INSTRUCTIONAL DEVELOPMENT SKILLS AND COMPETENCIES FOR POST-SECONDARY FACULTY-DESIGNERS DEVELOPING ONLINE COURSES

by

Raul Mendez

SONJA A. IRLBECK, EdD, Faculty Mentor and Chair

VERN CZELUSNIAK, PhD, Committee Member

LAURA TRUJILLO-JENKS, PhD, Committee Member

James A. Wold, PhD, Interim Dean, School of Education

A Dissertation Submitted in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

Capella University

October 2014

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

Abstract

With the advent of digital media and communication, online learning has grown at an unprecedented pace over the past few decades. Institutions of higher learning have begun to incorporate online teaching platforms into their course offerings. More students now opt for online courses due to the flexibility and convenience that online platforms offer. The increased availability of online courses comes with concerns regarding quality of online courses being offered. Anxieties over quality have necessitated design of online courses that meet minimum quality and industry standards. Faculty-designers (educational professionals untrained in instructional design) have emerged as critical components in development of online courses and a need has arisen to ensure that faculty-designers possess appropriate skills and competencies to maintain quality of online courses. This research identified skills for educational professionals untrained in instructional design by identifying basic skills and competencies enabling faculty-designers to develop online courses.

Acknowledgments

I would like to express my sincere appreciation to my mentor Dr. Sonja Irlbeck who has encouraged me and helped me improve my writing skills as I went through the comprehensive and dissertation process. She always provided encouraging, helpful, and timely feedback and gently nudged me along when other life responsibilities had me pushing my dissertation to finish this journey. I will thank her all my life for her dedication. I would like to thank my other dissertation committee members Dr. Vern Czelusniak and Dr. Laura Trujillo-Jenks for their timely feedback and encouragement.

DEDICATION

This dissertation is dedicated to all of my family members near and far who supported me in this journey. Especially to my wife Cleo who has helped me all along the way—and for her understanding, as I was busy dedicating long hours to research and writing. You are such an amazing gift to me. Balancing a full-time teaching job, the one-and-a-half hour commute to my job, studying, researching, and having a family life was certainly not easy, and would have been impossible to achieve without her patience and guidance. This work is also dedicated to my beloved parents, Dr. Victor J. Mendez-Pena and Olga Maria (Pepita) Lobo de Mendez and my brother Carlos, who are no longer with us, but who were always proud of my accomplishments.

Table of Contents

List of Tables

List of Figures

CHAPTER 1: INTRODUCTION

Introduction of the Problem

Faculty-designers are instructors who are given responsibility for creation, development, and management of online classes, and these responsibilities often are assigned without any formal training in performing these tasks (Carliner & Driscoll, 2009). As a result, faculty-designers create courses without the benefit of having instructional development skills and competencies. This problem is compounded since professional and scholarly institutions have not yet identified necessary skills and competencies faculty-designers should possess in order to design courses. Such competencies and skills are embedded in instructional design theories related to content expertise as well as faculty-designers' understanding of educational concepts and instructional design (Reigeluth, 2012). In order to keep pace with the rising numbers of students opting for online courses along with positive outcomes from learning online, some institutions designate instructors to create and teach online courses despite their lack of training in instructional design. The quality and appropriateness of online programs can be called into question; in 2007, Merrill noted that individuals design 95% of online courses with no formal instructional design (ID) background.

Online education experienced exponential growth in the early 2000s due to increase in sophisticated information and communication technologies. The use of information technology tools in online platforms enhanced speed and quality of delivery of learning materials. Proponents of distance education applauded the flexibility and convenience of online learning, and studies confirmed that this platform offered

"flexibility and choice" (Swan, 2003, p. 6) as well as "convenience" (Song & Hill, 2007, p. 27) to learners.

Universities have the responsibility to ensure that faculty-designers are conversant with salient disciplines in instructional design within "e-learning design" (Swan, 2003, p. 23). Many decisions that influence successful delivery of course materials must be made prior to implementation and execution of online classes. Course design stages require careful planning to facilitate student learning. Well-designed courses enable smooth implementation and delivery of course content (Anderson, 2008). Faculty-designers require skills and competencies that guarantee effectiveness and quality of online learning (Weston, 2009).

The increasing demand for online courses persuaded many colleges and universities to offer courses through online platforms. As the number of institutions offering online courses continues to rise with an "unprecedented influx" of students seeking online education, the demand for skilled and competent faculty-designers also increased (Stoltenkamp, Taliep, & Braaf, 2011, p. 77). Hsu and Lin (2008) and Anderson (2008) agree that quality of online courses has been compromised in part by hastily developed learning materials due to the unavailability of well-prepared faculty-designers.

Rapid growth of online learning demands greater attention to components of quality online courses (Reigeluth, 2012). Understanding how to design an online course and how to nurture effective online instructors produces the best learning outcomes (Hsu & Lin, 2008). Technologies used to design and access online courses have improved since the mid-1980s. Faculty-designers often need to expand their knowledge of how contemporary students use technology to access information and pursue learning

opportunities previously unavailable to faculty or learner. Online learning has broadened students' perspectives on global issues, and as such, stakeholders in education need to "commit to assuring the quality" of education in order to meet global expectations (Anyikwa, Amadi, & Ememe, 2012, p. 75).

The lack of available competent faculty-designers has the potential to hamper development of effective online courses. Online courses hinge on technological advances that are dynamic, fluid, and ever evolving. These ideas are associated with knowing how learning theories support learning and influence skills and competencies required to create effective online learning materials. Lack of instructional development skills could lead to substandard online courses and result in negative experiences. Faculty-designers benefit from skills and competencies in instructional development (Batts, Pagliari, Mallett, & McFadden, 2010). This dissertation identified skills and competencies expected of post-secondary faculty-designers responsible for online course development.

Background of the Study

Over the past decade, the number of tertiary institutions offering online courses increased considerably, which created a high demand for well-trained faculty-designers. Competencies and skills for faculty-designers who develop online courses derive from instructional design theories that relate to content expertise and understanding education (Reigeluth, 2012). This content expertise and knowledge of theories help conceptualize ways in which learning theories support adult learning and influence skills and competencies required to create effective online learning materials. This study identified basic skills and competencies for faculty-designers responsible for online course development and illustrates how this can help improve quality of online education.

Theoretical Implications

This study was grounded in, and will help advance, the field of instructional design theory, as it underlies education and training systems in the post-industrial era that tend to be more customized and learner-centered. Using instructional design principles when creating online courses helps the transformation from a time-based system to an attainment-based system where learning is maximized (Reigeluth, 2012). A set of 14 psychological principles was developed for a learner-centered paradigm by the American Psychological Association (APA) (1993), which has implications for online course development given its suitability for promoting learner-centered approaches. Bonk and Cummings (1998) linked these to a set of 12 practical guidelines, which informed this study about best practices for creating online courses. Besides providing psychological justification, frameworks have been devised for promoting participant interaction, web integration, identifying instructor and student roles, and promoting specific pedagogical strategies (Moore, 2003). The study could have theoretical implications for these aforementioned areas, principles, and framework with respect to faculty-designers and development skills used to ensure student learning is customized and learner-centered. As skills and competencies are still largely unidentified, the results of this study can help shape a theoretical framework for online course development.

