learning strategies training (tool); the institutional expectation of carrying out EMI subject courses (object) vs. the students' resistance to EMI subject courses (tool); the institutional high expectation from the Medical English course (object) vs. the low English proficiency of the subject teachers (most are lack of language teaching training and some are even poor in pronunciation and oral skills) (tool); the collective activity of the curriculum innovation (object) vs. compartmentalization based on different disciplines (e.g. English, medicine, & educational policy and administration) & positions (e.g. teachers, students, administrators, medical practitioners) (division of labour);

Tertiary contradictions: The object of the dominant Medical English curriculum innovation is to prepare the medical students for EMI in subject course and to raise the college's international reputation so as to enroll foreign students. This comes in conflict with the object of a culturally more advanced form of the curriculum innovation activity: to raise the students' awareness of English learning needs in their medical study and professional development and to development the necessary language skills to satisfy these needs.

Quaternary contradictions: Under the central activity system of the Medical English curriculum innovation, there are neighbouring activity systems of the students, the teachers, and the medical professionals. The following contradictions can be found: the students object of learning English to pass examinations vs. the institutional object of improving their English proficiency; the English learning needs as perceived by the students vs. the English learning needs perceived by the teacher or institution and the actual English use in workplace activities; the preferred English learning styles of the students vs. the teachers' understanding of their preferred English learning styles; the medical professionals' few use of English in workplace

activities vs. the requirements from the institution to pass English exam and publish English articles to get promoted.

The contradictions discussed here reveal the dynamics of possible change and development of the ME curriculum innovation system. The next subsection will discuss how the conflicts can be resolved through critical needs analysis.

2.3 Critical Needs Analysis with a New Mediating Tool

Instead of treating needs analysis as a neutral and objective process, *critical needs analysis* acknowledges existing forms, including power relations, while searching for possible areas of change (Benesch, 1996). In other words, the target situation is no longer a natural existence for analysts to describe and prescribe what learners must do to perform well in that situation; it is a site of possible reform towards greater equality for learners. Critical needs analysis can be conceptualized as the process of expansive learning (Engestrom, 1987) beginning with the questioning and analyzing of the learning needs of the current learning activity system, followed by the formulation and implementation of a new mediational tool (a new concept, model, or methodology), and concluding with reconceptualized and transformed learning needs in a culturally more advanced activity system.

Based on the discussions in the previous subsection, I would like to suggest using genre-based pedagogy (GBP) as a tool to initiate expansive learning so as to solve some existing contradictions that hinder the success of curriculum innovation. The reasons for choosing GBP as a new instrumental model in Medical English curriculum innovation are as follows:

- a. Great importance has been addressed on the analysis and teaching of genres in ESP courses (Dudley-Evans, 2001; Hammond & Derewianka, 2001).
- b. The introduction of GBP as a pedagogical tool into the current Medical English course is necessary due to the fact that most of the medical subject teachers are lack of training in language training.
- c. GBP share its theoretical origins with Activity Theory in sociocultural theories and is an important complement to critical pedagogy because it provides overt instruction as well as critical analysis of the target genres.
- d. GBP can contribute to expansive learning through zone of proximal development: GBP provides scaffolding for development from the current activity system to a culturally more advance activity system. It helps to renegotiate and reorganize different viewpoints and approaches of the various participants (students, teachers, administrators, etc.) and to achieve collaborative relations and practices between and within the activity systems involved.
- e. GBP can become a new constituent of tool and initiate changes in other aspect of the components of the curriculum innovation activity systems. It is assumed to resolve some of the contradictions in the activity systems mentioned above:
 - 1) GBP provides language teaching methodology to the subject teachers and can solve the dilemma of choosing subject teachers to teach Medical English: being expert at subject knowledge and being lack of train in language teaching;
 - 2) GBP helps to achieve the prescribed curriculum objectives of improving medical students' comprehensive language through overt pedagogical strategies, thus solving the conflict between the institutional expectations and the actual outcome of the course.
 - 3) GBP offers specific learning strategies to the students and can be used as a way of learning training for the first- and second- year students.
 - 4) GBP introduces the English use in target situations in the students' future career, thus raising their awareness of the academic needs of English;
 - 5) The introduction of GBP can involve the subject teachers in collaborative

activities, changing the current situation of lack of communication among the teachers.

3 Insights Gained from the Pilot Study

This section focuses on the insights gained from the pilot study in terms of how the results of the pilot study can be used to benefit the main study.

3.1 Revising the Research Design

The previous research design was to conduct a comprehensive needs analysis in the context of medical college. The conflicts in the understanding of English learning needs among different parties reveal possible innovation through the resolution of the inner contradictions of the medical English activity system. Critical needs analysis can be reconceptualized as a three-staged research: investigation, criticism and transformation. A five-stepped cycle of expansive developmental research model used by Engestrom (1987) can be utilized to revise the research design:

- Step 1:** gaining a preliminary phenomenological insight into the nature of the activities and delineating the activity systems under investigation;
- Step 2:** conducting rigorous analyses of the activity systems;
- Step 3:** formulating qualitatively new models as genuine keys for resolving the contradictions;
- Step 4:** implementing the new instruments in selected strategic tasks which represent the points of probable breakthroughs into the qualitatively more advanced form of practice;
- Step 5:** reporting and evaluating the outcome of the expansive research by employing a set of multiple methods, ranging from phenomenological and anthropological observation and historical analysis to rigorous cognitive analysis of performances, conceptions and discourse processes.

Based on the research model, the research steps in the main study can be formulated as follows:

- 1) Doing an ethnographical investigation of the medical students' English learning needs in the Chinese context;
- 2) Conducting a activity-based critical analysis of the English learning needs;
- 3) Formulating GBP as a new instrument in the current ESP practice of the context under investigation;
- 4) Applying GBP in classroom practice;
- 5) Evaluating the outcome of the research.

3.2 Formulating Research Questions

Based on the results of the pilot needs analysis and the developmental research model introduced above, three initial research questions are formulated for the main study to conduct a critical needs analysis of medical students' English learning:

- 1) What are the needs of learning English as perceived by the different parties involved in the instruction of Medical English? (To investigate)
- 2) What contradictions, if any, are revealed through critical analysis of the English learning needs? (To criticize)
- 3) In what way can GBP be introduced to solve some of the contradictions in the process of curriculum design and implementation? (To transform)

These research questions are subject to revision after further consideration and literature study. In particular, the third research questions needs to be concretized to become operationalized so that specific research methods can be decided.

3.3 Direction for Further Literature Reading

The suggestion of using GBP as a new mediating tool in ME instruction has drawn theoretical insights from Activity Theory. But more literature reading on genre study and GBP is needed so as to find out how it can be transferred into strategic learning activities in the current Medical English class. In particular, most research about GBP is

on writing. It will be challenging to use GBP to teaching the other language skills, such as reading, speaking, listening, and vocabulary in the ME class.

The impact of GBP on the ME class is the focus of study in the critical needs analysis, which need to be identified, categorized, and evaluated in an explanatory framework. Further literature reading and study will have to be done in search for such an explanatory framework to observe and analyze genre-based learning.

3.4 Revising the Data Collecting Methods

The pilot study also helped to revise some data collecting methods to be used in the main study. Originally, interviews with individual students were planned. But as I approached the students when conducting the questionnaire survey, many students said they would like to be interviewed together. It was then decided that focus group discussions with the students from the same grade be conducted instead of interviews with individual students.

The investigation among the medical doctors was originally planned to be workplace observations (to observe a doctor's activities for 8 hours in an affiliated hospital of the Medical College). But after entering the field, it was realized that this data collection method had several limitations. First, conducting observations in the hospital had to be approved by the hospital because a lot of activities in the wards, treating rooms, operation rooms and offices concerned the privacy of the patients. A second concern was that the observation would be very superficial as I was not a medical practitioner and could not understand most of the jobs done in the hospital. Thirdly, because of the

limit of time, observations could not be done in each department of the hospital, and the choice of the observed might not be representative. Finally, the focus group discussions with interns and the informal talks with doctors revealed that there were actually very few opportunities to use English in their daily working activities. But in their spare time they needed to learn/use English for promotional tests, academic reading and writing. Thus, data from the workplace observations may not be able to provide a complete picture of the activities that a medical practitioner does, especially those that are relevant to English.

Because of these limitations, workplace observations were finally replaced by workplace activity recording and retrospective interviews. First, a workplace activity sheet was given to the interviewee to jot down their activities after a typical workday. The sheet was then used as guideline for the retrospective interviews. In the interviews, the doctors were invited to recollect their working activities while their English-relevant activities after work could also be discussed. The advantages of doing retrospective interviews are that they require less time and can be more conveniently arranged, that the interviewees can be chosen from different departments to provide a more comprehensive picture of the doctors' routine jobs. Moreover, clarifications of the activities can be obtained from the actors themselves through the interviews and follow-up questions can be asked immediately. However, some disadvantages were also considered, such as the possible inaccurate reporting of the doctors' activities either due to the concerns of "prettifying" themselves or because some activities have become so routine that the interviewees merely ignore them. To remedy this shortcoming, it was made clear to the interviewees that the purposes of inquiries were not for institutional

evaluation but for research, and that their personal data will be kept secret.

3.5 Testing the Effectiveness of the Data Collecting Instruments

Some data collection instruments, such as classroom observation protocol, interview prompts, focus group discussion prompts and workplace activity sheet, were piloted and proved to be effective in collecting the data needed for the main study. These instruments will be kept for use in the main study.

The English learning questionnaire is a very important instrument to gather data about the students' and teachers' views of English learning. Its reliability was tested after the pilot study. The reliability coefficients⁵⁵ of the questionnaire sections were calculated on SPSS. The coefficient alphas were 0.6835, 0.9603, 0.7817, 0.7338 for section two, three, five and six respectively, implying that section two, five and six have lower reliability and should be subject to revision.

When piloting, a frequently heard complaint from the students was that the questionnaire was lengthy. After consideration, section six was deleted because though students' preferred ways of learning English is considered to be part of needs analysis (Dudley-Evans, 1998), it is not the focus of investigation in the present research. Section five about students' self-evaluation of linguistic proficiency and Item 27 and 28 about the percentage of English used in the ME class are deleted because of the same reason.

⁵⁵ When using Likert-type scales, the internal consistency of the questionnaire is usually checked by calculating the reliability coefficient, which is usually on a scale of 0 to 1 and expresses the extent to which the subjects have been measured consistently by the questionnaire. The closer the coefficient to 1, the higher the reliability of the questionnaire.

Section two is a very important part of the questionnaire because it inquires about the students' motivation to learn English. It therefore deserves careful design. The reliability coefficient is relatively low ($\alpha=0.6835$), so the items in this section were revised. Literature on motivation study in foreign language learning (Dornyei, 1990, 1994 & 2001) was drawn on to rewrite the items. For a detailed introduction of the motivational framework, please see 3.2.4.1. Altogether 22 items were rewritten and included in section 2 (see Appendix 1B). This section of questionnaire was then piloted again among a group of 5-year medical students ($N=30$) and reliability coefficient was 0.7695. After second thought, it was decided that items for each dimension of motivation should be even and 4 items were cut off. The section was piloted again with another group of 5-year medical students ($N=30$). The reliability coefficient was 0.8485, indicating that this section satisfactory reliability

Conclusion

The pilot needs analysis provided important information for the issue of interest in the main study, namely the medical English course. It helped to develop the research design into a five-stepped model. The investigation among the different grades of medical students, the teachers and the doctor depicted a general picture of how English learning needs are perceived in different parties, bringing about insight for the revision of the first two research questions and for the initial formulation of the third research question. It also pointed out further directions of literature reading for the operation of research actions in the main study, such as the design of genre-based lesson plans and teaching materials and the observation and evaluation of genre-based learning. And last but not

least the effectiveness of the data collection instruments which will be used in the main study had been checked. The English learning questionnaire, in particular, had been revised and piloted twice until the final version was decided for the main study. To sum up, the pilot needs analysis is crucial to the emergence of the main study.

Appendix 5B: The Intervention Case Study Report

Introduction:

The research aims, research questions, research design, research instruments and data analysis of the pilot intervention case study have been introduced in Section 3.2.3.2 of the thesis. This report only focuses on the presentation and discussion of the research findings in the pilot intervention case study. The insights gained from this pilot study for the main study is finally summarized.

1. Presentation of Research Findings

The findings of the pilot intervention case study are presented separately below according to different ways of data collecting, i.e. post-unit questionnaire, students' oral products, focus discussions, and research diaries. When necessary, various sources of data may be cross-referred and triangulated.

5.1 Findings from the Post-Unit Questionnaire

The means of the Likert-scale statements of the questionnaire were calculated and presented in Table 5B1. All statements except 1 and 4 have a mean bigger than 4, indicating that the students generally agree or strongly agree with the statements. Paired T-test conducted in between Item 5a, 5b, 5c, and 5d indicated no statistically significant difference between the students' perceived helpfulness of the four major classroom activities. There is also no statistically significant difference between the students' perceived effectiveness of both teachers' instruction (Item 6a and 6b).

Table 5B1: Students' Responses to Likert-Scale Statement of Post-unit Questionnaire

Statement	Mean
1. The unit is useful in helping me to understand the urinary system.	3.93
2. The unit is useful in helping me to understand the role of English in medical contexts (study or workplace situations).	4.04
3. The unit is useful in helping me to use English in medical contexts.	4.15
4. The sample texts offered in this unit are useful.	3.65
5. The activities in this unit are helpful in my study.	
a. Teacher's introduction of knowledge on urinary system by Miss Fang.	4.26
b. Teacher's introduction of knowledge on language use in different situations by Miss Yang.	4.30
c. Students' practice of describing the structures and functions of urinary system.	4.07
d. Students' practice of oral interactions in different situations.	4.17
6. The teacher's instruction is effective.	
a. Miss Fang's instruction.	4.35
b. Miss Yang's instruction.	4.28
7. The teaching approach used in this unit is effective.	4.07
8. The teaching approach used in this unit is interesting.	4.15

The students' responses to the open-ended questions are categorized in Table 5B2 to Table 5B7 below. As can be told from the differences in frequency in these tables, Item 9 (what you have learnt most from this unit?) and Item 10 (what do you like most of this unit?) have attracted more of the students' attention, while some items are simply left blank in some questionnaires. Many students regarded the knowledge of English language use as the biggest learning from the unit (32 students). Some of these students mentioned the usage of language in different situations in terms of different linguistic characteristic (three students) and different interlocutors (nine students); some of them gave more general statements on language use (13 students) and oral expressions (seven students). The knowledge of urinary system ranked second (20 students) as the biggest learning and English terminologies of the urinary system rank third (12 students). It should be noted there is overlapping in between these three categories. Among the 32

students who thought they had learnt most in terms of knowledge of English language use, eight mentioned the knowledge of the urinary system, and six mentioned English terminologies at the same time. This means that a portion of the students thought they learnt most in terms of both medical knowledge and English language use.

Table 5B2: Students' views of what they have learnt most from the lesson

What you have learnt most from this unit?	Frequency
A. Knowledge of English language use	32
a. How to use language in different situations	13
b. How to have conversations with patients or colleagues	9
c. Oral expressions such as describing the urinary system in English, or applying the medical knowledge in simulated situations	7
d. How to use the language in terms of the choice of words, sentence structures and voices	3
B. Knowledge of the urinary system	20
C. English terminologies of the urinary system	12
D. Improved English language skills	4
a. Listening	1
b. Writing: how to write case history, operative report and discharge summary	3
E. English learning skills	2
a. Categorizing and applying what have been learnt in practice so that it can be better understood and memorized	1
b. I have learnt how to learn.	1
F. Learning attitude: confidence, patience and attention are needed	1

As for what they like most of the unit (see Table 5B3), 22 students mentioned the activities that encourage the use of English such as oral interactions in simulated situations and describing urinary system in English. Activities that introduce medical knowledge ranks second (10 students). It is interesting that although as many as 12 students thought they have learnt most in English terminologies, only one student regarded it as the activity he/she liked best. This is confirmed by data from Table 5B4. Among all the things that the students did not like, terminology ranks first (five students). Three students liked medical knowledge the least either because there is too

much about it or because it is difficult to understand.

Table 5B3: Students' Views of What They Like Most of the Unit

What do you like most of this unit?	Frequency
A. Activities that encourage the use of English	22
a. Oral interactions in simulated medical situations	19
b. Describing urinary system in English	3
B. Activities that introduce medical knowledge	10
C. All the activities	2
D. Both teachers contributed to the class	2
E. Medical terminologies	1
F. The instruction on writing and language use	1

Table 5B4: Students' Views of What They Like Least of the Unit

What do you like least of this unit?	Frequency
A. Terminologies	5
a. Too many terminologies	2
b. Some terminologies are too difficult	1
c. Teaching terminologies is tedious	1
d. The exercise on words matching is boring	1
B. Practice on conversations	3
C. Medical knowledge	3
a. Too much medical knowledge, not enough about the use of language	2
b. Too difficult to express in English because of lack of understanding of the medical knowledge	1
D. The teacher reading from the Power Point slides	1

The students were invited to make further comments on the strengths and weaknesses of the unit of instruction (Item 12). Their responses can be summarized in three aspects: the strengths (Table 5B5), the weaknesses (Table 5B6), and the suggestions (Table 5B7). Six students applauded the cooperation between the medical teacher and the researcher. In particular, they pointed out the novel teaching style and the enlarged teaching content (the combination of general English and medical English). Five students viewed the chances of using English in the class as the strength of the unit. As for the weaknesses of the unit, Four students thought the instruction on medical knowledge was not detailed

enough. Difficulty in understanding is mentioned by two students, and difficulty in memorizing terminologies is mentioned by one students. This can partly explain why the students gave a relatively lower score for the statement “The unit is useful in helping me to understand the urinary system” (see Table 5B1).

Table 5B5: Students’ Views of the Strengths of the Unit

The Strengths of the Unit	Frequency
A. The cooperation between two teachers	6
a. The two teachers cooperated creatively and the teaching styles are novel	3
b. There is a good combination of general English and medical English.	3
B. The use of English	5
a The students have chances to speak.	3
b We can apply what we have learnt from the unit.	3
C The teaching approach is flexible and activities are various in styles.	2
D The activities are interactive.	1
E The PowerPoint is well made.	1

Table 5B6: Students’ Views on the Weaknesses of the Unit

The Weakness of the Unit	Frequency
A. The instruction on medical knowledge not detailed enough	4
B. Some parts of the instruction difficult to understand	1
C. Some words difficult to understand	1
D. Not able to memorize all the words in the class	1
E.. Not enough practice	1
F. The class not interesting enough	1
G. Not enough demonstration through objects or models	1

The students’ suggestions to improve the class fall into several categories (see Table 7), among which “making the instruction more interesting” got the most supporters (seven students). Three students suggested having more time for oral interaction and the other three advised introducing more contextual knowledge.

Table 5B7: Students' Suggestions to Improve the Class

Suggestions to Improve the Class	Frequency
A. Making the Instruction more interesting	7
a. More interesting activities	3
b. More pictures	2
c. Adding some video materials	2
d. Adding some interesting examples	1
B. Allowing more time for oral interactions such as conversations and groups discussions	3
C. Introducing more contextual knowledge that can be integrated with book knowledge	3
D. Giving extra explanations for difficult points	2
E. Introducing more communicative skills rather than medical knowledge when having simulated conversations	1
F. Have more similar class later	1
H. Having more instruction on reading skills	1

To sum up the results of post-unit questionnaire, the students generally think the instruction and activities of the unit helpful in their study and the teachers' instruction effective. The reasons why they did not think the unit is as useful in helping them to understand the urinary system as other aspects (Mean=3.96, see Table 5B1) may be found in their responses in the open-ended questions. A few students found the instruction on urinary system not detailed enough or difficult to understand.

Most students (32 out of 46, i.e. 70%) considered the biggest learning from the unit to be the use of English in the class. 22 of them (48%) claimed that they liked the activities that encourage the use of English best. Students who thought they learnt most in terms of medical knowledge and liked the relevant activities best also account for a significant percentage (43% and 22% respectively). This indicates that instruction that explicitly teaches the usage of English, especially contextualized or situation-specific one, or activities that offer chances for the students to practice the use of English are applauded by the students. There is a role for genre-base pedagogy to play in the medical English

class because genre-based pedagogy advocates explicit instruction on contextualized genres and stepwise activities that guide the construction of genres in social contexts.

The cooperation between the medical English teacher and I as a researcher was commented by the students as creative and helpful and ranks first as the strength of the unit. Several students sensitively identified the combination of general English knowledge with medical knowledge. Here is a student's comment (translated into English by the researcher):

The English writing skills are integrated into medical English, which is helpful to improve our expression of medical knowledge in English.

We have learnt how to analyze a medical text using knowledge of general English. In this way, we have learnt both professional English and general English.

1.2 Findings from the Analysis of Students' Oral Products

The students' oral activities in the class are transcribed and treated as their oral products. This data was analyzed and summarized. Altogether, two oral activities were organized in this unit. In the first one, eight students were invited to explain or describe the structures and functions of the urinary system after I explained the genre of definitions. The activities lasted for 14 minutes. In the second one, first of all, the whole class was divided into two groups, one of which had simulated conversations between doctor and patient and the other had simulated conversations between intern and resident. Both groups of student practiced in pairs for about 14 minutes. Then four pairs of students were invited to form conversations in front of the whole class, occupying totally 12 minutes.

There are two important findings from the analysis of students' oral products. Firstly, when describing the structures or functions of urinary system, only three out of the eight students could use the genre of definitions in expression, as what was taught previously. The other five students expressed either in incomplete sentences or with several short, simple and unlinked sentences.

The second finding from the analysis of the students' oral products is that the students did not integrate the information from the written texts (the sample texts of case history, operative report and discharge summary) into simulated conversations. Although I had required them to do so after explaining the differences between written texts and oral texts and how to transfer written texts into oral texts, there was not enough linkage between my explanation and the students' oral practice. This can help to explain why students gave a relatively low score in evaluating the usefulness of the sample texts (as shown in Table 5B2, Mean = 3.65).

These improvements in genre-based instruction will help increase learning on the part of the students in the formal study and provide more data for analysis of how the concept of genre is formed and developed in the students' process of learning.

1.3 Summaries of the research diaries

The research diaries can be summarized in five categories:

- A. The researcher's own feeling of team-teaching
- B. The researcher's perception of the medical teachers' attitudes
- C. The researchers' reflection on the classroom instruction
- D. The researcher's reflection on the focus group discussions

E. The researcher's summary of the pilot study

Data from these categories were triangulated with other data sources such as questionnaire survey and focus discussions. Details of discussion are integrated in the sub-sections hereafter.

1.4 Findings from the Focus Discussions with the Teacher

In the pre-unit focus discussion with Xiao, three topics were covered:

- A. The current problems or difficulties in the medical English class
- B. The possibilities of solution through the application of genre-based pedagogy
- C. The revision of Xiao's original lesson plan for the unit based on genre-based pedagogy

The post-unit focus discussion was based on a reflection log (see Appendix 2B) and the results of the analysis of the data from the students' post-unit questionnaire. Although the reflection log had been given to Xiao, it was kept blank at the time of discussion. It is difficult to require Xiao to spend a lot of time on reflection because she also had a very tight schedule. But it turned out that Xiao did not take the initiative in discussion and sometimes gave only brief responses to my enquiries.

The discussion focused on both the medical teacher and my observations of the students' responses to different class activities, their opinions on the arrangement of the activities in terms of time distribution, sequence and difficulty levels, their evaluation of students' learning and their own learning, and the effectiveness of team-teaching. Data from the questionnaire was referred to again and again during the discussion.

2 Discussions

Triangulation of all sources of evidence help to answer the research questions posed for the pilot intervention case study. The following discussions are presented in the sequence of these questions and they can be considered as measures or methods to improve the future formal case study.

e. What are the students' responses to the new teaching materials and activities based on genre-based pedagogy?

The students responded to the new teaching materials and activities positively, thinking the majority of the teaching materials and teaching activities useful or helpful to them. They thought both teachers, namely Fang and I, had instructed effectively. The teaching approach was both effective and interesting to them.

f. What possible learning happens to the students as a result of the genre-based instruction?

The most important learning happens to the students as a result of the genre-based instruction is their recognition of the use of language in different medical situations. Totally, 70% of the students claimed that they had learnt most about the use of English language, such as how to use language in different situations, how to have conversations in workplace, and how to use the language in terms of the choice of words, sentence structures and voices. A few students mentioned learning in other areas such as the improvement of some English language skills (e.g. listening and writing) and the improvement of language learning skills (e.g. categorizing and applying what have been

learnt in practice so that it can be better understood and memorized).

g. What possible learning happens to both the medical English teacher and the researcher as a result of the team-teaching?

What the medical teacher has learnt from the unit of team-teaching, as she claims, is the importance of explicitly teaching the use of English in different situations. But because the team-teaching lasted for only one week, it is difficult to find deeper learning on the part of the medical teacher. The expansive learning that is discussed in literature can not yet be found. Therefore, it is crucial that team-teaching in the case study last longer and I can have more in-depth discussions with the teacher in terms of her understanding of the teaching approach.

I have learnt a lot in medical knowledge and terminologies. At the same time, it is realized that knowing the medical knowledge and terminologies is not adequate to arouse the students' interest in the medical English class. There should be a good linkage between the instruction of medical knowledge and the advocated teaching approach, genre-based pedagogy. Previously, genre-based pedagogy has been tried in my general English writing class, but it is the first time that it is applied in a content-based class. So efforts should be made to seek for this linkage. For the moment, the principles of lesson planning is that the medical knowledge of the unit should be kept as the content based, and the use of English in different situations be practiced based on the content.

h. How team-teaching between general English teacher and medical English

teacher happens and what are the possible factors that influence the effects of team-teaching?

Team-teaching between the general English teacher and the medical English teacher takes the forms of boundary crossing actions:

- ✓ **Discussion and analyzing** the existing practices in medical English class across boundaries
- ✓ **Examining and appropriating** the concepts of genre-based pedagogy across boundaries
- ✓ **Negotiating** the material or immaterial resources related to genre-based pedagogy across boundaries
- ✓ **Formulating** genre-based lesson plan, teaching materials and activities across boundaries
- ✓ **Reflecting** on and **evaluating** aspects of the process of implementing genre-based pedagogy across boundaries

Because of limited time for discussion with the medical teacher, the formulation of genre-based materials and activities was mainly conducted by me, the researcher.

Collaborative, mutually supportive building of new models, concepts, artifacts or patterns of conduct across boundaries suggested by Engestrom (2001) was not achieved.

It is therefore difficult to identify significant expansive learning in the form of boundary crossing. Once again, prolonged study and in-depth discussions are necessary to bring about expected research results.

3. Insights for the main study

This section focuses on the insights gained from the pilot study in terms of how the results of the pilot study can be used to benefit the formal case study.

3.1 Improving the Design of Teaching Materials and Activities

The problems of teaching materials and activities identified in the pilot study suggest the following areas of improvement:

- a. The teaching materials such as case history, operative report, and discharge summary can be divided into different unit. In doing so, first of all, more time can be allowed for detailed instruction. Secondly, the students can understand the written texts step by step and have better learning from them.
- b. The teaching materials should be better integrated with oral activities. To this end, the contextual knowledge of different genres should be highlighted to the students. And the teachers' (either the medical teacher's or the researcher's) role of scaffolding should be more skillfully played, depending on the students' performance during the oral activities.
- c. Some video materials can be considered to be used to make the instruction more interesting. It will be great if some video clips from ER or Dr House⁵⁶ can be shown to and analyzed with the students for them to see the use of English language in specific medical situations.
- d. The classroom activities should be better staged according to the steps in the genre-based teaching model and the purposes in different stages should be made clear to the students. It was found that the instructions on English language use were not well linked with the students' oral practice. Joint construction activities⁵⁷ are needed in between them for the students to better understand how English language is used in certain situations. At the same time, the teachers can play scaffolding role at different levels so that the genre knowledge the students have just learnt can be well practiced until at last they can independently construct it.

⁵⁶ Both are America-produced situation comedies in hospital.

⁵⁷ In the genre-based teaching model, the joint construction activities refer to the activities that the teacher and the students cooperate in construct the texts of specific genres before the students were able to construct the texts independently.

3.2 Enhancing Students' Learning

The pilot study also pointed out possible ways to enhance the students' learning from the genre-based instruction. For the students to better understand the purposes of genre-based instruction in the ME class, how English language is used in different medical situations should be explicitly taught so that the students will be able to link the teaching materials and activities to their future needs of using English. Moreover, the key concepts of genre-based pedagogy, such as field, tenor and mode, should be highlighted in the instruction so that the students' understanding of genre and GBP will develop and they will be able to apply genre knowledge in their study.

3.3 Improving Team-Teaching

The pilot study suggested ways to improve the team-teaching between the MF teacher and the researcher, which is crucial in the successful implementation of the genre-based instruction in the formal case study.

- a. The negotiation with the medical English teacher before classroom instruction needs to take longer time so that better rapport can be established in the class. It was found that both the medical teacher and I were nervous during the instruction, feeling stressed because of the presence of the other. There were a couple of times when I felt like saying something when the students were speaking but held back in fear of behaving intrusively. It is suggested that team-teaching in later study be more interactive between the two teachers by adding more chances of idea exchanges between themselves or direct communication with the students.
- b. I should be more skillful in eliciting the medical teacher's opinions. I played the recorded focus discussions afterwards and found that sometimes follow-up questions should be asked to encourage the medical teacher to speak more,

instead of shifting to another topic. For example, when being asked her own learning from the team-teaching, Xiao answered: "I often ask the students to have oral practice right after the instruction of medical knowledge. Now I know it's necessary to teach the students the use of English explicitly." It was a good chance to ask what exactly she had learnt about the use of English, referring to genre-based pedagogy, but I failed to catch this chance.

Conclusion

The pilot intervention case study was conducted to investigate possible learning happening on the students, the ME teacher, and me from the genre-based instruction in the ME class and test the effectiveness of the genre-based teaching materials and activities and the team-teaching between the ME teacher and me. It has gained significant insights to improve the teaching materials and activities, enhance the students' learning and strengthen the cooperation between the ME teacher and me in the formal case study. The invaluable experience of designing, preparing, executing and evaluating the genre-based ME class in cooperation with the ME teacher in the pilot study has enable me to foresee the crucial issues that will be involved in the formal case study and to establish a time frame for the conducting of the case study.

Appendix 6: Genre-based Lesson Plans and Teaching Materials

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The Circulatory system

I. Lesson Plan:

◆ The medical teacher's original plan

Teaching objectives:

By the end of the instruction the students will be able to

- describe the structures and main functions of the circulatory system
- master basic terminologies relevant to circulatory system
- master basic terminologies relevant to diseases in circulatory system

Teaching activities:

6. Teacher introduces the structure of heart and its conduction system.
7. Students do exercises on terminologies (blank-filling and word-matching).
8. Teacher introduces the components of blood, different blood cells and blood typing.
9. Teacher introduces lymphatic system.
10. Teacher introduces circulatory system disease.
11. Students explain the terms of different disease according to rules of word formation.