Advancing Scientific Knowledge

The possibility of developing and providing online courses arose with the advent of the public Internet in the late 1980s. Some higher education institutions took advantage of the Internet as a medium for educational instruction during this period (Levy, 2003), but early forms of online courses typically involved only providing digital versions of

text material (Yang & Cornelius, 2005). Although the quality of online courses and e-learning technologies has improved, several challenges remain as highlighted later in this dissertation. Online course creation and development is important because it affects quality and effectiveness of the courses (Di Biase, 2000). Identifying essential basic skills and competencies that enable faculty-designers to develop online courses, including best practices and distinguishing features, could help to improve overall course quality, understanding of theories by faculty-designers, and increase faculty-designer skills.

Zheng and Smaldino (2003) reported the need for more research about how faculty members view themselves as online course designers and how elements of instructional design are applied, which this study investigated. One example of a competency required by online course designers is to accommodate a range of learning styles in order to ensure learners maintain their interest (Valcheva & Todorova, 2012). More comprehensively, investigating design principles necessary for online course creation is important; much information about how to design appropriately can be gleaned from interacting with online students and virtual objects in virtual environments (Badawy, 2012), coupled with formal study about theories and design elements.

Determining distinguishing features of online course design could shed more light on how creating online courses differs from traditional face-to-face instructional materials. Whereas the latter typically follows a logical order of analysis, design, development, implementation, and evaluation, the former allows significantly more flexibility for providing learner-generated content (Bakardjieva & Gradinarova, 2012), increasing critical thinking and research skills, and providing for more customized learning. A changed focus, the need to assume multiple roles, and the skills used to

provide more flexible content requires greater insight into learner needs, the role of online course developers, and skills involved with using online development tools, all of which this study explored.

Purpose of the Study

The study sought to identify necessary skills and competencies that enable faculty-designers to develop online courses. An awareness of needed skills and competencies will be especially useful for those not trained in instructional design and who would like to be better informed about required competencies and best practices, and how they support faculty-designers. These instructional design skills directly affect student-learning outcomes (Information Resources Management Association (IRMA), 2011). According to Richey and Klein (2005), design, development, and evaluation of instructional products and programs are the basis of instructional development; however, many institutions offer online courses developed by faculty-designers who have not attained skills and competencies to develop online courses.

Problems related to effective course development are experienced by faculty-designers (e.g., lack of awareness about technology; lack of sufficient formal preparation to perform tasks required of them) (Carliner & Driscoll, 2009); hence the importance of identifying competencies and skills becomes more apparent. Without required training or guidelines, online course developers find it difficult to incorporate meaningful interactions (Hirumi, 2002), yet that is a competency that is often required of faculty who are tasked with creating courses regardless of prior experience (Batts et al., 2010). Identification of current best practices could lead to support for common design problems, which may inform future research for devising improved design practices. The

research for this dissertation used a sequential explanatory design approach. According to Creswell and Plano Clark, "The sequential explanatory design is the most straightforward of the six major mixed methods designs. It is characterized by the collection and analysis of quantitative data followed by the collection and analysis of qualitative data" (2007, p. 178). Each research question is geared toward gathering specific types of information on the same aspect of the development phase. In the quantitative phase of the study, the purpose of the first question was to ascertain course development competencies used; the purpose of the second question was to determine best practices in course development through how faculty-designers' creation of online course materials differed from development of traditional course materials. The study also identified best practices that faculty-designers who lack prior training in instructional design should use when developing online courses.

Research Problem

Faculty-designers are responsible for creation, development, facilitation, and management of online classes, often without formal preparation (Carliner & Driscoll, 2009). Competencies and skills for faculty-designers developing online courses are embedded in instructional design theories related to content expertise, understanding education, and instructional design (Reigeluth, 2012). These ideas are associated with conceptualization of how learning theories support adult learning. Professional and scholarly communities have not yet completely identified required skills and competencies required for creating online courses by faculty-designers.

This study provided insights regarding faculty who often lack instructional design expertise and are assigned the task of creating courses (Batts et al., 2010). Identification

of skills and competencies that support faculty-designers should benefit faculty and higher education institutions as they strive for quality online learning.

Research Questions

In order to examine instructional development skills and competencies for postsecondary faculty-designers, this study investigated the following quantitative research questions:

1. What course development competencies do higher education faculty-designers deploy when developing online courses?
2. What best practices do faculty-designers demonstrate when developing online courses?

The research tested the following null hypotheses: Higher education faculty-designers do not use instructional design competencies when they develop online courses and higher education faculty-designers do not always use best practices when they develop online courses.

This mixed method research study also addressed the following qualitative questions in determining levels of competency required for faculty-designers and their training needs:

1. In what ways do faculty-designers develop online materials differently from classroom materials for face-to-face use?
2. What special skills or training will enable them to address the lack of quality in the designing of online courses?

A mixed methods research design was selected to gather quantitative survey data pertaining to skills and competencies possessed (or not) by faculty-designers, and

qualitative data was gathered to explore reasons for development processes used. In the first phase, the researcher conducted a survey adapted from Larson (2004).

Nature of the Study

The research methodology used for this study was a sequential explanatory design approach (Creswell & Plano Clark, 2007), where quantitative data are gathered and analyzed, followed by collection and analysis of qualitative data. The Cochran's Q test methodology was used to identify statistical outliers in the data. Cochran's Q test samples provided a method for testing for differences between faculty-designers of two universities and matched sets of frequencies or proportions.

In the qualitative research process, interviews of five instructional designers from two universities were conducted. During the interviews, faculty-designers were asked to provide details on methods they used to create online courses. These responses helped determine how faculty-designers without training in instructional design acquired skills to create online courses.

Research Justification

Higher education is a significant avenue for personal growth and social mobility; demand for higher education has increased many fold over the past several years (Anderson, 2008). Trends in modern times, especially due to immense possibilities of technology, favor a shift from conventional classrooms to virtual learning environments (Allen & Seaman, 2011).

Two trends influence increasing demand for online learning (Allen & Seaman, 2011). The first trend is growth of online learning as shown by increasing numbers of students enrolling in online courses. The growth in online learning led to the second

trend, which is enhanced demand for faculty-designers with skills and competencies for creating quality online courses. The dearth of skilled faculty-designers of online courses has compromised quality of online education (Franklin, 2002). The situation warrants a critical examination of challenges presented by these two trends. Scholars such as Weston (2009) noted the absence of guiding principles for faculty-designers. As online learning systems continue to emphasize reliable and viable approaches for imparting education, faculty need to use skills based on an understanding of instructional design theories and principles (Allen & Seaman, 2011). Skills are crucial in developing effective learning materials that enhance learning as well as quality and accessibility of online courses.

Practical Implications

Identification of skills, competencies, and best practices could help increase awareness of how to develop quality online courses and add to the knowledge base of the instructional design field. Effective online course design could lead to improved e-learning opportunities for students. Knowing methods used by faculty-designers could help other faculty members with little or no prior experience in online course design or development assist in the creation of online courses.