◆ Revised lesson plan after focus discussions

Teaching objectives:

By the end of the instruction the students will be able to

- Master basic medical knowledge and terminologies of circulatory system
 - Students will know the structures and main functions of the circulatory system and master relevant English terminologies
 - Students will know the common diseases of circulatory system and master relevant English terminologies
- Apply the medical knowledge and terminologies learnt in this unit in different English-speaking situations .
 - Describe the structures and functions of circulatory system and introduce

common diseases of circulatory system in English (paying special attention to definition making).

- Identify the elements that characterize the oral medical interaction situation specified by the speaking task and complete the task in appropriate English.

Teaching activities (total time = 250 minutes):

10. Medical teacher reviews the previous unit with students and introduces the present unit of learning. **(10ms)**
11. Medical teacher introduces the overall structure and functions of circulatory system. **(50ms)**
12. English teacher discusses the importance of reading English medical texts or literatures to get information and conducts genre analysis of definition making. **(20ms)**
13. Students practice definitions making by describing the structures and functions of heart and blood vessels, etc. orally. **(30ms)**
14. Students do vocabulary exercises (e.g. word matching or blank filling). **(15ms)**
15. Medical teacher introduces symptoms and signs of circulatory system disorders. **(45ms)**
16. English teacher discusses the importance of listening training in medical English class and help students complete the listening tasks. **(30ms)**
17. Students role play as doctors or patients in oral practice. **(40ms)**
18. Medical teacher reviews the present unit of learning with students. **(10ms)**

II. Teaching Materials:

1. Materials on genre analysis- definition making

A. Introduction:

- English teacher elicits from students their views of “the purposes of reading as a medical students or a medical professional” and discusses the importance of reading English medical texts or literature in their study and future career development.
- English teacher introduces the concept of genre as used in the genre-based

pedagogy and discusses the key genre appearing in the medical textbook which students are currently using ---- description and its sub genres, e.g. definition making, classification, and process description.

a. Deconstruction

- English teacher introduces the genre of definition making and the learning and working contexts in which definition making is used. She then analyzes the genre of definition making, using sample texts from the medical textbook (refer to the handout on “definition making” bellows)

b. Joint construction

- Students complete the learning tasks listed in the handout.

c. Independent construction

- Medical teacher gives students 3 list of key words for students to make definition.

B. Handout

The genre of definition making

Definitions may simply be short, parenthetical additions to a sentence or perhaps a whole paragraphs or even several paragraphs. The extent of the definition depends on the purpose of the explanation, the level of familiarity your audience has with the subject, and the extent to which there is an agreed upon definition of the concept.

Short definitions: information about a term in a word or phrase and are placed within either *parentheses* or *commas* in a sentence; phrasal definitions are usually signaled by such devices as *e.g.*, *or*, or *i.e.*, or phrased like *known as*, *defined as* and *called*.

- A. The heart, the pump of the cardiovascular system, is located in the thoracic cavity. (p. 32⁵⁸)
- B. The visceral pericardium (also called the epicardium) is directly attached to the heart. (p.32)

Sentence definition: brief information about a term that is given in a sentence

- C. The circulatory system is a network of blood vessels that bring nutrients and other essential elements to the cells throughout the body and carry away wastes. (p. 32)
- D. The heart is the pump of cardiovascular system that circulates the blood throughout the network of blood vessels. (p. 32)

⁵⁸ The page numbers appearing in this appendix are page numbers of the sample texts in students' medical textbook "New Medical English".

Extended definition: usually beginning with a general, one-sentence definition and then becomes more specific as additional details are provided

E. The heart, the pump of the cardiovascular system, is located in the thoracic cavity, and is positioned so that its right and anterior surfaces are occupied mostly by the right ventricle and its left and posterior surfaces by the left ventricle. The heart itself is contained in a sac, the pericardium, which has two layers. The visceral pericardium (also called the epicardium) is directly attached to the heart; the outer membrane, the parietal pericardium, is separated from it by a fluid filled pericardial space. Thick muscle called myocardium and lined with epithelial tissue, endocardium, constitutes the entire heart.

Task 1: read Text A and B, which part of the sentence is a short definition? What devices are used to make the definition? Can you find more examples of short definition in the textbook?

Task 2: read Text C and D, what is the structure of the sentences? Can you find more examples of sentence definitions in the textbook?

Task 3: read Text E and considered the following questions

1. What type of information is included in each of the sentences definition?
2. In what sequence is the passage organized?
3. What tense and voice are used in each of the sentences?
4. What language devices are used in making definition in this text?

Task 4: Put the following sentences back in the correct order to make an extended definition of heart failure.

- A. The reduced flow of arterial blood from the heart in extreme cases results in peripheral circulatory failure.
- B. Common causes are coronary thrombosis, hypertension, chronic disease of the valves, and arrhythmias.
- C. Heart failure is a condition in which the pumping action of the ventricle is inadequate, resulting in back pressure of blood with congestion of the lungs and liver.
- D. Treatment consists of rest, a low salt diet, diuretic drugs, and digitalis derivatives.
- E. The patient experiences breathlessness and edema of the legs.
- F. The veins in the neck become engorged and fluid accumulates in the tissues.
- G. Heart failure may result from any condition that overloads, damages, or reduces the efficiency of the heart muscle.

2. Materials on listening comprehension

A. Introduction:

- English teacher introduces the importance of listening to mini-lectures or audio materials in medical English learning.
- English teacher helps students complete the listening tasks listed in the

handout.

B. Handout

Listening comprehension

Task 1: watch the flash⁵⁹ and try to understand what is talked about, then answer these questions:

- a. What kind of disease is discussed here?
- b. What has caused the disease?
- c. What operation is performed to treat the disease?

Task 2: watch the flash again and fill in the blanks with the missing words from the transcript.

The heart is beating muscle that pumps blood to the body cells. The supply the heart itself with the blood it needs to function effectively. Coronary means crown. The arteries crown, or surround the heart's muscles. If the coronary arteries become narrow or due to the fatty built-up called plaque, the flow of blood that circles the heart can decrease or stop. When this happens, it causes cells of that region to die and leave the heart without the proper amount of blood it needs to function. Coronary arteries surgery, also called CABG, is commonly performed to rerun the flow of blood around the blockage. The chest is opened by a to expose the heart. This procedure is called sternotomy. The heart is temporarily stopped and blood is rerun through a heart-lung machine. blood from the body fills the reservoir in the heart-lung machine. The blood travels to the oxygenator which fills it with oxygen. The blood is then pumped back into the body through . A is taken from a part of the body, usually the saphenous from the leg, and attached from the aorta to a point below the blockage. The heart is restarted and blood now bypasses the blockage to deliver oxygen to the heart. The procedure shown here is a double bypass . Triple or even quadriad bypasses are possible. Coronary artery bypass graft is the most common performed in the United States and around the world. Even so, only about 1/10 of the patients with coronary artery diseases require this type of .

Task 3: Write an extended definition of CABG with 2 or 3 sentences (on separate paper to be handed on).

3. Materials on oral practice

A. Introduction:

- English teacher introduces the situation in which the oral interaction – a clinical consultation between a patient and a doctor -- takes place and discusses the key elements that influence the oral interactional situation in three categories: field, tenor and mode.
- English teacher introduces some useful expressions that can be used in the

⁵⁹ The flash is from <http://www.careflash.com/video/heart-bypass-surgery>

related situations (refer to the handout bellows).

- Medical teacher introduces some important message and key words related to the two diseases to be discussed in the oral interaction (i.e. angina pectoris and anemia) (refer to the handout below)

B. Handout:

This handout provides some language input and content input that may be helpful in the oral practice.

Language Input		
History taking	<p>I'd like to ask you about your past medical history. Can you tell me whether you have had any... disease..? Have you ever been in hospital/ had an operation? Are you receiving any treatment now? Does anyone else in your family have ... ? As far as you know, are there any illness that run in your family?</p>	
Complaints inquiry	<p>Tell me about your problem. What seems to be the problem? Can you point out the painful area? Can you describe the pain? Does it seem to be ...? How long does ... last when you get it? Anything else? Can you describe your ...? Can you tell me how it happened? Does anything else happen when ...?</p>	
Negotiation of meaning	Explicit statement of non-understanding	<p>I'm afraid I don't understand. Sorry? / Pardon me? / I beg your pardon.</p>
	Clarification request	<p>Could you please explain a little bit?</p>
	Comprehension checks	<p>See what I mean? / You know ...?</p>
	Conversation fillers	<p>Well ... / Uh ...</p>

Content Input:

Angina pectoris

Symptoms of angina pectoris

- Pain
 - "Crushing", "tight", "gripping" type chest pain - may be mild/dull to severe in intensity
 - Pain in central chest or behind sternum
 - Pain radiating down left arm, to jaw, neck or shoulder with or without associated chest pain
 - Pain begins while patient is at rest
- Sweating
- Breathlessness
- Anxiety

- Increased heart rate (tachycardia)
- Palpitations 心悸
- Dizziness

Treatments for angina pectoris

- Verapamil 异搏定
- Glyceryl trinitrate (GTN) 硝酸甘油
- Nicorandil 尼可地尔

Anemia

Signs and symptoms of anemia

- The most common symptom of anemia is fatigue (feeling tired or weak). If you have anemia, it may seem hard to find the energy to do normal activities.
- Other signs and symptoms of anemia include:
 - Shortness of breath
 - Dizziness
 - Headache
 - Coldness in the hands and feet
 - Pale skin
 - Chest pain

Treatments for anemia

- To raise your vitamin or iron levels: Common vitamin supplements are vitamin B12 and folic acid (folate 叶酸). Vitamin C is sometimes given to help the body absorb iron.

Nonmeat foods that are good sources of iron include:

- Spinach (菠菜) and other dark green leafy vegetables
- Peanuts, peanut butter, and almonds
- Eggs
- Peas; lentils (小扁豆); and white, red, and baked beans
- Dried fruits, such as raisins(葡萄干), apricots(杏), and peaches
- Prune juice (梅汁)

Good food sources of vitamin B12 include:

- Breakfast cereals with added vitamin B12
- Meats such as beef, liver, poultry, fish, and shellfish
- Egg and dairy products (such as milk, yogurt 酸奶酪, and cheese)

Good sources of folic acid include:

- Spinach and other dark green leafy vegetables
- Black-eyed peas and dried beans
- Beef liver
- Eggs
- Bananas, oranges, orange juice, and some other fruits and juices

The Nervous System

I. Lesson Plan:

◆ The medical teacher's original plan:

Teaching objectives:

By the end of the instruction the students will be able to

- describe the structures and main functions of the nervous system
- master basic terminologies relevant to the nervous system
- master basic terminologies relevant to diseases in the nervous system

Teaching activities:

1. Teacher introduces the structures and functions of the central nervous system.
2. Students do exercises on terminologies (blank-filling and word-matching).
3. Teacher introduces the peripheral nervous system and automatic nervous system.
4. Teacher introduces common diseases of the nervous system.

◆ Revised lesson plan after focus discussions

Teaching objectives

By the end of the instruction the students will be able to

- Master basic medical knowledge and terminologies of the nervous system
 - Students will know the structures and main functions of the nervous system and master relevant English terminologies
 - Students will know the common diseases of the nervous system and master relevant English terminologies
- Apply the medical knowledge and terminologies learnt in this unit in different English-speaking situations.
 - Describe the structures and functions of the nervous system and introduce common diseases of the nervous system in English (paying special attention to definition making and classification).
 - Identify the elements that characterize different listening materials and use different skills in listening comprehension.

- Identify the elements that characterize the oral medical interaction situation specified by the speaking task and complete the task in appropriate English.

Teaching Activities (total time = 250 minutes):

1. Medical teacher reviews the previous unit with students and introduces the present unit of learning. **(10ms)**
2. English teacher introduce a new genre – classification and shows to students how it can be combined with definition making in description. She then conducted genre analysis of classification with students. **(25ms)**
3. Medical teacher introduces the structures and functions of the central nervous system. **(50ms)**
4. Students use the genre of classification and definition making to write a short paragraph introducing the functional categories of neurons. **(20ms)**
5. Students do exercises on terminologies (blank-filling and definition making). **(30ms)**
6. Medical teacher introduces the peripheral nervous system and automatic nervous system. **(20ms)**
7. English teacher helps students complete listening tasks and discusses with them the different features of listening materials in different contexts and related listening skills. **(20ms)**
8. Medical teacher introduces common diseases of the nervous system. **(20ms)**
9. Medical teacher and English teacher help students do oral practice – a discussion between a resident and an intern on a case. English teacher highlights the elements that influence the oral interactional situation. **(45ms)**
10. Medical teacher reviews the present unit of learning with students. **(10ms)**

II. Teaching materials

1. Materials on genre analysis – classification

A. Introduction:

- English teacher reviews the concept of genre and the results of genre analysis on definition making.

a. Deconstruction

- English teacher presents sample texts of classification and analyzes the basic structure and specific language devices with students.
 - English teacher shows to students how the two genres – definition making and classification – can be combined together to describe the structures or functions of human organ and system.
- b. Joint construction
- Medical teacher and English teacher help students introduce the five lobes of the brain, using classification and definition making together.
- c. Independent construction
- Students write a short paragraph introducing the functional categories of neurons, using classification and definition making.

B. Handout:

The Genre of Classification

When we divide something into groups, classes, categories, etc. we are classifying those items. The classification is normally made according to a criterion, or several criteria (standards or principles on which judgments are based).

Task 1: read text A to text F and identify the specific nouns or verbs that are used in classification.

- A. In the central nervous system there are many types of neurotransmitters. (p.79)
- B. There are four major lobes in each cerebral hemisphere. (p.80)
- C. Such fibers are classified into three groups. (p.80)
- D. Reflexes can be classified into 4 groups. (p.84)
- E. The descending pathways can be divided into 2 systems. (p. 84)
- F. The ANS actually consists of 2 systems that work together. (p. 84)

Task 2: read text G that is adapted from your textbook and complete the diagrammatical classification of the central nervous system. Please write on the lines provided.