Contributions to the Field

The study contributed to the field of instructional design theory in the context of designing and developing suitable online courses using skills, competencies, and best practices for effectively supporting and enhancing student learning. Regarding e-learning specifically, Chin and Williams (2006) noted that there is no overall unifying theory that can be called e-learning theory; this study may provide useful insights about

design and development aspects of online courses that could contribute to development of such a theory. Chen (2007) noted the lack of guiding principles, especially for designing intensive online courses. The results of the study may help to better understand interaction patterns, roles, strategies, and tools, and help devise improved policies for future faculty-developed online courses. New models and design approaches are particularly needed that take into account instructional time constraints, skill development, and online learning environment characteristics. In short, the results of this study could make useful contributions to the field of education that could have future impact on the success of online learning.

Significance of the Research

As online teaching continues to demonstrate an approach that is valid and viable for adult learning a need still exists for faculty to use skills based on basic theoretical understanding of instructional design to develop effective learning materials. Faculties often lack instructional design expertise and yet they develop courses (Batts et al., 2010). An important contribution is to identify skills and competencies that support faculty-designers in creating effective online learning opportunities.

Skills and competencies for faculty-designers are necessary in an era where many institutions are shifting toward online education. The validated skills and competencies enable faculty-designers to develop courses that are adaptable and accessible through online platforms. Specific skills and competencies are crucial in increasing knowledge about creating quality online course content. Awareness of skills, competencies, and best practices used by faculty-designers may help other faculty members develop online

courses. This research enabled continued consideration of online faculty and skills and competencies required for developing high quality online learning opportunities.

Assumptions

One of the assumptions built into this study was that faculty-designers follow best practices and use course development skills and competencies known by them at the time when developing instructional materials for online courses, as inferred from a close reading of Seaman and Allen's (2011) analysis, as well as an interpretation of Weston's (2009) results from prior research. The study was also based on the assumption that faculty-designers who responded to the survey had prior experience developing instructional materials for conventional, face-to-face courses, which was later confirmed during the interviews. The faculty-designers who chose to participate in the study therefore likely possessed some prior experience in instructional development, pedagogic skill, and course design. A third assumption built into the study was that there was a need to determine what skills faculty-designers most frequently used to develop online courses and what limitations they faced.

Limitations

Data from different contexts is beneficial when analyzing experiences of faculty-designers designing online courses, and this was a deciding factor in using a mixed methodology approach. Diverse experiences can identify recurrent themes useful in drawing conclusions. Experiences, skills, as well as competencies of faculty-designers developing instructional materials for online courses provided a variety of data, although all participants were faculty at one of two higher education institutions. Though this research focused on two institutions and cannot necessarily be generalized, the findings

may be informative for other institutions. This research focused on faculty-designers with no prior training in course design. The primary limitation of this study was the small sample size of potential participants in the two institutions.

Data Collection

The researcher sent an open email to professors teaching online classes at the two universities included in the study. The online survey was made available for a two-week timeframe to give respondents time to complete it. Surveys were available for two weeks with an e-mail reminder sent to all possible participants after the first week. The researcher used an online survey tool called SurveyMonkey and data was exported to an Excel spreadsheet for aggregation and analysis.

The second stage of the study was qualitative interviews. Interviews were recorded with permission to ensure that all points made by interviewees were documented and available for consideration in analysis. Electronic copies of the interview transcripts were e-mailed to each participant for participant verification of accuracy.

Definition of Terms

Best practices

Best practices in online courses can be understood as the principles and ways tutors or teachers or facilitators and other teaching professionals adopt for "effective online teaching" (Hill, n.d., p. 2).

Competency

A knowledge, skill, or attitude that enables one to effectively perform activities of a given occupation or function to the standards expected in employment (Boise State University, 2013). While many definitions of disciplinary competency exist, it is

generally accepted that competencies are more than knowledge and skills. “It involves the ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context” (Organization for Economic Co-operation and Development, n.d., p. 4).

Faculty-designers

A standard definition is lacking in the literature. For purposes of this research, faculty-designers are professionals in the education field who develop and teach online courses and who use “information and media” (Molnar & Armenatno, 2006, p. 2) to manage projects and facilitate group discussions. In this study, faculty-designers included teachers, facilitators, and lecturers.

Instructional design

Instructional design is a systematic and reflective process of translating principles of learning and instruction into plans for learning (Smith & Ragan, 2005) and instructional materials, activities, information resources, and evaluation for creation of instructional experiences.

Instructional design competencies

Instructional Design Competency (IDC) can be defined as the “knowledge, skill, or attitude” that makes an instructional designer capable of effectively practicing his or her profession (Instructional Design for Online Learning (IDOL), 2008, p. 6). IDCs are divided into the following five groups that were used in the survey: professional foundations, planning and analysis, design and development, evaluation and implementation, and management (ibstpi, 2012).

Instructional media

Instructional media are materials "use[d] to teach and students use to learn," including print and digital textbooks and other supporting materials (Online Learning Definitions Project (OLDP), 2011, p. 6).

Mixed method

A research method involving the use of both quantitative and qualitative research designs used simultaneously or sequentially (Creswell, 2003).

Online courses

Online courses can be defined as any educational course that an institution offers "over the internet" (OLDP, 2011, p. 7).

Chapter Summary

Rapid growth of online education has increased educational accessibility to students around the world. More students are able to pursue higher education at their convenience because of the flexibility of the online internet-based platform. As the numbers of students engaged in online learning continues to grow, so has the demand for professionals who have skills and competencies for creating quality instructional content for online courses. Professionals considered for this study included instructional designers, administrators, and faculty-designers. Shifting focus from content to online learners requires faculty-designers qualified to develop online resources.

At the time of this study, faculty-designers often develop instructional materials without prior training in online instruction development. Chapter 1 discussed the research problem and underscored increasing incidents of faculty-designers creating online courses, while also posing questions that guided the research; the study's limitations and

assumptions were also clarified. Chapter 2 presents a literature review of expected skills and competencies of faculty-designers and discusses theoretical and conceptual frameworks underpinning development of instructional materials for online courses. Chapter 3 describes methodologies used to conduct this research study, including research design, sample population and size, data collection techniques, and data analysis. Chapter 4 presents research findings. Chapter 5 presents analysis and conclusion, best practices recommendations for online teaching, and implications for future research.

CHAPTER 2: LITERATURE REVIEW

Introduction

This literature review provides a contextual framework for this study and serves as a development platform. It also provides an overview of some of the studies that have been done on instructional development skills and competencies for post-secondary faculty-designers developing online courses.

Online education offers convenience and flexibility for students to access learning materials from any location at any time suitable for them (Schwier, 1995). With advances in technology, distance education is emerging as a formidable opponent and could potentially even the playing field in terms of educational access (Collins, McKinnies, & Collins, 2010). Online courses have the potential to transform education as educational materials are integrated with technology. The rapid evolution of information and communication technology has brought significant changes, especially in distance and online education (Arinto, 2013). Many educational institutions around the world are offering conventional courses as well as online courses. Considerable literature was identified about growth and development of online education, but little on qualifications of faculty-designers (Carroll & Burke, 2011).