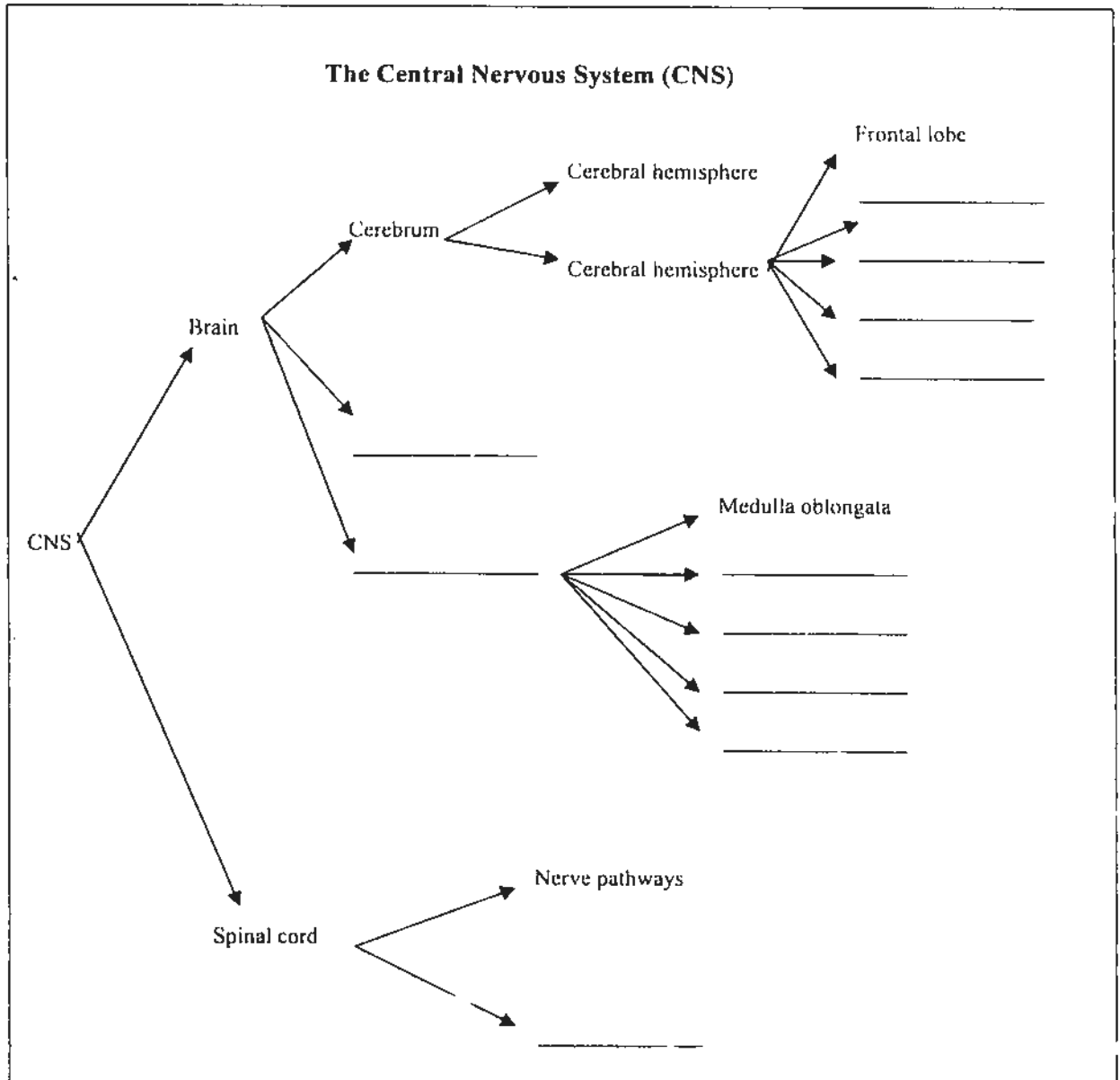
G. The Central Nervous System

The Central Nervous System (CNS) consists of the brain and the spinal cord.

The brain itself is divided into the cerebrum, the cerebellum, and the brainstem. The cerebrum is actually two halves connected deep within by a band of nerve fibers called the corpus callosum and by three other bands of connective nerve fibers known as commissures. There are four major lobes in each cerebral hemisphere: the frontal, the parietal, the occipital, and the temporal. A fifth lobe, the insular lobe, is located on the floor of the lateral fissure. The cerebral cortex, a layer of gray matter consisting of nerve cell bodies, covers the surface of the cerebrum. The inside of the cerebrum consists of white matter containing myelinated fibers. The cerebellum is the largest part of the hindbrain. Like the

cerebrum, it has an outer grey cortex and a core of white matter. Three broad bands of nerve fibers, the inferior, middle, and superior cerebellar peduncles connect it to the medulla, pons, and midbrain respectively. The brainstem is located in the mid portion of the brain and consists of the medulla oblongata, the pons, the mesencephalon, the diencephalon, and the basal nuclei.

The spinal cord contains the nerve pathways and lower centers of the CNS, and begins at the first cervical vertebra and extends to second lumbar vertebra. Like the cerebrum and cerebellum, the spinal cord contains both gray and white matter; here, however, the white matter is on the outside and the gray matter on the inside in an H or butterfly shape.



Task 3: read text H and I and identify the sentence(s) that make definitions or give classifications.

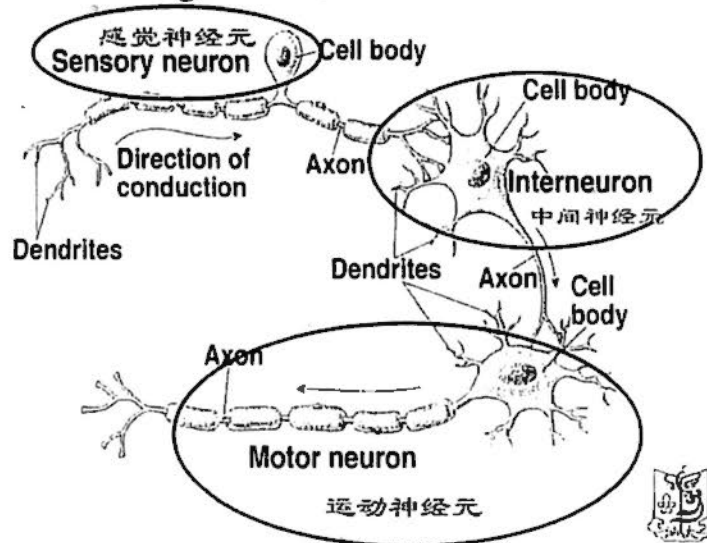
H. There are 3 types of ganglia in the ANS: vertebral, collateral, and terminal. The vertebral ganglia are two columns of ganglia parallel to the vertebral column. They are referred to as sympathetic trunks. The other 2 types are located in the head, thorax, and abdomen, e.g., ciliary ganglion, sphenopalatine ganglion, stellate ganglion, celiac ganglion,

and superior and inferior mesenteric ganglia, etc. (p. 84)

1. Such fibers are classified into three groups: (a) association fibers, which connect adjacent lobes of each cerebral hemisphere and the gyri of each lobe with one another; (b) commissural fibers, which join the two cerebral hemisphere with each other; and (c) projection fibers, which join the cerebrum to the brainstem and spinal cord. (p.80)

Task 4: write a short passage to introduce the functional categories of neurons, paying special attention to how definition and classification are expressed. You can refer to the following figure.

Functional categories of neurons



2. Materials on listening comprehension

A. Introduction:

- Students watch a flash introducing the nervous system and a video clip taken from a medical class in which a professor lectures on the nervous system.
- Medical teacher checks students' comprehension by asking several questions.
- English teacher guides students' attention to the different generic features of the two shows and discuss elements that lead to the differences.
- English teacher discusses different listening skills in different listening contexts.

B. Handout

Listening Comprehension

Task 1: watch the flash show⁶⁰ about the nervous system and answer these questions:

1. How does the nervous system function to response to stimuli?
2. What are the key differences between neurons and supporting cells?

Task 2: watch the video clip⁶¹ in which a medical professor lectures on the nervous system and answer these questions:

1. What are the two neurons the professor has introduced?
2. What is the structure of a generic neuron?

Task 3: watch the two shows again and answer these questions:

1. In which contexts will you watch a flash show and in which contexts will you listen to a medical lecture? What makes the listening different because of their different purposes and audience?
2. Can you identify any linguistic differences displayed in these listening materials?
3. Can you summarize the listening skills that can help you better understand these listening materials (e.g. seeking help from linguistic aids such as choices of word, intonation, pauses or non-linguistic aids such as pictures, words, or gestures)?

S 3. Materials on oral practice

A. Introduction:

a. Deconstruction

- English teacher introduces the situation in which the oral interaction – a clinical discussion between an intern and a resident – takes place and discusses the key elements that influence the oral interactional situation in three categories: field, tenor and mode, highlighting how it compares with a clinical consultation.
- English teacher introduces some useful expressions that can be used in the related situations (refer to the handout bellows).
- Medical teacher introduces some important message and key words related to the two diseases to be discussed in the oral interaction (i.e. stroke and encephalitis) (refer to the handout below)

b. Independent construction

- Students role play in pair and practice the intern-resident interaction.

B. Handout

This handout provides some language input and content input that may be

⁶⁰ The flash is adopted from http://www.dnatube.com/video/2116/Anatomy_Nervous_System.

⁶¹ The video clip is adopted from http://www.dnatube.com/video/1569/Nervous_System_Lecture_1_MIT.

helpful in the oral practice.

Language Input		
Asking for information	What're the patient's main complaints? Does he/she have any past history of the disease? Is there anything else that has to do with this case?	
Asking for opinions	What's your idea? Do you have any idea? Do you suggest...?	
Making suggestions	How about ...? I suggest ... It may be a good trial to ... We had better... Imperative sentences (祈使句, 上级对下级的口吻)	
Negotiation of meaning	Explicit statement of non-understanding	I'm afraid I don't understand. Sorry? / Pardon me? / I beg your pardon.
	Clarification request	Could you please explain a little bit?
	Comprehension checks	See what I mean? / You know ...?
	Conversation fillers	Well ... / Uh ...

Content input:

Stroke

Signs and symptoms of Stroke

- Difficulty speaking or understanding speech (aphasia)
- Difficulty walking
- Dizziness or lightheadedness (vertigo)
- Numbness, paralysis, or weakness, usually on one side of the body
- Severe headache with no known cause
- Sudden confusion
- Sudden decrease in the level of consciousness
- Sudden loss of balance or coordination
- Sudden vision problems (e.g., blurry vision, blindness in one eye)
- Vomiting

Treatment of stroke:

- A computed tomography (CT) scan
- Magnetic resonance imaging (MRI)
- Monitoring blood pressure and breathing ability
- For an ischemic stroke (stroke caused by a blood clot): plasminogen activator (t-PA, a clot-dissolving medicine)
- For a hemorrhagic stroke (stroke caused by bleeding in the brain): few medicine available, important to control bleeding, reduce pressure in the brain, and stabilize vital signs, especially blood pressure, in severe case, surgery may needed to remove blood

Encephalitis

Signs and symptoms of encephalitis

- Severe headache
- Fever
- Nausea
- Vomiting
- Drowsiness or confusion
- Sensitive to bright lights
- Loss of memory
- Unable to speak
- Unable to control movement
- Weakness of one or more parts of the body
- Behavior that is not characteristic
- Change to any of the senses e.g. touch, taste, smell, sight or hearing
- Stiff neck and back
- Muscle weakness
- Seizures
- Sleepiness that may lead to coma

Treatment of encephalitis

- bacterial encephalitis: treated with antibiotic
- viral encephalitis due to herpes simplex: treated with antiviral drugs such as acyclovir, ganciclovir, foscarnet, ribovarin, and AZT.

Translating and Writing

I. Lesson Plan:

◆ The medical teacher's original plan

Teaching objectives:

By the end of the unit the students will

- know some basic skills of translation from English to Chinese or from Chinese to English, especially those particular in medical translation, such as the translation of medical terms as compared with their usage in non-academic contexts.
- know the most important kinds of medical writing, such as review, abstract, research paper, case report, thesis, oral papers and poster, among which abstract and research paper are what they need to know in details in terms of the general structures.

Teaching activities:

1. Teacher lectures on basic skills of translation.
2. Students do some translation exercises after each skill is introduced.
3. Teacher lectures on different kinds of medical writing.
4. Students read some samples of abstract and research papers.

◆ Revised lesson plan after focus discussions

Teaching objectives:

By the end of the unit the students will

- know some basic skills of translation from English to Chinese or from Chinese to English, especially those particular in medical translation, such as the translation of medical terms as compared with their usage in non-academic contexts.

- know the most important kinds of medical writing, such as case history, review, abstract, research paper, case report, thesis, oral papers and poster.
- be able to write a case history.
- be able to write a semi-structured abstract after reading a research paper.
- be able to translate an abstract from Chinese to English.

Teaching activities:

Translation module (total time =180 minutes):

1. Medical teacher explains the importance of writing and translating skills in medical learning and career development and introduces the unit of learning. **(20ms)**
2. English teacher explains the differences between English and Chinese and introduces the process of translation. **(20ms)**
3. Medical teacher introduces the basic skills of translation, such as the transform of parts of speech, ellipses, and supplement. **(40ms)**
4. Students do some sentence translation exercises. **(20ms)**
5. Medical teacher presents some sample abstracts in Chinese and discuss with students the similarities and differences between a Chinese abstract and an English abstract. **(30ms)**
6. Students translate an abstract from Chinese to English. **(50ms)**

* Activity 5 and 6 are arranged after the abstract module.

Case history module (total time =115 minutes):

1. Medical teacher introduces the importance of case history in medical records and discusses with students the purposes, potential audience and requirement of a case history. **(15ms)**
2. Medical teacher discusses the language events sequence in clinical context and shows to the students how medical reports such as case history fits into the context and works with oral language. **(20ms)**
3. Students read four sample case histories and complete learning tasks to analyze the structure and linguistic features of case histories. **(30ms)**

4. Students write a case history referring to a table of key words provided by medical teacher. **(50ms)**

Abstract module (total time = 205 minutes):

1. Medical teacher introduces different kinds of medical writing in research and highlight the importance of abstract writing. **(50ms)**
2. Medical teacher introduces the language events sequence of a medical conference and the process of abstract writing and submission. **(15ms)**
3. Students read three sample abstracts and analyze their similarities and differences in structure and language. **(40ms)**
4. Students write an abstract to submit to a the East Asian Medical Students' Conference (because the students are still in the first year's study and are not capable of writing such an abstract themselves, they are given a published research paper without an abstract to read after class and write an abstract for it). **(50ms)**
5. Medical teacher introduces the process of submission which includes email writing. **(20ms)**
6. Students write a cover letter to be sent with the abstract for submission. **(20ms)**
7. Medical teacher summarizes the unit of learning. **(10ms)**

II. Teaching materials

1. Teaching materials on case history writing

A. Introduction

a. Deconstruction:

- Medical teacher introduces the importance of case history in medical records and discusses with students the purposes, potential audience and requirement of a case history. (Task 1)

- Medical teacher discusses the language events sequent in clinical context and shows to the students how medical reports such as case history fits into the context and works with oral language. (Task 2)
 - Students read four sample case histories and complete learning tasks to analyze the structure and linguistic features of case histories. (Task 3 & 4)
- b. Independent construction
- Students write a case history referring to a table of key words provided by medical teacher. (Task 5)

B. Handout

Case histories

Introduction: Case histories form a substantial element of the medical literature. They are narratives through which physicians at every level of training communicate to each other their understanding of particular patients and their medical problems, what has been done about the problems, and what is being done about them. Generally, case histories refer to both the medical record and its numerous offspring, such as oral case presentations and published case reports. In this part of the writing class, the case histories in written records are focused as the official, permanent account of professional medical care.

Task 1: consider these questions:

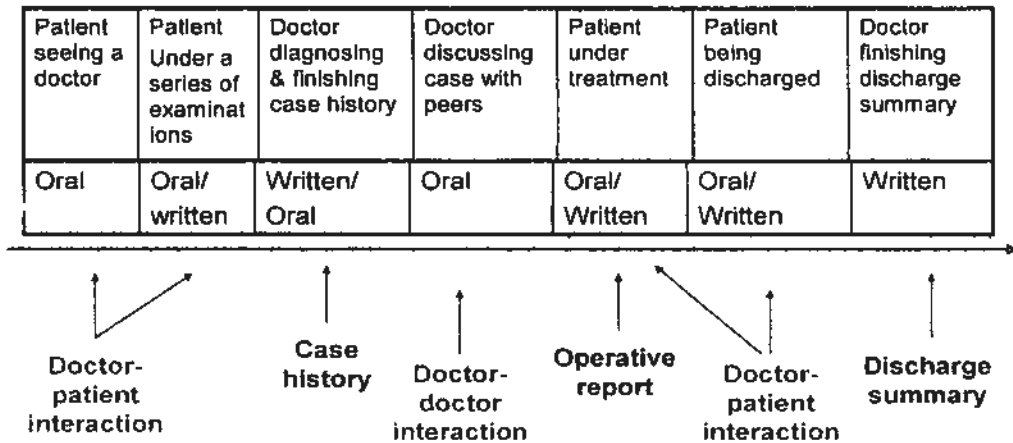
1. What is/are the purpose(s) of writing a case history?
2. Who is the possible audience of a case history?
3. What requirements are imposed on the writing-up of a case history?

Task 2: look at the following figure about the language events sequence in the clinical context and consider this question:

1. How does case history fit into this context?
2. What makes a written case history different from the clinical consultation (doctor-patient interaction) and clinical discussion (doctor-doctor interaction)?

Spoken and written language working together

- A language events sequence in medical context



Sample texts of case history

- A. This 53-year-old female executive secretary presents to the clinic with complaints of excessive urination and thirst for the last month. She has also lost about 10 pounds.
- B. This 32-year-old married white man, appearing his stated age, was admitted to the hospital after presenting himself to the emergency department in acute distress. He complained of intermittent(间断的) pain in the right posterior lumbar area, radiating to the right flank. He has a family history of nephrolithiasis (肾石病) and has been treated for this condition several times in the past 10 years.
- C. This 37-year-old married African-American man was admitted to the orthopedic (整形外科) service of the hospital. He complains of pain when walking and golfing. He says that his knees have "been painful" for many years since he quit playing semiprofessional football, but the pain has become severe in the last 6 months. He is scheduled for arthroscopy (关节镜检查). His preoperative diagnosis is arthritis, left knee, with possible tear of medial meniscus (半月板).
- D. An 85-year-old white man was admitted to the hospital because of fever and confusion. He was in his usual state of good health until 3 days before admission, when he began to show signs of confusion and disorientation accompanied by a fever of 38.5°C. His fever continued, and he showed a steady decline in cognitive function. He developed expressive aphasia (失语症). On physical examination the patient was conscious and alert but disoriented to time and place. Blood pressure was 160/80 mmHg, pulse 96, respiration 20, temperature 38.8°C. There were no focal neurological deficits. Chest x-ray examination, urinalysis, and blood cultures were negative. A neurology consultation was obtained. Magnetic

resonance imaging of the brain was performed, which disclosed inflammatory changes in the left temporal lobe, consistent with herpes simplex (单纯疱疹病毒) encephalitis. An electroencephalogram was markedly abnormal for his age. The patient was given acyclovir (阿昔洛韦, 一种抗病毒药) intravenous infusion. He was placed on intravenous Dilantin (苯妥英钠) and lorazepam (氯羟安定). He later lapsed into a semicomatose (半昏迷的) state. He responded to tactile (触觉的) and verbal stimuli but was completely incoherent. A nasogastric tube (鼻管) was placed, and enteral feedings were begun. Following 14 days of IV (静脉注射) acyclovir (阿昔洛韦), the patient began a slow gradual improvement and by the third week of his illness, he was talking normally and taking nourishment. He is expected to make a complete recovery.

Task 3: read text A, B, C and D, what information is included in each case history? List the information in the sequence in which it is presented in the texts.

Text	Information
A	
B	
C	
D	

Task 4: language focus

- # What tenses are used in the case histories?
- # Identify the usage of passive voice in the case histories? Why it is used in this way? What changes will happen if active voice is used instead?
- # Can you identify any usage of hedging (模糊限制语) in the case histories?

Task 5: writing a case history based on the data provided in the following table.

<u>Patient</u>	Male, 37, married
<u>History</u>	Muscle weakness for 3 week, which improves after rest
<u>Signs and symptoms</u> Fatigability	Muscles become progressively weaker during periods of activity and improve after periods of rest. Ptosis of eyelid Difficulty in chewing, talking, swallowing Difficulty in neck and limb movement Difficulty in breathing
<u>Blood tests</u>	Specific antibody against Ach in plasma
<u>Physical examination</u> Muscle fatigability test	Looking upward and sideways for 30 sec: ptosis and double vision. Looking at the feet while lying on the back for 60 sec Keeping the arms stretched forward for 60 sec
<u>Treatment</u>	Neostigmine (新斯的明) Immunosuppressive drugs: prednisone (强的松)

2. Teaching materials on abstract writing

A. Introduction:

a. Deconstruction

- Medical teacher introduces the process of abstract writing and submission. (Task 1)
- Students read three sample abstracts and analyze their similarities and differences in structure and language. (Task 1)

b. Independent construction

- Students write an abstract to submit to a the East Asian Medical Students' Conference. (Task 2)

c. Deconstruction

- Medical teacher introduces the process of submission which includes email (particular cover letter) writing. (Task 3)
- Medical teacher presents the samples of cover letter and bio and students summarize key point to be included in a cover letter and a bio. (Task 4 & 5)

d. Independent construction

- Students write a cover letter and a bio to be sent with the abstract for submission. (Task 6)

B. Handout

Abstract

Introduction: An abstract is a brief **synopsis** or **summary** of the most important points that the author makes in the paper. It is a highly condensed version of the paper itself. After reading the abstract, the reader knows the main points that the authors have to make. The reader can then evaluate the significance of the paper and then decide whether or not she or he wishes to read the full paper. Although the abstract appears first in a paper, it is generally the last part written. Only after the paper has been completed can the authors decide what should be in the abstract and what parts are supporting detail.

Task 1: read the following samples of abstract and answer these questions:

1. What are the similarities and differences of these abstracts in terms of their structures?
2. What tense is used in sample A and what tenses are used sample B and C? Can you figure out why sometimes past tense and present tense alternate in an abstract?
3. Are phrases or sentences used in the first three paragraphs of sample B? Discuss with your classmates why sometimes phrases instead of complete sentences are used in an abstract.

Sample A: Semi-structured Abstract

Knowledge of modifiable risk factors of

Coronary Atherosclerotic Heart Disease (CASHD) among a sample in India

(<http://www.biomedcentral.com/1472-698X/9/2>)

Background

The prevalence of Coronary Atherosclerotic Heart Disease (CASHD) is increasing in India. Several modifiable risk factors contribute directly to this disease burden. Public knowledge of such risk factors among the urban Indian population is largely unknown. This investigation attempts to quantify knowledge of modifiable risk factors of CASHD as sampled among an Indian population at a large metropolitan hospital.

Methods

A hospital-based, cross sectional study was conducted at All India Institute of Medical Sciences (AIIMS), a major tertiary care hospital in New Delhi, India. Participants (n = 217) recruited from patient waiting areas in the emergency room were provided with standardized questionnaires to assess their knowledge of modifiable risk factors of CASHD. The risk factors specifically included smoking, hypertension, elevated cholesterol levels, diabetes mellitus and obesity. Identifying 3 or less risk factors was regarded as a poor knowledge level, whereas identifying 4 or more risk factors was regarded as a good knowledge level. A multiple logistic regression model was used to isolate independent demographic markers predictive of a participant's level of knowledge.

Results

41% of the sample surveyed had a good level of knowledge. 68%, 72%, 73% and 57% of the population identified smoking, obesity, hypertension, and high cholesterol correctly, respectively. 30% identified diabetes mellitus as a modifiable risk factor of CASHD. In multiple logistic regression analysis independent demographic predictors of a good knowledge level with a statistically significant ($p < 0.05$) adjusted odds ratio (aOR) were: routine exercise of moderate intensity, aOR 8.41 (compared to infrequent or no exercise), no history of smoking, aOR 8.25, and former smokers, aOR 48.28 (compared to current smokers). Although statistically insignificant, a trend towards a good knowledge level was associated with higher levels of education.

Conclusion

An Indian population in a hospital setting shows a lack of knowledge pertaining to modifiable risk factors of CASHD. By isolating demographic predictors of poor knowledge, such as current smokers and persons who do not exercise regularly, educational interventions can be effectively targeted and implemented as primary and secondary prevention strategies to reduce the burden of CASHD in India.

Sample B: Structured Abstract

Predicting risk of type 2 diabetes in England and Wales:

prospective derivation and validation of QDScore

(<http://www.ncbi.nlm.nih.gov/pubmed/19297312>)

OBJECTIVE: To develop and validate a new diabetes risk algorithm (the QDScore) for estimating 10 year risk of acquiring diagnosed type 2 diabetes over a 10 year time period in an ethnically and socioeconomically diverse population.

DESIGN: Prospective open cohort study using routinely collected data from 355 general practices in England and Wales to develop the score and from 176 separate practices to validate the score.

PARTICIPANTS: 2 540 753 patients aged 25-79 in the derivation cohort, who contributed 16 436 135 person years of observation and of whom 78 081 had an incident diagnosis of type 2 diabetes; 1 232 832 patients (7 643 037 person years) in the validation cohort, with 37 535 incident cases of type 2 diabetes.

OUTCOME MEASURES: A Cox proportional hazards model was used to estimate effects of risk factors in the derivation cohort and to derive a risk equation in men and women. The predictive variables examined and included in the final model were self assigned ethnicity, age, sex, body mass index, smoking status, family history of diabetes, Townsend deprivation score, treated hypertension, cardiovascular disease, and current use of corticosteroids; the outcome of interest was incident diabetes recorded in general practice records. Measures of calibration and discrimination were calculated in the validation cohort.

RESULTS: A fourfold to fivefold variation in risk of type 2 diabetes existed between different ethnic groups. Compared with the white reference group, the adjusted hazard ratio was 4.07 (95% confidence interval 3.24 to 5.11) for Bangladeshi women, 4.53 (3.67 to 5.59) for Bangladeshi men, 2.15 (1.84 to 2.52) for Pakistani women, and 2.54 (2.20 to 2.93) for Pakistani men. Pakistani and Bangladeshi men had significantly higher hazard ratios than Indian men. Black African men and Chinese women had an increased risk compared with the corresponding white reference group. In the validation dataset, the model explained 51.53% (95% confidence interval 50.90 to 52.16) of the variation in women and 48.16% (47.52 to 48.80) of that in men. The risk score showed good discrimination, with a D statistic of 2.11 (95% confidence interval 2.08 to 2.14) in women and 1.97 (1.95 to 2.00) in men. The model was well calibrated.

CONCLUSIONS: The QDScore is the first risk prediction algorithm to estimate the 10 year risk of diabetes on the basis of a prospective cohort study and including both social deprivation and ethnicity. The algorithm does not need laboratory tests and can be used in clinical settings and also by the public through a simple web calculator.

Sample C: abstract for review article

Bitter taste, phytonutrients, and the consumer: a review

(<http://www.ajcn.org/cgi/content/abstract/72/6/1424>)

Dietary phytonutrients found in vegetables and fruit appear to lower the risk of cancer and cardiovascular disease. Studies on the mechanisms of chemoprotection have focused on the biological activity of plant-based phenols and polyphenols, flavonoids, isoflavones, terpenes, and glucosinolates. Enhancing the phytonutrient content of plant foods through selective breeding or genetic improvement is a potent dietary option for disease prevention. However, most, if not all, of these bioactive compounds are bitter, acrid, or astringent and therefore aversive to the consumer. Some have long been viewed as plant-based toxins. As a result, the food industry routinely removes these compounds from plant foods through selective breeding and a variety of debittering processes. This poses a dilemma for the designers of functional foods because increasing the content of bitter phytonutrients for health may be wholly incompatible with consumer acceptance. Studies on phytonutrients and health ought to take sensory factors and food preferences into account.

Task 2: suppose you are going to submit a semi-structured abstract to the East Asian Medical Students' Conference (EAMSC). The abstract is based on a research paper you have just finished and has not been published or presented elsewhere. You are required to read the research paper before the class (omit here for the sake of length) and write the abstract in class.

Task 3: discuss with your classmates what you need to do to submit your abstract to EAMSC via email.

Task 4: the submission of writing always requires a cover letter and a bio. Discuss with your classmates what you need to include in a cover letter and a bio.

Task 5: read the sample cover letter and bio. What information is included?

Sample D: a cover letter

June 18, 2009

Dear Editor:

I am submitting a manuscript entitled "XXX" for publication in your journal.

Neither the entire paper nor any part of its content has been published or has been accepted elsewhere. It is not being submitted to any other journal.

We believe the paper may be of particular interest to the readers of your journal as it

Correspondence should be addressed to XXX at the following address, phone and fax number, and email address:

...

Thanks very much for your attention to our paper.

Sincerely yours,

XXX

Address:

Phone:

Fax:

Email:

Sample E: a bio

XXX has been worked as an ophthalmologist and a researcher for 10 years in the International Ophthalmic Research Centre in ST. His research interests are He has published three academic article in XXX and has presented in the XXX conference several times.

Task 6: write a cover letter and a bio of yourself to submit the abstract you have written to EAMSC.

3. Materials on abstract translating

A. Introduction

a.. Deconstruction

- Students compare a sample of abstract in Chinese with the sample abstracts in English above and discuss the similarities and differences of abstract structure in the two languages. (Task 1)

b. Independent construction

- Students translate the Chinese abstract into English. (Task 2)

B. Handout

激活蛋白-1 在不稳定冠状动脉病变中的作用

(Chinese Journal of Internal Medicine, Vol.47, No.7)

目的 探讨冠心病患者激活蛋白-1 与冠状动脉(冠脉)粥样硬化病变的关系。

方法 根据冠脉造影将 142 例患者分为冠心病组和对照组。冠心病组根据临床类型、病变类型和病变程度进一步分组。裂解外周血白细胞,测定磷酸化 c-Jun 吸光度(A),反映活化 AP-1 数量。

结果 磷酸化 c-Jun A 值冠心病组明显高于对照组 (1.43 ± 0.33 比 0.71 ± 0.13 , $P < 0.001$), 急性冠脉综合征组明显高于稳定性心绞痛组 (1.56 ± 0.28 比 1.14 ± 0.25 , $P < 0.001$)。磷酸化 c-Jun 随冠脉病变类型和程度的加重而增加。

结论 AP-1 表达量增高与冠脉粥样硬化发生显著相关,其可能作为预测冠脉粥样硬化病变及斑块稳定性的一个指标。

Task 1: read the Chinese abstract carefully and compare it with the English abstract you have read before. Can you identify the similarities and differences in the format of abstract presented in the two languages?

Task 2: translate the Chinese abstract into English, using the translating skills that have been discussed in the class.