Since the 1990s, educational institutions have been taking advantage of online technology to provide students with both face-to-face and virtual course materials. This chapter explores how these courses are being developed and whether they are being shown to be effective. Online courses often have compromised quality, and this may be due to untrained faculty-designers. This highlights the need for identifying skills and competencies required for online course faculty-designers. Online education practices use

a wide range of technology, course materials, and communication tools, which affect learning outcomes in different ways (Lee, Dickerson, & Winslow, 2012). The competencies of course developers are crucial in online education. Sections of this chapter are devoted to competence of course developers, best practices, and the significance of online courses in higher education.

Growth of Online Courses in Higher Education

The availability of online courses and the number of students who access them has been increasing since the 1990s, partly with the integration of information and communication technology with online applications. Online courses are flexible and accessible, but their delivery poses several challenges as students interact with course content, tests and assignments, evaluation of learning styles, and levels of virtual communication rather than in person with an instructor (Bolliger & Wasilik, 2009).

Demands for online and distance learning in higher education have increased annually since the mid-1990s. The number of higher education institutions that offer online education has grown from 33% in 1994-95 to 44% in 1997-98 (Lewis, Snow, & Farris, 1999, p. 47). By 2008, approximately 66% of higher education institutions offered distance and online learning courses with public institutions offering online course outnumbering private institutions. By 2008, approximately 89% of public higher education institutions offered online education and nearly 58% of private institutions in the United States were engaging with online education platforms (Suarez-Brown, Grice, Turner, & Hankins, 2012). A report about online education in the United States of America by Allen and Seaman (2011) arrived at similar conclusions.

Growth in online course enrollment is currently greater than enrollment for on-ground courses in conventional higher education institutions, which has given rise to the need for skilled faculty designers to develop online courses (Salmon, 2004). To meet this demand, universities and colleges tend to develop online courses without prior and sufficient research or preparation—either for the institution or for the faculty who will be taking on the tasks of creating online courses. As a result, modern pedagogy in online teaching has been undermined by a lack of skilled faculty-designers. This study explored possible reasons for this phenomenon.

Online Learning

Globalization has created a need for educational advancement. Most institutions offer both conventional and online courses. Online course are offered in virtual environments where course content and learning activities are integrated into an online platform. While experiencing continued growth in online education, learning systems supporting online education have encountered several challenges, including faculty acceptance and an apparent lack of trained faculty-designers. Others have identified difficulties in accessing resources and cost as drawbacks to online education (Chen, Barnett, & Stephens, 2013).

Online courses have great potential for facilitating access to education to a large segment of the population seeking additional education, but due to limitations of learning systems and faculty prepared to create online courses, many institutions still cannot take full advantage of the potential of online courses. One of the limitations is the need to define the process. This definition is extraordinarily important to the online course developer—perhaps even more so than to the traditional class developer. All too often,

the faculty member tasked with the job of developing online courses must rely upon his/her past experience and/or perceptions, which did not include involvement in online learning activities. Since students are not 'seen' or integrated within online classes in the same manner as in-person students, the accuracy of perceptions about developing courses is limited and often results in flawed inferences being drawn with respect to the way in which a process should be carried out. Finally, as with a traditional classroom, integrating best practices within the field, being aware of current knowledge, and drawing useful inferences from the research literature must not be overlooked.

Understanding skills and competencies required by faculty-designers can improve online courses (Smith, 2005). Instructional design theory can help faculty-designers develop education systems focused on student needs. The benefits of well developed courses and a robust learning system are that students will be satisfied, faculty will gain necessary skills, and the institution will be in a better position to meet its goals and objectives (Chang & Smith, 2008).

Institutional Cultures

The institutional culture plays a critical role in the success of both traditional and online courses. Institutions that have decentralized decision-making may more easily develop online courses due to their ability to take risks and embrace new technological developments (Oblinger & Hawkins, 2006). Consultative decision-making ensures that faculty members are involved in development and improvement of online courses, which creates a sense of ownership of online projects.

Institutions may outsource online course design and development where contracted vendors develop, host, and support online platforms for the institutions, recruit

faculty and support staff, provide support services, and establish recruitment processes. Such outsourcing may not be profitable and may result in conflict over intellectual property. Outsourced courses may not be fully integrated into the organization, reducing online course effectiveness (Oblinger & Hawkins, 2006). Centralized and rigid institutions must provide systems that involve faculty members in development of course content, learning activities, and technological systems to ensure success of online courses.

Quality of Online Courses

Many studies (Hénard & Roseveare, 2012; Kampov-Polevoi, 2010; Wright, 1997) suggest that course quality depends on the following five elements: objectives, adaptability, content, faculty, and student support. Online course faculty-designers must ensure that both online and conventional classroom students have equivalent training experiences (Oblinger & Hawkins, 2006). Online courses must adhere to the quality standards relative to the organization as well as course goals and objectives. An institution that caters to both traditional and online courses tends to expand the range of student diversity from typical undergraduate students to working adults. Organizations must have courses that align well with their educational goals. Courses must meet institutional requirements and adapt to their organization's teaching techniques and learning activities (Carroll & Burke, 2011).

Online courses have to ensure academic development of students at specific timelines and at pre-established levels through regular assessment, although this is beginning to change from time-based to competency-based models (Carroll & Burke, 2011). Online platforms must accommodate exams and assignments, facilitate

discussions, and allow interaction among students as well as faculty and students. Students and faculty must be able to post feedback and comments.

Under these circumstances, an effective faculty-designer is crucial for successful development of online courses. Contents of online and conventional courses are similar, but the faculty member applies different teaching techniques in different environments. Faculty must understand online platforms and work with supportive web designers and developers (Carroll & Burke, 2011), which is a change from the 'solo' processes used by traditional course teachers. Adequate equipment and software should also be available to faculty to help ensure quality online learning.

Online courses involve interactions between students and lecturers, faculty, and tutors. Students require appropriate technology to enhance learning experiences. Online or face-to-face orientation sessions assist new users of online platforms (Carroll & Burke, 2011). All services offered by the university must be available online, including library, bookstores, admission requirements, enrollment processes, student accounts, resources, financial aid, and career services. Additional support with online courses can encourage disadvantaged students to continue their learning. Sufficient support ensures that online students are part of the student community and may increase competitive advantages for institutions.

Support in Developing Online Courses

The success of online courses depends on relationships of faculty, student, information technology (IT) experts, as well other personnel (e.g., administrative and marketing staff) who are tasked with supporting day-to-day operations of the institution, such as by updating student records, developing timetables and course schedules, and

processing student applications and requests. Growth of online courses, advancement in information and communication technology, globalization, modernization, and increasing competition among education institutions are key factors in the development of online education.

An analysis of factors reveals that core levels of competence and interest have a direct effect upon faculty-designers' skills and competencies. One of the most relevant factors is training and education about developing online courses. In tandem with this is the emphasis that the institution places on design processes and curriculum development. Organizational structure, ramifications, and benefits of developing curricula also have a considerable impact on the way a faculty-designer approaches the development process. The expectation by an institution that faculty will adopt roles related to faculty-designer raises the challenge of successful course development.

Challenges of Developing Online Courses

Several key challenges exist when developing online courses and many correlate with challenges found in developing traditional classroom curricula. Many faculty and staff tend to compare online and traditional learning as if they were the same, when each setting is unique. Rather than comparing challenges in developing online courses with traditional course development, the following section concentrates on ways in which online courses exhibit difficulties and core challenges.

Instructional Design

A key factor of online education is integration of learning activities in a virtual environment, which renders pedagogy and technology as important factors in online course development (Salmon, 2004). Challenges to online education include issues such

as the following: complex interactions among students and faculty, faculty skills and adaptations to changes, student disciplinary issues, and development costs (Bolliger & Wasilik, 2009).

Interactions among students and between faculty and students in a virtual environment have been shown to improve students' critical thinking, as well as their understanding of and reflection on course content (Brindley, Walti, & Blaschke, 2009). Online courses can attract students from around the world, which can create challenges related to interactions limited by language, time zones, cultural barriers, and different learning styles. Facilitators must engage all students, evaluate learning development, and meet needs of each student regardless of diversity and disabilities. Further research about student facilitator interactions will benefit professionals involved in creating and implementing online learning (Chen et al., 2013).

Faculty-designers

Faculty-designers are an integral part of development of most online courses (Bolliger & Wasilik, 2009). According to Weston (2009), faculty-designers perform tasks beyond developing instructional materials and directing online learning. Faculty-designers also serve in the roles of facilitators, guides, confidants, motivators, provocateurs, and role models. Learners look to them to provide direction on what will be learned, time for learning, learning materials needed, and activities involved in the learning process. Findings from Weston's (2009) research helped understand theoretical frameworks underpinning instructional design theory underlying education and training systems in the post-industrial era, which tend to be more customized and learner-centered. Shifting from a time-based system to an attainment-based system also has been

shown to maximize learning (Reigeluth, 2012). The use of technology to teach and deliver learning material while ensuring achievement of institutional and learner goals marks a difference between a conventional and a virtual classroom (Oblinger & Hawkins, 2006; Carroll & Burke, 2011). Faculty-designers must be capable of enhancing learning experiences and ensuring that learning activities are integrated online (Carroll & Burke, 2011). In many cases, faculty-designers have not been trained to develop online courses since their prior teacher training probably did not include modern pedagogy or technology. Faculty satisfaction is affected by competence and personal achievements, student behaviors, and diversity in addition to institutional structures, workload, and motivation (Bolliger & Wasilik, 2009) and lack of success in online teaching and course development can lead to less faculty satisfaction or pride in their student interactions.

Faculty-designers create, implement, and manage course contents. Many lack the required skill set to integrate course content into the online setting. Standards for course-development qualification for faculty-designers in online education do not seem to currently exist, in that an extensive search of the literature did not result in clear standards supported by the literature or professional organizations. The lack of consistent standards reduces the potential for faculty-designers to be able to develop quality online courses.

Instructional Designer

In general, instructional designers are individuals trained in principles of instructional design and development of learning materials, including those for online courses. More specifically, an instructional designer "invents, conceptualizes, or creates concrete products or materials for instructional or educational purposes, and is responsible for the educational, instructional, or pedagogical aspects of the product"

(Visscher-Voerman & Gustafson, 2004, p. 70). It is a specific subset skills held by instructional designers that will benefit faculty-designers as they develop online course materials and learn ways to manage student issues in online settings.

Student Issues

All education systems must meet students' learning needs to achieve institutional goals. Institutions and faculty members implementing online learning must understand student diversity and facilitate interactions among students that create an environment conducive to learning and to foster student satisfaction. Students must understand course content and technology, and be able to integrate them into learning activities.

Similarly, student satisfaction depends on learning experiences (Bolliger & Wasilik, 2009). Student satisfaction can be influenced by the lecturer, technology and interactions, communication channels, management issues, and course platforms. Hindrances to student satisfaction include management and administration, academic skills and education system, personal attributes, interactions with other students, access to University resources and services, time management, and technology. A direct correlation has been identified between student satisfaction and job satisfaction of faculty members creating curriculum; without the former, the latter is impossible (Bolliger & Wasilik, 2009).

Bolliger and Wasilik (2009) identified several challenges to online learning, including lack of discipline or regularity in completing course requirements and inability of institutions to eliminate cheating. Studies have indicated that cheating and plagiarism often escape detection by examiners under most circumstances, including both online and

traditional classroom environments. These are areas that deserve further study and reflection.

Cost

In addition to challenges presented to faculty-designers creating and implementing courses are challenges presented by new costs to institutions beginning to implement online learning systems. Development of online courses requires materials, time, and staff (Bolliger & Wasilik, 2009). Online courses might be convenient for students, but can be costly for organizations (Chen et al., 2013). Institutions venturing into offering online courses must evaluate both startup and maintenance costs (Morgan, n.d.). While it is true that conventional classrooms and online platforms both involve cost requirements, investments in new and dynamic technologies can be expensive. Examples of costs associated with online education include the following: initial capital for developing content, acquiring online platform and integrating information into that platform, maintenance, staff recruitment, production cost and delivery, and expenses incurred in hiring technological and instructional design staff or expertise. Maintenance costs vary and may include overtime, support, faculty training, administration, and teaching (Morgan, n.d.). Institutions have to invest in infrastructure and technologies that are compatible with online systems and can support constant traffic to the learning platform. Other technology costs include computer systems for faculty, human resources, office, telephone cost, and hosting. Costs can be substantial just to launch the learning system. Along with costs comes the need to develop processes for developing online course materials.

Development Processes for Online Courses

Most faculty members who take on tasks of developing online courses undergo instructional development tasks by developing course materials and strategies (Baran, Correia, and Thompson, 2011). Working as instructional developers of online courses is a demanding endeavor; yet the skills and the careful attention to course development helps dictate quality of online education. A well-designed course requires coordination between individuals with expertise in subject matter, instructional design and development, and technical aspects of online learning.

Pickett, Shea, and Fredericksen (2001) described course development processes that a university system in the northeastern United States currently uses. Faculties re-think traditional course structure and create new learning activities and objectives that work in the e-learning, asynchronous context. The process outlined by Pickett et al. (2001) has the following seven main steps:

1. Reflecting on the course and conceptualizing it anew.
2. Creating orientation programs, which include welcoming messages, contact information, course overview, required reading material, the syllabus, learning activities, methods of evaluation, and teacher's expectations.
3. Dividing the course into modules. Modules are chapters of content.
4. Creating learning activities for each course module, taking into consideration that online learning is different from face-to-face learning.
5. Walking through the course and evaluating it. Both internal and external evaluators can assess the work together or independently.

6. Preparing to teach.
7. Evaluating the completed course. (p. 10)

The last step occurs after the first learning cycle. At this stage, input of both students and designers triggers the process again in revision cycles. The iterative process is important as it attempts to outline necessary competencies for designing online course content. Many similar processes have been developed; all processes need a solid foundation in instructional design and development theory and models.

Instructional Design Theory

The overarching goal for online courses is to make education available to a larger segment of the population, meaning that the system needs to be learner-focused as much as possible. Instructional design theories take into account students' learning requirements among other things. Instruction design is based on research theories that indicate conditions for development, improvement, execution, assessment, as well as supervision of learning environments, activities, and resources that ensure effective learning in organizations (Whitmyer, 1999). Theories cover instructional events, analysis, planning, building, implementation, and evaluation (Reigeluth & Carr-Chellman, 2009).