Appendix 7: Excerpt from Fang's Medical English Class on Cell, Tissues, and Organsh Class on Cell, Tissues, and Organs

Fang:	Now it's time to check your understanding of the text. Do you have any questions?	01
	Anyone?	02
Student A:	What is <i>tubules</i> ?	03
Fang:	Tell me where you find the word.	04
Student A:	In the third paragraph.	05
Fang:	Yes, tubules. Do you know tube, T-U-B-E. Yes, and <i>ule</i> is a suffix, means very small.	06 07
Many students:	(in low voice) Small.	08
Fang:	So you've got it. Tubules means small tubes, very very small, very very thin. Good question. That is what we concern in medical English. Anytime when we discuss, it's about the medical language in English, we won't go very deep concerning medical science because we don't have enough time, and I cannot say I'm an expert in every area of th medical science. And about the text, what we concern is the words, terms, the phrases, the sentences. Now, other questions? No question? It's my turn to raise questions. The boy over there. I'd like you to read the text. Read the first sentence.	09 10 11 12 13 14 15 16
Student B:	<i>The cell is the basic structure of all living things.</i>	17
Fang:	Yes, stop here. Only one sentence. Basic structure. Pay attention to the pronunciation. Structure.	18 19
Many students:	(in low voice) Structure.	20
Fang:	Yes, structure. Now a question for everyone. What does the sentence mean? Can you explain the sentence in your own words? In your own words. Yes, please.	21 22
Student C:	I think it means the cell is the basic unit of all organs.	23
Fang:	Yes. Any other explanation? Just according to your understanding.	24
Student D:	Our body is made up of cells.	25
Fang:	Yes. Yes. Our body is made up of cells. OK, you , the next sentence.	26
Student E:	<i>Our body parts are made up of thousands of cells that group together to perform specific functions.</i>	27 28
Fang:	/spə'cifik/, not /'specifik/. Specific functions. Now, what does <i>specific</i> mean?	29
Student F:	Xióngxì.	30
Student G:	Zhòngyào.	31
Student H:	Particular	32
Fang:	Yes, particular. Something special. OK? And <i>perform</i> , what does <i>perform</i> mean?	33
Student I:	Carry out.	34
Fang:	Carry out. That's good.	35
Student J:	Do	36
Fang:	Yes, very simple one. Don't forget <i>do</i> . In many circumstances, you just use <i>do</i> .	37

* In the excerpts in Appendix 13, 14 and 15, Student A, B, and C and so on refer to different students who answered Fang's questions individually in each excerpt.

Appendix 8: Excerpt from Fang's Medical English Class on Case History

Writing

Fang:	Why do we write a case history? What are the purposes?	01
	(Many students answered in whisper, sounds undistinguished.)	
Fang:	We write it to keep record of a patient. And who is the possible audience?	02
Student A:	Patients.	03
Fang:	No, normally the case histories are not allowed to show to the patients. The nurses.	04
	The nurses and other doctors. This is how they communicate with each other about a	05
	patient's medical problems. In case there is any medical accident, the case history	06
	may also be presented in the court. So there are other possible audience, like the	07
	judges. Then, what are the requirements of writing a case history?	08
Student B:	Clear.	09
Fang:	Yes, and most importantly, objective. You have to write down what really happened	10
	and should not tell lies. This is the responsibility of a doctor. And it's the morality.	11
	Then, how to write a case history? Next, let's have a look at the information structure	12
	of the abstracts you've got in your handout. Let's see how they are written. <i>This</i>	13
	<i>thirty-two-old married white man.</i> What's this? We call it personal details. Personal	14
	information, about sex, age, race, and marriage status. Actually, strictly speaking, the	15
	patient's occupation should also be included here. Engineer, teacher, or worker, or	16
	something else. Then, <i>appearing his stated age, was admitted to hospital. Admitted to</i>	17
	<i>means rùyùàn.</i> He was admitted to hospital. In what circumstance? <i>After presenting</i>	18
	<i>himself to the emergency department.</i> Present here means appear, chūxiàn. That is, he	19
	went to the emergency department first and was transitted into the ward. <i>In acute</i>	20
	<i>distress.</i> Acute distress is pressing and urgent condition. <i>He complained of</i>	21
	<i>intermittent pain in the right posterior lumbar area.</i> Yǎobù hòu yòucè téngtòng.	22
	This is his complaint, that is, the patient told the doctor what was wrong with him.	23
	<i>Radiating to the right flank.</i> Fànsè dào yòu yāowō. <i>He has a family history of</i>	24
	<i>nephrolithiasis and has been treated for this condition several times in the past 10</i>	25
	<i>years.</i> This is his family history and disease history. So the case history transits from	26
	persoanl information to medical information. What kinds of information we get from	27
	this case history? Persoanl dat, complaint, family history, and disearse history. Now	28
	you have sample text A, B, C, and D. I've explained text B. Can you read text A, C,	29
	and D to see what information is told?	30

Appendix 9: Excerpt from Fang's Medical English Class on Abstract Writing

Fang:	What is an abstract? Have you ever read an abstract? In Chinese, it means zhōiyòu.	01
Student A:	Film. If I want to see a film, I can look for the information from it.	02
Student B:	I'm thinking about abstract's functions. I think abstracts not only talk about some general ideas, but also make the readers... to interest the reader and they will read it.	03 04
Fang:	Yes. This is what we need an abstract for. What is an abstract? Usually, in a research paper, or scientific report, or a review, there is a short introduction. We call it an abstract. Sometimes it's located behind the paper, and we call it a summary. So abstract or summary is condensed or shortened paper. We use very few words to describe the most important information. This is an abstract. Then why we should read or write an abstract? Why? Just now one of you said it. A whole paper, like the one I gave to you just now, is usually quite long. This one is only six pages. This is the shortest. But some academic paper, research paper is more than 10 pages. We don't have enough time to go through the whole paper. But in order to understand, to get the main idea of the paper, we just read, at first the title, then the abstract. If you're interested in the title, you may go on to read the abstract. Then if you find the paper very interesting, you try to find the whole paper to get more information. Then, why do you write an abstract? Actually, it is the same reason. Because there is a need. Because a lot of people don't read the whole paper. So writing abstract is to satisfy this need. And many publications collect the abstracts of academic papers. For example, Chemical Abstract is world famous. If your abstract is admitted in Chemical Abstract, it'll be a great honour. And Biological Abstract. In medical field, we have Excerpta Media. It is published in Holland, collecting the abstracts of research papers that have been published in world-famous magazines. It acknowledges only a few Chinese medical magazines. So you have to write abstracts when you want to have your paper publicized. Some editors even want to have a look at your abstracts before you send the whole paper. There are different kinds of abstracts. You've just read three abstracts. Now let's see what kinds of abstracts they are. Tell me the characteristics of the first abstract. It's very obvious.	05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Student A:	It is divided into four parts.	29
Fang:	Yes, divided into four parts.	30
Student A:	And the tense is present. There are many data.	31
Fang:	OK. Good. So an obvious feature of the first abstract is there are four paragraphs. Each paragraph has a title. That's the first one. How about the second one? What are the differences between the first one and the second one?	32 33 34
Student B:	There're more details.	35
Fang:	More details. Yes, more details. It has six parts. So it is written in much more details. That means...	36 37
Many students	(together) Get more information.	38
Fang:	Yes. Now let's look at the third one.	39
Student C:	Key words.	40
Fang:	Yes, it has key words, and it's shorter. And what is it most obvious feature?	41

Student D:	There's only one paragraph.	42
Fang:	Yes, only one paragraph, and without subtitles. Next, let's have a look at the tense and voice of these abstracts. Let's look at the first and the second one. In the first one, what tense is used in background?	43 44 45
Many students	(together) Present tense.	46
Fang:	Yes, present tense. Then the method?	47
Many students	(together) Past tense.	48
Fang:	Past tense. How about the results?	49
Many students	(together) Past tense.	50
Fang:	And conclusion?	51
Many students	(together) Present.	52
Fang:	Yes, present. Let's look at the second abstract. Which tense is used in objective?	53
Student E:	Past.	54
Fang:	Past? Which tense is used in objective? Actually the infinitive is used here, you can't tell which tense is used. And design? Which structure is used here? It's a participle. Is it a complete sentence?	55 56 57
Many students	(together) No.	58
Fang:	Yes, it's not a complete sentence. How about participates?	59
Many students	(together) Phrase.	60
Fang:	Noun phrase. The central word is <i>patients</i> . The other parts modify <i>patients</i> . And outcome measures? That's very obvious.	61 62
Many students	(together) Past.	63
Fang:	Yes, past tense. And the results? Past tense. Yes, past tense. And complete sentences are used in outcome measures and results. Finally, the conclusion.	64 65
Student F:	Present tense.	66
Fang:	Present tense. Now let's have a look at the third abstract. What tense is used? Present tense throughout the abstract. This one is special. It's a review article. The abstract of a review article is written in this way. It's a review of many others' research., so it uses present tense. Now, we can summarize different kinds of abstract...	67 68 69 70

References

- Adamson, B., & Morris, P. (1997). The English curriculum in the people's republic of china. *Comparative Education Review*, 41(1), 26.
- Agar, M. H. (1980). *The professional stranger: An informal introduction to ethnography*. New York: Academic Press, Inc.
- Anderson, G. L. (1989). Critical ethnography in education: Origins, current status, and new directions. *Review of Educational Research*, 59(3), 249-270.
- Anderson, G. L. (2006) Analytic autoethnography. *Journal of Contemporary Ethnography*, 35(4), 373-395.
- Atkinson, D., & Ramanathan, V. (1995). Cultures of writing: An ethnographic comparison of LI and L2 university writing/language programs. *TESOL Quarterly*, 29(3), 539-568.
- Bacha, N. N., & Bahous, R. (2008). Contrasting views of business students' writing needs in an EFL environment. *English for Specific Purposes*, 27, 74-93.
- Bakhtin, M. M. (1986). The problem of speech genres. In C. Emerson, & M. Molquist (Eds.), *Speech genres and other late essays* (V. W. McGee Trans.). (pp. 60-102). Austin, TX: University of Texas Press.
- Basturkmen, H. (1998). Refining procedures: A needs analysis project at Kuwait university. *English Teaching Forum*, 36(4), 2-9.
- Bedny, G. Z., & Karwowski, W. (2004). Activity theory as a basis for the study of work. *Ergonomics*, 47(2), 134-153.
- Belcher, D. (2004). Trends in teaching English for specific purposes. *Annual Review of Applied Linguistics*, 24, 165-186.
- Belcher, D. (2006). English for specific purposes: Teaching to perceived needs and imagined futures in worlds of work, study, and everyday life. *TESOL Quarterly*, 40(1), 133-156.
- Benesch, S. (1993). ESL, ideology, and the politics of pragmatism 27, 705-717. *TESOL Quarterly*, 27, 705-717.

- Benesch, S. (1996). Needs analysis and curriculum development in EAP: An example of a critical approach. *TESOL Quarterly*, 30(4), 723-738.
- Benesch, S. (1999). Rights analysis: Studying power relations in an academic setting. *English for Specific Purposes*, 18(4), 313-327.
- Benesch, S. (2001). *Critical English for academic purposes: Theory, politics, and practice*. Mahwah, NJ: Lawrence Erlbaum.
- Bhatia, V. K. (1993). *Analysing genre: Language use in professional settings*. London; New York: Longman.
- Bhatia, V. K. (1997). The power and politics of genre. *World Englishes*, 16(3), 359-371.
- Bosher, S., & Smallkoski, K. (2002). From needs analysis to curriculum development: Designing a course in health-care communication for immigrant students in the USA. *English for Specific Purposes*, 21, 59-79.
- Brindley, G. P. (1989). The role of needs analysis in adult ESL programme design. In R. K. Johnson (Ed.), *The second language curriculum* (pp. 63-78). Cambridge: Cambridge University Press.
- Brown, J. D. (1995). *The elements of language curriculum: A systematic approach to program development*. Boston: Heinle & Heinle Publishers.
- Brown, J. D. (2001). *Using surveys in language programs*, Cambridge: Cambridge University Press.
- Brown, T. P., & Lewis, M. (2003). An ESP project: Analysis of an authentic workplace conversation. *English for Specific Purposes*, 22, 93-98.
- Bruthiaux, P. (2002). Hold your courses: Language education, language choice, and economic development. *TESOL Quarterly*, 36(3), 275-296.
- Burns, A. (2001). Genre-based approaches to writing and beginning adult ESL learners. In C. N. Candlin, & N. Mercer (Eds.), *English language teaching in its social context: A reader* (pp. 200-207). London; New York: Routledge.
- Callaghan, M., & Rothery, J. (1988). *Teaching factual writing: A genre-based approach* No. Report of the DSP Literacy Project). Metropolitan East Region: DSP Resource Productions.

- Carrell, P. L. (1985). Facilitating ESL reading by teaching text structure. *TESOL Quarterly*, 19(4), 727-752.
- Cameron, R. (1998). A language-focused needs analysis for ESL-speaking nursing students in class and clinic. *Foreign Language Annals*, 31(2), 203-218.
- Canagarajah, A. S. (1993). Critical ethnography of a Sri Lankan classroom: Ambiguities in student opposition to reproduction through ESOL. *TESOL Quarterly*, 27(4), 601-626.
- Canagarajah, A. S. (1999). *Resisting linguistic imperialism in English teaching*. Oxford: Oxford University Press.
- Canagarajah, A. S. (2005). *Reclaiming the local in language policy and practice*. Mahwah, N.J.: Lawrence Erlbaum.
- Chambers, F. (1980). A re-evaluation of needs analysis in ESP. *The ESP Journal*, 1(1), 25-33.
- Cheng, A. (2006). Understanding learners and learning in ESP genre-based writing instruction. *English for Specific Purposes*, 25, 76-89.
- Cheng, A. (2007). Transferring generic features and recontextualizing genre awareness: Understanding writing performance in the ESP genre-based literacy framework. *English for Specific Purposes*, 26, 287-307.
- Chia, H., Johnson, R., Chia, H., & Olive, F. (1999). English for college students in Taiwan: A study of perceptions of English needs in a medical context. *English for Specific Purposes*, 18(2), 107-119.
- Christie, F., & Martin, J. R. (Eds.). (1997). *Genre and institution*. London and Washington: Cassell.
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education*. London and New York: Routledge Falmer.
- Coleman, H., & Burton, J. (1985). Dentist-patient communication: Communicating complaint. In Wolfson, & Judd (Eds.), *TESOL and sociolinguistics*. Rowley, Mass: Newbury House.

- Colic-Peisker, V. (2004). Doing ethnography in "one's own ethnic community". In L. Hume, & J. Mulcock (Eds.), *Anthropologists in the field: Cases in participant observation* (pp. 82-94). New York: Columbia University Press.
- Cope, B., & Kalantzis, M. (Eds.). (1993). *The powers of literacy: A genre approach to teaching writing*. UK; USA: The Falmer Press.
- Cortazzi, M. & Jin, L. Culture of learning: language classrooms in China. In Coleman, H. (Ed.), *Society and the language classroom* (pp. 169-206). Cambridge: Cambridge University Press.
- Cowling, J. D. (2007). Needs analysis: Planning a syllabus for a series of intensive workplace courses at a leading Japanese company. *English for Specific Purposes*, 26, 426-442.
- Creswell, J. W. (1998). *Qualitative inquiry and research design*. Thousand Oaks, London: Sage Publications.
- Cunningham, F. M. (June 1999). Improving adult English language learners' speaking skills. *ERIC Digest. National Center for ESL Literacy Education*, , December 2008.
- Davis, J. N., Lange, D. L & Samuels, S. J. (1988). Effects of text structure instruction on foreign language reader's recall of a scientific journal article. *Journal of Reading Behavior*, XX(3), 203-214.
- Davis, K. A. (1995). Qualitative theory and methods in applied linguistics research. *TESOL Quarterly*, 29(3), 427-453.
- Deutch, Y. (2003). Needs analysis for academic legal English courses in Israel: A model of setting priorities. *Journal of English for Academic Purposes*, 2, 125-146.
- Dick, Bob (2005) Grounded theory: a thumbnail sketch. [On line] Available at <http://www.scu.edu.au/schools/gcm/ar/arp/grounded.html>

- Donato, R. (2000). Sociocultural contributions to understanding the foreign and second language classroom. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 27-50). Oxford: Oxford University Press.
- Dornyei, Z. (1990). Conceptualizing motivation in foreign-language learning. *Language Learning*, 40(1), 45-78.
- Dornyei, Z. (1994). Motivation and motivating in the foreign language classroom. *The Modern Language Journal*, 78(3), 273-284.
- Dornyei, Z. (2001). *Teaching and researching motivation*. England: Pearson Education Limited.
- Dressen-Hammouda, D. (2008). From novice to disciplinary expert: Disciplinary identity and genre mastery. *English for Specific Purposes*, 27(2), 233-252.
- Dubois, B. (1981). The construction of noun phrases in biomedical journal articles. In Hoedt, J. et al. (Ed.), *Pragmatics and LSP* (). Copenhagen: Copenhagen School of Economics.
- Dudley-Evans, T. (1995). Common-core and specific approaches to the teaching of academic writing. In D. Belcher, and G. Briane (Eds.), *Academic writing in a second language: Essays on research and pedagogy* (pp.293-313). Norwood, NJ: Ablex.
- Dudley-Evans, T. (2001). English for specific purposes. In R. Carter, & D. Nunan (Eds.), *The Cambridge guide to teaching English to speakers of other languages* (pp. 131-136). Cambridge: Cambridge University Press.
- Dudley-Evans, T., & St John, M. (1998). *Developments in ESP: A multi-disciplinary approach*. Cambridge, UK: Cambridge University Press.
- Duff, P. A. (1995). An ethnography of communication in immersion classrooms in Hungary. *TESOL Quarterly*, 29(3), 505-537.
- Edwin, R. & Hundley, V. (2001). The importance of pilot studies. *Social Research Update*, Vol.35, <http://sru.soc.surrey.ac.uk/SRU35.html>.
- Ely, M., Vinz, R., Anzul, M., & Downing, M. (1997). *On writing qualitative research: Living by words*. London: The Falmer Press.

- Engestrom, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.
- Engestrom, Y. (1993). Developmental studies of work as a test bench of activity theory: The case of primary care medical practice. In S. Chaiklin, & J. Lave (Eds.), *Understanding practice: Perspectives on activity and context* (pp. 64-103). Cambridge: Cambridge University Press.
- Engestrom, Y. (1996). Development as breaking away and opening up: A challenge to Vygotsky. *Swiss Journal of Psychology*, 55, 126-132.
- Engestrom, Y. (1999). Learning by expanding: Ten years after. *Learning by expanding* (F. Seeger Trans.). (German ed.,). Marburg: BdWi-Verlag.
- Engestrom, Y. (2001a). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work*, 14(1), 133-156.
- Engestrom, Y. (2001b). *The horizontal dimension of expansive learning: Weaving a texture of cognitive trails in the terrain of health care in Helsinki* (Paper presented at the international symposium "New Challenges to Research on Learning", March 21-23 University of Helsinki, Finland).
- Engestrom, Y. (2004). The new generation of expertise: Seven theses. In H. Rainbird, A. Fuller & A. Munro (Eds.), *Workplace learning in context* (pp. 145-165). London; New York: Routledge.
- Engestrom, Y. (2007a). Activity theory and expansive design. In S. Bagnara, & G. C. Smith (Eds.), *Theories and practice in interactional design* (pp. 3-23). Mahwah, NJ: Lawrence Erlbaum.
- Engestrom, Y. (2007b). Enriching the theory of expansive learning: Lessons from journeys toward coconfiguration. *Mind, Culture, and Activity*, 14(1/2), 23-39.
- Engestrom, Y., Engestrom, R., & Karkkainen, M. (1995). Polycontextuality and boundary crossing in expert cognition: Learning and problem solving in complex work activities. *Learning and Instruction*, , 319-336.
- Engestrom, Y., Engestrom, R., & Suntio, A. (2002). Can a school community learn to master its own future? an activity-theoretical study of expansive learning among middle school teachers. In G. Wells, & G. Claxton (Eds.), *Learning for*

- life in the 21st century: Sociocultural perspectives on the future of education* (pp. 211-224). Oxford, UK: Blackwell Publishers.
- Engestrom, Y., Miettinen, R., & Punamaki, R. (Eds.). (1999). *Perspectives on activity theory*. Cambridge: Cambridge University Press.
- Ericson, F. (1984). What makes school ethnography 'ethnographic'? *Anthropology & Education Quarterly*, 15, 51-66.
- Fetterman, D. (1989). *Ethnography: Step by step*. Newbury Park, Calif: Sage Publications, Inc.
- Fincham, M. (1983). Hospital communication. In A. Waters (Ed.), *Lancaster practical papers in English language education* (pp. 64-98). Oxford; New York: Pergamon Press.
- Flowerdew, J. (1993a). An educational, or process, approach to the teaching of professional genres. *ELT Journal*, 47(4), 305-316.
- Flowerdew, J. (1993b). Content-based language instruction in a tertiary setting, *English for Specific Purposes*, 12, 121-138.
- Fox, C. (2002). Incorporating variation in the French classroom: A pedagogical norm for listening comprehension. In S. Gass, K. Bardovi-Harlig, S. Magman & J. Walz (Eds.), *Pedagogical norms for second and foreign language learning and teaching: Studies in honour of Valdman* (pp. 201-219). Amsterdam: Benjamins.
- Frank, R. (1998). Medical communication, non-native English speaking patients and native English speaking professionals. *English for Specific Purposes*, 19, 31-62.
- Freedman, A. (1993). Show and tell? the role of explicit teaching in the learning of new genres. *Research in the Teaching of English*, 27, 222-251.
- Freedman, A., & Medway, P. (Eds.). (1994). *Genre and the new rhetoric*. UK; USA: Taylor & Francis.
- Freire, P. (1993). *Pedagogy of the oppressed* (M. B. Ramos Trans.). (New rev. 20th-Anniversary ed. ed.). New York: Continuum.
- Fullan, M. (1993). *Change forces: Probing the depths of educational reform*. London: Falmer Press.
- Gee, S. (1997). Teaching writing: A genre-based approach. In G. Fulcher (Ed.),

- Writing in the English language classroom* (pp. 24–40). Hertfordshire, UK: Prentice Hall Europe ELT.
- Giannoni, D. S. (2008). Medical writing at the periphery: The case of Italian journal editorials. *Journal of English for Academic Purposes*, 7, 97-107.
- Gillham, B. (2000). *Case study research methods*. London: Continuum.
- Glaser, B. G. & Strauss, A. L. (1967). *The discovery of grounded theory*. Chicago: Aldine.
- Graham, J. G., & Beardsley, R. S. (1986). English for specific purposes: Content, language, and communication in a pharmacy course model. *TESOL Quarterly*, 20(2), 227-245.
- Grundy, S. (1987). *Curriculum: Product or praxis*. London, New York and Philadelphia: The Falmer Press.
- Hall, R., Wright, K., & Wieckert, K. (2007). Interactive and historical processes of distributing statistical concepts through work organization. *Mind, Culture, and Activity*, 14(1/2), 103-127.
- Halliday, M. A. K. (1978). *Language as social semiotic: The social interpretation of language and meaning*. London: Edward Arnold.
- Halliday, M. A. K., & Hasan, R. (1989). *Language, context, and text: Aspects of language in a social-semiotic perspective* (2nd Edition ed.). Oxford: Oxford University Press.
- Hammond, J., & Macken-Horarik, M. (1999). Critical literacy: Challenges and questions for ESL classrooms. *TESOL Quarterly*, 33(3), 528-543.
- Hammond, J., & Derewianka, B. (2001). Genre. In R. Carter, & D. Nunan (Eds.), *The Cambridge guide to teaching English to speakers of other languages* (pp. 186-193). UK: Cambridge University Press.
- Hasu, M. (2005). In search of sensitive ethnography of change: Tracing the invisible handoffs from technology developers to users. *Mind, Cultrue, and Activity*, 12(2), 90-112.
- Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms*. Cambridge: Cambridge University Press.

- Henry, A., & Roseberry, R. L. (1998). An evaluation of a genre-based approach to the teaching of EAP/ESP writing. *TESOL Quarterly*, 32(1), 147-156.
- Holliday, A. (1994). *Appropriate methodology*. Cambridge, UK: Cambridge University Press.
- Holliday, A., & Cooke, T. (1983). An ecological approach to ESP. In A. Waters (Ed.), *Lancaster practical papers in English language education: Issues in ESP* (pp. 124-143). Oxford; New York: Pergamon Press.
- Holme, R., & Chalauisaeng, B. (2006). The learner as needs analyst: The use of participatory appraisal in the EAP reading classroom. *English for Specific Purposes*, 25, 403-419.
- Hu, G. (2002). Potential cultural resistance to pedagogical imports: The case of communicative language teaching in china. *Language, Culture and Curriculum*, 15(2), 93-105.
- Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learning-centred approach*. Cambridge; New York: Cambridge University Press.
- Hyland, K. (2003). Genre-based pedagogies: A social response to process. *Journal of Second Language Writing*, 12(1), 17-29.
- Hyland, K. (2004). *Genre and second language writing*. Ann Arbor: University of Michigan Press.
- Hyland, K. (2007). Genre pedagogy: Language, literacy, and L2 writing instruction. *Journal of Second Language Writing*, 16, 148-164.
- Hyon, S. (1996). Genre in three traditions: Implications for ESL. *TESOL Quarterly*, 30(4), 693-722.
- Hyon, S. (2001). Long-term effects of genre-based instruction: A follow-up study of an EAP reading course. *English for Specific Purposes*, 20, 417-438.
- Jasso-Aguilar, R. (1999). Sources, methods, and triangulation in needs analysis. *English for Specific Purposes*, 18, 27-46.

- Johns, A. M. (2002). *Genre in the classroom: Multiple perspectives*. Mahwah, NJ: Lawrence Erlbaum.
- Johns, A. M. (2003). Genre and ESL/EFL composition instruction. In B. Kroll (Ed.), *Exploring the dynamics of second language writing* (pp. 195-217). Cambridge, UK: Cambridge University Press.
- Johnson, D. (1992). *Approaches to research in second language learning*. New York: Longman.
- Kanoksilapatham, B. (2005). Rhetorical structure of biochemistry research articles. *English for Specific Purposes, 24*, 269-292.
- Kaptelinin, V., & Nardi, B. A. (1997). *Activity theory: Basic concepts and applications*. Retrieved July 22, 2007 from <http://acm.org/sigchi/chi97/proceedings/tutorial/bn.htm>
- Keesing-Styles, L. (2003). The relationship between critical pedagogy and assessment in teacher education. *Radical Pedagogy*, Retrieved from http://radicalpedagogy.icaap.org/content/issue5_1/03_keesing-styles.html
- Kent, P., Noss, R., Guile, D., Hoyles, C., & Bakker, A. (2007). Characterizing the use of mathematical knowledge in boundary-crossing situations at work. *Mind, Culture, and Activity, 14*(1/2), 64-82.
- Kramsch, C. (1993). *Context and culture in language teaching*. Oxford: Oxford University Press.
- Kramsch, C., & Sullivan, P. (1996). Appropriate pedagogy. *ELT Journal, 50*(3), 199-212.
- Kumaravadivelu, B. (2006). TESOL methods: Changing tracks, challenging trends. *TESOL Quarterly, 40*(1), 59-81.
- Lantolf, J. P. (Ed.). (2000). *Sociocultural theory and second language learning*. Oxford ; New York: Oxford University Press.
- Lantolf, J. P. (2004). Sociocultural theory and second and foreign language learning: An overview of sociocultural theory. In K. van Esch, & O. St. John (Eds.), *New*

- insights into foreign language learning and teaching*. Frankfurt am Main: Peter Lang.
- Lantolf, J. P., & Thorne, S. L. (2006). *Sociocultural theory and the genesis of second language development*. Oxford: Oxford University Press.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge; New York: Cambridge University Press.
- LeCompte, M. D., & Preissle, J. (1993). *Ethnography and qualitative design in educational research* (second edition ed.). San Diego: Academic Press, Inc.
- Leont'ev, A. N. (1978). *Activity, consciousness, and personality*. Englewood Cliffs: Prentice-Hall.
- Lewis, P. D. (1975). *Adjectives in descriptive anatomy*. Unpublished MA/ELT Thesis, Department of Linguistics and Phonetics, University of Leeds,
- Li, P. (2008). English learning needs analysis at a Chinese medical college. *Soft Science of Health*, 22(1), 52-54.
- Li, X., Gao, X., Ma, L. & Song, B. (2007). Analysis of Bilingual Teaching in Seven-year Program. *Researches in Medical Education*, 6(10), 965-966.
- Li, X., Li, L., Jia, J. & Zhang, S. (2007). Teaching design of medical English in 7-year clinical medicine program and original experience of inducting-exertion teaching pattern. *China Journal of Modern Medicine*, 17(2), 252-253.
- Liao, L., & Qin, A. (2000). A survey report on subject-based English instructional situations. *Foreign Language World*, 79, 26-30.
- Lin, A. M. Y. (1997). Hong Kong children's rights to a culturally compatible English education. *Hong Kong Journal of Applied Linguistics*, 2(2), 23-48.
- Lin, A. M. Y. (1999). Doing-English-lessons in the reproduction or transformation of social worlds? *TESOL Quarterly*, 33(3), 393-412.
- Lin, A. M. Y. (In Press). Curriculum: Foreign language learning. In P. D. Pearson, & A. Luke (Eds.), *International encyclopedia of education* (3rd Ed. ed.,)

- Lin, A. M. Y. & Martin, P. (Eds.). (2005). *Decolonisation, globalization: Language-in-education policy and practice*. Clevedon: Multilingual Matters.
- Lin, A. M. Y., Wang, W., Akamatsu, N. & Riazi, M. (2005) Transnational TESOL Professionals and Teaching English for Globalized Communication (TEGCOM). In A. S. Canagarajah (Ed.), *Reclaiming the global and the local in language policy and practice* (pp. 197-222). Mahwah, New Jersey: Lawrence Erlbaum
- Littlefair, A. B. (1991). *Reading all types of writing: The importance of genre and register for reading development*. Milton Keynes; Philadelphia: Open University Press.
- Long, M. H. (Ed.). (2005). *Second language needs analysis*. Cambridge: Cambridge University Press.
- Macken-Horarik, M. (2002). "Something to shoot for": a systemic functional approach to teaching genre in secondary school science. In A. M. Johns (Ed.), *Genre in the classroom: multiple perspectives* (pp.17-42). Mahwah, New Jersey; London: Lawrence Erlbaum Associates, Publishers.
- Maclean, J. & Maher, J. C. (1994). Medical Language. In R. E. Asher (Ed.), *The Encyclopedia of language and linguistics* (2431-2433). Oxford ; New York : Pergamon Press.
- Maher, J. (1985). *The role of English in medicine and medical education in Japan*. Unpublished Doctoral dissertation, Department of Applied Linguistics, University of Edinburgh, Scotland.
- Maher, J. (1986a). The development of English as an international language of medicine. *Applied Linguistics*, 7(2), 206-220.
- Maher, J. (1986b). English for medical purposes. *Language Teaching*, 19(1), 112-145.
- Marco, M. (2000). Collocational frameworks in medical research papers: A genre-based study. *English for Specific Purposes*, 19, 63-86.
- Marshall, S. (1991). A genre-based approach to the teaching of report-writing. *English for Specific Purposes*, 10(1), 3-13.