Instructional design theory is related to "how to sequence material and activities using various strategies in order to achieve desired or targeted outcomes (Spector, 2012, p. 96) or aspects related to "designers themselves and the processes they use" (Richey & Klein, 2005, p. 3). This notion has been validated by studies that "focus on a given design, development, or evaluation model or process and they often involve constructing and augmenting unique design models and processes, as well as identifying those conditions that facilitate their successful use" (Richey & Klein, 2005, p. 3). This type of

research emphasizes the support required for learning as a result of designing unique instructional models.

Higher education institutions have tried to overcome geographical barriers through online education (Brindley et al., 2009). Student diversity differs in terms of nationality, religion, cultural background, gender, and quality of education systems (Melsom, 2010). Faculty-designers consider elements such as students' personal attributes, learning activities, and feedback when developing an online course. Instructional design also considers learners' tempos, content requirements, and institutional standards and goals. Instructional theories offer a good foundation for development of online courses. Development and analysis of instruction, designing teaching and learning methods, development of learning systems, implementation, and evaluating outcomes also need to be taken into account (Whitmyer, 1999); similar core elements have been supported by Melsom (2010).

In summary, core challenges presented and analyzed thus far represent key concerns that educators face when developing online courses and ensuring that the curriculum meets anticipated student needs and delivers quality course content. The following section focuses on psychological principles that define and support instructional design and development processes.

Psychological Principles that Guide Development of Online Courses

Previous studies indicated that faculty members and faculty-designers tend to not be sufficiently trained to design an instructional online course model (Chang & Smith, 2008). The American Psychological Association (APA) (2012) links effectiveness of online education with principles of learner-focused education. Many studies suggest that

effective promotion of education needs to focus on different learner attributes, such as cultural diversity, prior education systems, backgrounds, skills, capacities, and talent (Brindley et al., 2009; Melsom, 2010; Chang & Smith, 2008). Instructional design and development principles also focus on content and methods of learning. Faculty-designers are not regularly apprised of psychological principles when developing online learning materials such as the following: characteristics of learning activities during the course training, course objectives, development of content, critical thinking, analysis, learning framework, personal attributes that affect learning and ability to learn, influences of personal attributes on the effort to learn, influence of development on learning, social and group influence in learning, learners' diversity, learning activities and diversity, acceptable standards, and learners' assessments (Chang & Smith, 2008; Reigeluth & Carr-Chellman, 2009; Watson, W., Watson, S., & Reigeluth, 2008) . While faculty-designers may have considered some of these principles when preparing face-to-face teaching, the implementation of the principles tend to differ with online delivery.

Two major components in online learning environments are students and faculty (Bolliger & Wasilik, 2009). When needs of learners are met, faculty gain experience and competence, while also enabling attainment of institutional goals (Chang & Smith, 2008). Effective online learning systems allow flexibility in terms of time and location, evaluation of student weaknesses and strengths, and enhancement of student-faculty and student-student interactions. Effective online learning systems also facilitate assessment of academic development of students. Learners are sometimes afforded opportunities to participate in development of online training programs; their needs and diversity are respected apart from recognizing them as stakeholders in learning activities (Watson &

Reigeluth, 2008). The outcome of learner-focused courses can be realized in terms of qualified and satisfied learners. Enabling integration of these components requires trained faculty-designers who understand principles of online learning and course development.

Role of Faculty-Designers in Higher Education

In order to outline the role of faculty-designer in online course development, it is imperative to begin by defining the term, faculty-designer. Generally, a faculty-designer is one who "invents, conceptualizes, or creates concrete products or materials for instructional or educational purposes, and is responsible for the educational, instructional, or pedagogical aspects of the product" (Visscher-Voerman & Gustafson, 2004, p.70). Theoretical bases for designing online courses rest in an understanding of content expertise, education, and instructional design (Reigeluth, 2012). Development of skills and competencies for faculty-designers is pivotal to the success of online learning in higher education (Batts et al., 2010). Research related to issues that some faculty of online or distance courses in higher education often encounter have generally focused on technology that faculty frequently use in online education courses (Evans, 2004; Newton, 2003; Saleh & Lacey, 2004; Santilli & Beck, 2005, as cited in Albi, 2007). Technology has been researched in numerous studies. While technology is an important aspect of quality online courses, this study focused on another important aspect which is necessary skills and competencies for faculty-designers. Without the necessary skills and competencies, the use of technologies will be substandard as well.

According to Parrish, instructors and instructional designers direct online learning and also serve as guides, facilitators, confidants, provocateurs, motivators, and role models (2009, p. 14). Instructors and instructional designers require specific skills and

competencies to carry out tasks and also require ongoing support to maintain the online learning environment. It is necessary to understand the theoretical context supporting the need for faculty-designer skills and competencies, as well as how the skills and competencies are used to create learning materials.

Competent online faculty may serve in roles of content facilitators or subject matter experts. Learners also look to them to facilitate learning processes. Faculty-designers are technologists because if technical problems arise during learning, faculty tend to be the first point of contact for students. Underlying these roles are the skills and competencies to serve as course developers. Faculty-designers determine what will be learned, at what time, and what learning activities will be included, along with spontaneous teaching and problem solving to help learners continue to learn. These roles differ from the roles of instructors, as described in the next paragraph.

Instructors assume roles of administrators by managing learning resources, discussion boards, and student performance. Instructors also assume the role of assessors by administering tests, analyzing them, grading learners, and evaluating courses and programs. Finally, instructors work as researchers by examining validity and accuracy of learner's ideas, emerging course issues, as well as new learning and teaching methods (Darling-Hammond, Hammerness, Grossman, Rust, & Shulman, 2005; Goodyear, Salmon, Spector, Steeples, & Tickner, 2001). As instructors take on roles of faculty-designers, they face a need to acquire basic skills that help them be effective developing online course content.

Institutions influence their faculty members. As institutions continue to rapidly implement online courses, faculty often hold dual roles of faculty and designer.

According to Oliver, Kellogg, Townsend, and Brady (2010), faculties holding dual roles rarely have formalized instructional design training. Oliver et al. (2010) described the increasing numbers of online courses developed by faculty-designers, and explained that while the "rationale for in-house development may have precedent and even merit, content expertise alone by faculty-designers is insufficient" for designing effective instruction (Oliver et al., 2010, p. 57). Faculty-designers face new challenges when constructing an online course and planning student activities and interactions. In the recent past, faculty began to take on roles as faculty-designers for developing online course material.

The Emerging Role of Faculty-designers

Faculty-designers are important in the process of design, development, administration, and delivery of online courses. In most situations, development of online courses involves more than one person; the faculty-designer benefits the team by being a special combination of instructional developer and subject matter expert. De Vries (2007) emphasized the need to involve subject matter experts in the process. At times, it is more appropriate for faculty-designers to gather learning resources, develop course outlines and learning activities, and administer them online, than an instructional designer who may have little knowledge of the subject. For successful integration of faculty-designers in the development process, De Vries (2007) suggests that instructional designers train faculty-designers and provide support for software and tools used, as well as making the best use of time and skills for everyone to ensure sustained motivation.

A faculty-designer "invents, conceptualizes, or creates concrete products or materials for instructional or educational purposes, and is responsible for the educational,

instructional, or pedagogical aspects of the product" (Visscher-Voerman & Gustafson, 2004, p. 73). The theoretical basis of online course development is an understanding of content expertise, education, and instructional design (Reigeluth, 2012). Theories associated with ways in which learning theories support learning need full exploration. When faculty-designers gain in-depth knowledge of the course curriculum required for students in the attainment of learning objectives, they are able to develop appropriate course content. While designing curriculum and participating in course development, they are also the important link for keeping the organization's goals in mind.

According to Parrish (2009), instructors and instructional designers do not just direct online learning. It is necessary to understand theoretical contexts supporting skills and competencies apart from knowing how skills and competencies are used to create learning materials. Faculty-designers appreciate students' difficulties when in person interaction is missing and may be able to make content easier to understand. Competent online faculty may also serve as content facilitators or subject matter experts, technologists, and course developers. These roles differ from roles of instructors (administrators and researchers) as described above (Goodyear et al., 2001). As instructors become faculty-designers, they need to learn how to effectively develop online course content.

Faculty-Designer Competence

This study identified information used by faculty-designers who lacked prior training and experience in developing online courses. In many situations, professionally trained designers consider learners' characteristics, time constraints, institutional resources, skills, and the characteristics of online platforms. (Charalambos, Michalinos,

& Chamberlain, 2004) Faculty-designers are not trained to consider all these factors. Direct connections exist between instructional design practice and competency of instructional design. According to Sims and Koszalka (2008), instructional competencies represent knowledge, skills, and attitudes vital to effective design of instruction.

Instructional Development for Faculty-Designers of Online Courses

Most higher education institutions that offer online courses rely on faculty members to create appropriate materials and activities for online offerings. Relevant development programs that would help them learn to perform the tasks efficiently and effectively do not always accompany this added responsibility. Skills may include instructional development, understanding of instructional design theories and models, online pedagogy, learning management systems (LMS), using e-mail and discussion boards, among more complex management skills that encourage online student and teacher interactivity (Wilson & Stacey, 2004).

One example of faculty development was documented in a case study at the State University of New York (SUNY) which involved Learning Network (LN) course design processes carried out by faculty-designers who were new to online course development (Pickett et al., 2001). An instructional design/development partner worked with faculty through the first course design and delivery cycle. To date however, few institutions of higher learning provide professional development for the faculty-designer role.

Contribution to Existing Theories

A vast array of instructional design theories have been developed and tested to help support online course development. It is not the goal of this literature review to review them all, but two will be highlighted in this section.

Instructional event theory is concerned with content and instructions (Reigeluth & Carr-Chellman, 2009); the theory helps articulate what a piece of learning should look like, and the theory addresses ideas for choosing learning methods and ideas for when to use them. Another early theory relating to instructional design for online courses is Keller's (1988) four-step instructional design process, which provides basic steps for initiating a development project, which supports this study's focus guiding principles for developing online courses as it relates to faculty-designers. Implementation of instructional design theory and principles will enhance interactions during learning processes and ensure online students have more meaningful learning experiences. In this way, this study will contribute some information to existing theories.

Several theories exist about development of learning experiences. These theories are guides to developing interactive and collaborative education, which incorporates stakeholders such as instructors, learners, and institutions (Watson & Reigeluth, 2008). Instructional design theory guides professionals developing online courses in making the courses meaningful to students and institutions (Melsom, 2010).

According to Anderson (2008), no learner-focused theory had yet been devised for online education. Important principles for faculty-designers in development of online courses were and are still almost non-existent. Information from this study may provide insights that could lead to development of online learning theory and principles for developing online education by faculty-designers. To help achieve these goals for the study, a mixed methodology was selected.

Choice of Mixed Methodology Research for this Study

Mixed methodology is the combination of quantitative and qualitative research methods used to understand a problem or question (Creswell, 2008). The process for this study was to first collect quantitative data using a survey and then to follow up with a qualitative interview of faculty-designers who responded to the surveys to obtain a better view of the role of faculty-designers. This type of research is appropriate when research questions, suggest that both quantitative and qualitative data are likely to provide superior research findings and outcomes (Johnson & Onwuegbuzie, 2004). The implementation of the mixed methodology approach will be further explained in Chapter 3.

Chapter Summary

This chapter presented information about faculty-designers lacking prior training and experience in developing online courses. This literature review explored the general topic of instructional design, including an overview of the growth of online courses in higher education, challenges of developing online courses, instructional design theory, and faculty-designer roles in higher education, a role often adopted by faculty who have little or no training in instructional design but are expected to design their own curriculum and instruction. Chapter 3 examines the specific procedures used to implement the mixed methods research.

CHAPTER 3: METHODOLOGY

Introduction

This study examined faculty-designers and identified skills and competencies that enable them to develop online courses. To conduct this study, a mixed methodology approach allowed exploration of different processes faculty-designers use. The mixed methods approach allowed for a quantitative survey as well as qualitative interviews to take place in order to determine skills and competencies related to faculty-designers and instructional design. Faculty-designers from two higher education institutions were surveyed to determine their instructional design practices and to see if those practices follow standard approaches for creating online courses.

The chosen methodology enabled the researcher to gather views about differences in ways two types of courses (traditional face-to-face and online courses) were developed, as well as to gain knowledge regarding perceptions faculty-designers held about creating online courses. The online course materials from the two higher education institutions used for this study were designed by faculty members who also taught the same content in traditional courses.

Study Purpose

The study sought to identify necessary skills and competencies that may enable faculty-designers to create online courses. Instructional design of online courses directly affects learning outcomes (IRMA, 2011), and the study data provided useful information about faculties untrained in instructional design as well as those who were but wanted to be better informed about creating quality online learning required competencies, best practices, and skills to support faculty-design activities.

This study used a sequential explanatory design approach. According to Creswell and Plano Clark, "The sequential explanatory design is the most straightforward of … mixed methods designs … [and] …is characterized by the collection and analysis of quantitative data followed by the collection and analysis of qualitative data" (2007, p. 178). Each research question was geared toward gathering specific types of information on the same aspect of the development phase, i.e., to understand how faculty members create online courses. In the quantitative phase, the purpose of the first question was to ascertain course development competencies used; the purpose of the second question was to ascertain best practices used by faculty-designers developing materials for online courses and how those practices differ from development of traditional materials for classroom use. The qualitative questions focused on developing online courses and training necessary to produce quality online courses.

Research Questions and Hypothesis

The study investigated the following questions:

1. What course development competencies do higher education faculty-designers deploy when developing online courses?
2. What best practices do faculty-designers demonstrate when developing online courses?

The research tested the following null hypotheses:

1. Higher education faculty-designers do not use instructional design competencies when they develop online courses.
2. Higher education faculty-designers do not always use best practices when developing online courses.

The qualitative questions that the research explored were the following:

1. In what ways do faculty-designers develop online materials differently from classroom materials for in-person use?
2. What special skills or training will enable them to address the lack of quality online course design?

Research Design

The study used a descriptive survey (Creswell, 2008) followed by interviews to determine processes used by faculty-designers and instructional designers to develop learning materials. Quantitative data was gathered using a descriptive survey (see Appendix A) and qualitative data was gathered through the use of structured interviews (see Appendix B).