- Martin, J. R. (1984). Language, register, and genre. In F. Christie (Ed.), *Language studies: Children's writing reader* (pp. 21-30). Geelong, Australia: Deakin University Press.
- Martin, J. R. (1999). Mentoring semogenesis: "genre-based" literacy pedagogy. In F. Christie (Ed.), *Pedagogy and the shaping of consciousness: Linguistic and social process* (pp. 123-155). London: Cassell (Open Linguistics Series).
- Merriam, S. B. (1988). *Case study research in education: A qualitative approach*. San Francisco; London: Jossey-Bass Publishers.
- Miller, C. (1994). Genre as social action. In A. Freedman, & P. Medway (Eds.), *Genre and the new rhetoric* (pp. 23-42). London: Taylor and Francis.
- Mitchell, C. (1984). Case studies. In R. F. Ellen (Ed.), *Ethnographic research: A guide to general conduct* (pp. 237-241). Orlando, FL: Academic Press.
- Murison-Bowie, S. (1967). *Aspects of the relevance of 'register' to the teaching of English to students with specialist interests*. Unpublished MSc Thesis, Department of Applied Linguistics, University of Edinburgh, Scotland.
- Mustafa, Z. (1995). The effect of genre awareness on linguistic transfer. *English for Specific Purposes*, 14(3), 247-256.
- Nash, D. (1963). The ethnologist as stranger. *Southwestern Journal of Anthropology*, 19, 149-167.
- Nelson, C. P., & Kim, M. (2001). Contradictions, appropriation, and transformation: An activity theory approach to L2 writing and classroom practices. *Texas Papers in Foreign Language Education*, 6(1), 37-62.
- Nickerson, C. (2005). English as a lingua franca in international business contexts. *English for Specific Purposes*, 24, 367-380.
- Nunan, D. (1992). *Research methods in language learning*. Cambridge: Cambridge University Press.
- Nunan, D. (2003). The impact of English as a global language on educational policies and practices in the Asia-pacific region. *TESOL Quarterly*, 37(4), 589-613.

- Nwogu, K. N. (1991). Structure of science popularizations: A genre-analysis approach to the schema of popularized medical texts. *English for Specific Purposes*, 10, 111-123.
- Ohta, A. S. (2000). Rethinking interaction in SLA: Developmentally appropriate assistance in the zone of proximal development and the acquisition of L2 grammar. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 51-78). Oxford: Oxford university Press.
- Osborn, T. A. (2000). *Critical reflection and the foreign language classroom*. Westport, Conn: Bergin & Garvey.
- Ostbye, L. I. (1997). ESP in medical science: A multidimensional approach to syllabus design. In J. Pigue & D. Viera (Eds.), *Applied languages: Theory and practice in ESP* (pp. 93-105). Universitat de Valencia.
- Ouyang, H. H. (2004). *Remaking of face and community of practices: An ethnography of local and expatriate English teachers' reform stories in today's china*. Beijing: Beijing University Press.
- Painter, C. (2001). Understanding genre and register: implications for language teaching. In A. Burns & C. Coffin (Eds.), *Analyzing English in a global context: a reader* (pp.167-180). London: Routledge.
- Paltridge, B. (1995). Analyzing genre: A relational perspective. *System*, 23(4), 503-511.
- Paltridge, B. (2001). *Genre and the language learning classroom*. USA: The University of Michigan Press.
- Pang, J., Zhou, X., & Fu, Z. (2002). English for international trade: China enters the WTO. *World Englishes*, 21(2), 201-216.
- Patton, M. Q. (1990). *Qualitative evaluation and methods* (2nd Ed.). Newsbury Park: Sage Publications.
- Pennycook, A. (1994a). Beyond (f)utilitarianism: English as academic purpose. *Hong Kong Papers in Linguistics and Language Teaching*, (17), 13-23.
- Pennycook, A. (1994b). *The cultural politics of English as an international language*. London and New York: Longman.

- Pennycook, A. (1997). Vulgar pragmatism, critical pragmatism, and EAP. *English for Specific Purposes*, 16(4), 253-269.
- Pennycook, A. (1999). Introduction: Critical approaches to TESOL. *TESOL Quarterly*, 33(3), 329-348.
- Punch, K. (1998). *Introduction to social research: Quantitative and qualitative approaches*. London: Sage.
- Punch, M. (1986). *The politics and ethics of fieldwork*. Beverly Hills: Sage Publications.
- Qin, X. B. (2000). A review of genre-based teaching approaches. *Foreign Language Teaching and Research*, 32 (1), pp.42-46.
- Ramanathan, V. (1999). "English is here to stay": A critical look at institutional and educational practices in India. *TESOL Quarterly*, 33(2), 211-231.
- Ramanathan, V. (2002). *The politics of TESOL education : Writing, knowledge, critical pedagogy*. New York: Routledge Falmer.
- Ramanathan, V. (2005). *The English-vernacular divide : Postcolonial language politics and practice*. Clevedon ; Buffalo: Multilingual Matters.
- Ramanathan, V. (2006). The vernacularization of English: Crossing global currents to re-dress west-based TESOL. *Critical Inquiry in Language Studies*, 3(2&3), 131-146.
- Reid, J. M. (1989). English as a second language composition in higher education: The expectations of the academic audience. In D. M. Johnson, & D. H. Roen (Eds.), *Richness in writing: Empowering ESL students* (pp. 220-234). New York: Longman.
- Ribes, R., & Ros, P. R. (2006). *Medical English*. Verlag Berlin; Heidelberg: Springer.
- Richards, J. C. & Lockhart, C. (2000). *Reflecting teaching in second language classrooms*. Beijing: People's Education Press.
- Richterich, R. (1972). *A model for the definition of language needs of adults learning a modern language*. Strasbourg: Council of Europe.

- Richterich, R. (Ed.). (1983). *Case studies in identifying language needs*. Oxford: Pergamon/Council of Europe.
- Richterich, R., & Chancerel, J. (1977). *Identifying the needs of adults learning a foreign language*. Oxford; New York: Pergamon Press.
- Robinson, P. (1991). *ESP today: A practitioner's guide*. New York: Prentice Hall.
- Rogers, S. M. (2007). *Mastering scientific and medical writing: A self-help guide*. Verlag Berlin; Heidelberg: Springer.
- Roth, W., & Tobin, K. (2002). Redesigning an "urban" teacher education program: An activity theory perspective. *Mind, Culture, and Activity*, 9(2), 108-131.
- Russell, D. R. (1997). Rethinking genre in school and society: An activity theory analysis. *Communication*, (14), 504-554.
- Salager-Meyer, F. (1992). A text-type and move analysis study of verb tense and modality distribution in medical English abstracts. *English for Specific Purposes*, 11, 93-113.
- Salager-Meyer, F. (1994). Hedges and textual communicative function in medical English written discourse. *English for Specific Purposes*, 13(2), 149-170.
- Scollon, R., & Scollon, S. (1981). *Narrative, literacy, and face in interethnic communication*. Norwood, NJ: Ablex.
- Sengupta, S., Forey, G., & Hamp-Lyons, L. (1999). Supporting effective English communication within the context of teaching and research in a tertiary institute: Developing a genre model for consciousness raising. *English for Specific Purposes*, 18, s7-s22.
- Shao, X. (1974). *English grammar for medical students*. Beijing: People's Medicine Publishing House.
- Shao, X. (1980). *How to read and translate English medical books and journals*. Beijing: People's Medicine Publishing House.
- Shao, X. (1982). *Practical English writing*. Beijing: People's Medicine Publishing House.
- Shaul, D. L., & Furbee, N. L. (1998). *Language and culture*. Prospect Heights, Illinois: Waveland Press, Inc.

- Shi, L., Corcos, R., & Storey, A. (2001). Using student performance data to develop an English course for clinical training. *English for Specific Purposes, 20*, 267-291.
- Shuy, R. W. (1979). *Three types of interference to an effective exchange of information in the medical interview* (Paper presented to the Society for Computer Medicine. Atlanta:
- Smart, G. (1998). Mapping conceptual worlds: Using interpretive ethnography to explore knowledge-making in a professional community. *The Journal of Business Communication, 35*(1), 111-127.
- Snow, M. A. & Brinton, D. M. (1988). Content-based language instruction: Investigating the effectiveness of the adjunct model. *TESOL Quarterly, 22*(4), 553-574.
- So, B. P. C. (2005). From analysis to pedagogic applications: Using newspaper genres to write school genres. *Journal of English for Academic Purposes, 4*, 67-82.
- Spindler, G., & Hammond, L. (2000). The use of anthropological methods in educational research: Two perspectives. *Harvard Educational Review, 70*(1), 39-48.
- Spindler, G., & Spindler, L. (1997). Ethnography: An anthropological view. In G. Spindler (Ed.), *Education and cultural process: Anthropological approaches* (3rd Edition ed., pp. 50-76). Prospect Heights, Illinois: Waveland Press, Inc.
- Stoller, F. L. (2004). Content-based instruction: Perspectives on curriculum planning. *Annual Review of Applied Linguistics, 24*, 261-283.
- Stake, R. E. (1988). Case study methods in educational research: Seeking sweet water. In R. M. Jaeger (Ed.), *Complementary methods for research in education* (pp. 253-278). Washington, DC: American Educational Research Association.
- Stevenson, J. L. (1977). Student attitudes toward language, learning, and language learning. *System, 5*(3), 200-214.

- Steward, A. (1998). *The ethnographer's method*. Thousand Oaks, Calif.: Sage Publications.
- Swales, J. M. (1983). *Vocabulary work in LSP ---- a case of neglect*. Mimeo, language studies Unit, Aston University.
- Swales, J. M. (1990). *Genre analysis: English in academic and research settings*. Cambridge: Cambridge University Press.
- Swales, J. M. (2004). *Research genres: Exploration and applications*. Cambridge: Cambridge University Press.
- Swales, J. M., & Feak, C. B. (2000). *English in today's research world: A writing guide*. Ann Arbor, MI: University of Michigan Press.
- Swales, J. M., & Feak, C. B. (2004). *Academic writing for graduate students: Essential tasks and skills* (2nd Edition ed.). Ann Arbor, MI: University of Michigan Press.
- Tardy, C. M. (2006). Researching first and second language genre learning: A comparative review and a look ahead. *Journal of Second Language Writing*, 15, 79-101.
- Tharp, R. & Gallimore, R. (1988). *Rousing minds to life: teaching, learning, and schooling in social context*. Cambridge: Cambridge University Press.
- Thorne, S. L. (2004). Cultural historical activity theory and the object of innovation. In O. St. John, K. van Esch & E. Schalkwijk (Eds.), *New insights into foreign language learning and teaching* (pp. 51-70). Frankfurt: Peter Lang Verlag.
- Tsui, A. B. M., & Law, D. Y. K. (2007). Learning as boundary-crossing in school-university partnership. *Teaching and Teacher Education*, 23, 1289-1301.
- Tuomi-Grohn, T., Engestrom, Y., & Young, M. (2003). From transfer to boundary-crossing between school and work as a tool for developing vocational education :an introduction. In T. Tuomi-Grohn, T. & Y. Engestrom (Eds.), *Between school and work : New perspectives on transfer and boundary-crossing* (pp.1-15). Amstertam: Pergamon.
- Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. *Advances in Experimental Social Psychology*, 29, 271-360.

- van Naerssen, M. (1988). ESP research in the people's republic of china. In M. L. Tickoo (Ed.), *ESP: State of art* (pp. 113-125). Singapore: SEAMEO Regional Language Centre.
- Varttala, T. (1999). Remarks on the communicative functions of hedging in popular scientific and specialist research articles on medicine. *English for Specific Purposes*, 18(2), 177-200.
- Vygotsky, L. S. (1978). *Mind in society : The development of higher psychological processes*. Cambridge, Mass.: Harvard University Press.
- Vygotsky, L. S. (1981). The genesis of higher mental functions. In J. V. Wertsch (Ed.), *The concept of activity in soviet psychology*. Armonk NY: M. E. Sharpe.
- Vygotsky, L. S. (1987). *Thinking and speech*. New York: Plenum.
- Wakins, D. A., & Biggs, J. B. (Eds.). (1996). *The Chinese learner: Cultural, psychological, and contextual influence*. Hong Kong ; Melbourne: Comparative Education Research Centre ; Australia Council for Educational Research.
- Watson-Gegeo, K. (1988). Ethnography in ESL: Defining the essentials. *TESOL Quarterly*, 22(4), 575-592.
- Webber, P. (2005). Interactive features in medical conference monologue. *English for Specific Purposes*, 24, 157-181.
- Weinreich, F., Vincent, S., Morris, K., & Collander-Brown, P. (1982). First find your students. *EFL Gazette*,
- Weissberg, R., & Buker, S. (1990). *Writing up research: Experimental research report writing for students of English*. Eaglewood Cliffs: Prentice-Hall.
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.
- Wertsch, J. V. (1985). *Vygotsky and the social formation of mind*. Cambridge, Mass.: Harvard University Press.
- Wertsch, J. V., & Stone, C. A. (1999). The concept of internalization in Vygotsky's account of the genesis of higher mental functions. In P. Lloyd, & C. Fernyhough (Eds.), *Lev Vygotsky: Critical assessment* (pp. 363-380). London and New York: Routledge.

- Wertsch, J. V., & Tulviste, P. (1999). L. S. Vygotsky and contemporary developmental psychology. In P. Lloyd, & C. Fernyhough (Eds.), *Lev Vygotsky: Critical assessments* (pp. 9-30). London and New York: Routledge.
- West, R. (1994). Needs analysis in language teaching. *Language Teaching*, 27(1), 1-19.
- West, R. (1997). Needs analysis: State of the art. In R. Howard, & G. Brown (Eds.), *Teacher education for language for specific purposes* (pp. 68-79). Clevedon, Avon; Philadelphia, Pa: Multilingual Matters.
- Wexler, P. (1987). *Social analysis of education: After the new sociology*. London: Routledge & Kegan Paul.
- Widdowson, H. (1998). Communication and community: The pragmatics of ESP. *English for Specific Purposes*, 17(1), 3-14.
- Willett, G. (1995). Becoming first graders in an L2: An ethnographic study of L2 socialization. *TESOL Quarterly*, 29(3), 473-503.
- Williams, R. (1999). Results sections of medical research articles: Analysis of rhetorical categories for pedagogical purposes. *English for Specific Purposes*, 18(4), 347-366.
- Wolcott, H. T. (1994). *Transforming qualitative data" description, analysis, and interpretation*. Thousand Oaks, CA: Sage.
- Wu, H. & Badger, R. (2009). In a strange and uncharted land: ESP teachers' strategies for dealing with unpredicted problem in subject knowledge during class. *English for Specific Purposes*, 28(1), 19-32.
- Yang, M. (in press). A Process–genre approach to teaching writing to medical science graduate students. In S. Kasten (Ed), *Effective Second Language Writing*. USA: TESOL.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd Edition ed.). USA: Sage Publications, Inc.
- Yu, L. (2001). Communicative language teaching in china: Progress and resistance. *TESOL Quarterly*, 35(1), 194-198.

- Yuan, J. (2005). On the course objectives of college Business English and its teaching principles. *Foreign Language World*, 03, 26-31.
- Zhang, L. (2006). Teaching English in china: Language, literature, culture, and social implications. *Foreign Language Teaching and Research*, 38(5), 248-253.
- Zhang, Z., Luo, J., Huang, W., & Wang, K. (Eds.). (2005). *New medical English*. Beijing: Chinese Scientific and Technological Press.
- Zhao, J. (2006). An Investigation into the Current Business English Curriculum Design and Instruction Practices in Colleges and Universities of China. *Foreign Languages in China*, 05, 9-12.
- Zhao, Y., & Campbell, K. P. (1995). English in china. *World Englishes*, 14(3), 377-390.
- Zughoul, M. R., & Hussein, R. F. (1985). English for higher education in the Arab world: A case study of needs analysis at Yarmouk university. *The ESP Journal*, 4, 133-152.