In this research, "quantitative and qualitative approaches were used in types of questions, research methods, data collection and analysis procedures, and/or inferences" (Tashakkori & Teddlie, 2008). The research followed a sequential design; the survey gathered quantitative data, which was followed by participants willing to participate in interviews.

The survey instrument was constructed based on an extensive review of literature and based on previous surveys (Larson, 2004). The survey created for this study was available online to respondents completing the consent form. The survey was available for two weeks. The survey contained a section where participants volunteered to participate in an interview. The first five participants who provided contact information for interviews were interviewed. Interviews were conducted in person in May 2014 and were recorded using a voice recorder.

While the surveys were still being completed and returned, interviews with the first five volunteers were scheduled. Interviews supported the gathering of data for the qualitative portion of the study; surveys supported the quantitative portion of the research. Both interviews and surveys had equal influence on data. "The interviews permit[ted] us to look for emerging themes from both the survey and from previous interview data, which could then be explored in more depth in subsequent interviews" (Creswell & Plano Clark, 2007, p. 146).

Respondents were requested to rank statements in the survey based on subjective perspectives. Survey forms were coded numerically so personal identification was available only to the researcher. All collected data as well as signed consent forms were stored in a secure location of the researcher's personal office and password-protected computer. None of the information collected or processed will be publicly available. After seven years a technology expert will purge the personal identification and raw data from the research hard drive according to the National Institute of Standards and Technology regarding safe data removal.

Target Population, Sampling Method, and Related Procedures

Target Population

A small sample was used for this study with a focus on two four-year university systems in the northeastern United States, both of which offer traditional and online courses. The two systems were selected to gain insight from faculty-designers engaged in creating and teaching traditional and online courses. Robson (1993) defined a target population as the entire population a researcher wants to study. For purposes of this

study, the target population included 100 faculty-designers who taught both onsite and online courses at two higher-education institutions; a sample was sought from the target.

Sample Size

The sample ultimately responding was 65 participants. Ten participants were contacted for interviews and 5 interviews were conducted. Faculty-designers who did not design online classes were not included in the study). This approach was specifically designed to gain insight from faculty-designers who were engaged in both traditional and online courses.

Setting

The setting for this research was an internet-based survey directed at two institutions of higher learning and conducted via SurveyMonkey and interviews. The researcher sent an open email to professors teaching online classes at the two sites chosen for this research. Respondents had two weeks to complete the survey, with an e-mail reminder sent after the first week. The data from SurveyMonkey was exported to an Excel spreadsheet for aggregation and analysis. The researcher selected the first five participants who completed the section of the survey volunteering to be interviewed. Willing interviewees received a consent form prior to participating in the interviews, which were conducted in a public library at convenient times for the interviewees.

Recruitment

The researcher received a letter verifying that the appropriate school administrator had authorized the proposed research study. After the authorization was provided by the institutions, candidates were invited via a campus-wide email to participate in the study. Participants who signed the consent form were given access to the survey. The researcher

selected the first five participants who completed the section of the survey volunteering to be interviewed; thus participants in the interviews were selected by purposive sampling. The interviewees received a second consent form prior to participating in interviews. Participants were allowed to ask questions prior to participating and were allowed to contact the researcher with any questions before giving consent.

Instrumentation

The online survey was used to determine demographics of the sample, perspectives, and responses about competencies and skills related to instructional design. The inclusion of open-ended questions allowed for narrative responses in the survey. Participants were asked to provide demographic information (i.e., name and contact details) if they were willing to be interviewed.

The survey was field tested with expert panel reviews and feedback from experts. External and independent experts completed the field test. The feedback provided during the field test allowed the researcher to adjust wording for the study criteria and guidelines. Interview questions were field tested by two professors with interview experience.

The interview questions (see Appendix C) focused on detailed experiences about how faculty-designers created online courses, including features that distinguished methods from development of traditional classroom materials for face-to-face teaching. Interview questions were adapted from the work of Gross (2006) and Pesce (2012) with regard to instructional design practice.

Sampling Procedure

The researcher obtained a list of all faculty-designers (100) who taught online classes at the two university systems through appropriate channels of the university. The institutions provided information about years of education experience for online and onsite teaching and the departments to which participants belonged. The survey was designed to be completed by faculty-designers at both universities; emails were sent to all professors deemed qualified by the institution's authorities. If there had been fewer than 20 survey responses, an email request would have again been sent to the participant pool in order to satisfy the minimum of 20 required for the statistical analysis (Bruce, Pope, Daniel, & Stanistreet, 2008). Since more than 20 participated, this step was not needed.

Five participants from each institution were interviewed. This number was based on Creswell's recommendation (1998) to have a sample size of no more than ten participants for interviews in mixed methodology studies.

Interviews were projected to last approximately one hour. Prior to the interview, the researcher provided each participant a Research Participant's Information Document and Consent form, which provided the interviewee with a summary of the study and how data was collected and used. The researcher allowed time for the interviewee to read the document and ask questions about the study. The participant was assured that anything said would be kept confidential. Once the interviewee signed the consent form, the interview began.

Field Test of Quantitative Survey

A survey was sought for use or revision for the quantitative portion of the study, and after a research of the literature and possible tests and measurements, the decision

was made to create a tool based on previous surveys (Larson, 2004). After the initial creation of the survey, the researcher conducted a field test using four professionals not included in the sample but known to the researcher. The four consisted of faculty and instructional designers. Field test participants were contacted through email, and their responses received by email. The group was then asked to give feedback on the questions, terms used, process implemented, and other issues they deemed important. From the field test participants' feedback, the survey was revised for clarification. After changes were incorporated into the survey, the researcher implemented the study and prepared to analyze the data.

Data Collection

The researcher sent an open email to faculty-designers who taught and created online classes at the two sites chosen for this research. Online surveys were made available for two weeks to give respondents time to complete. An e-mail reminder was sent to all possible participants after the first week. The researcher used an online survey tool, SurveyMonkey, and data was exported to an Excel spreadsheet for aggregation and analysis.

Provided the interviewee consented, the interviews were recorded after they agree. This ensured that all points made by interviewee were documented and available for consideration. Interview transcripts were e-mailed to each participant for accuracy verification.

Data Analysis and Procedures

The researcher used Computer Assisted Qualitative Data Analysis Software (CAQDAS) to analyze data collected to add rigor to the analysis. The researcher also

used an online survey tool, SurveyMonkey, and data was exported to an Excel spreadsheet. Descriptive statistics were conducted after aggregating data in order to identify different course development competencies. Key variables selected for analysis were development competencies and best practices. The Cochran's Q (a version of the chi-squared test), was used to test the hypothesis for whether there was statistically significant heterogeneity between survey responses.

The research tested the following null hypotheses: Higher education faculty-designers do not use instructional design competencies when they develop online courses; higher education faculty-designers do not always use best practices when they develop online courses.

The Cochran's Q was designed to examine whether observed variability in the effect sizes lay within the expected range for a common population effect size (Bruce et al., 2008, p. 413). The null hypothesis testing for this study was that there were no differences between variables, instructional design competencies, and best practices. Results were coded 0 for failure and 1 for success. One set was successfully used to determine best practices when developing online courses, but failed on course development competencies for online courses. The purpose of this test was to ascertain whether differences between responses were acceptable and of practical importance with the aim of identifying most common skills and competencies. If similarities were found in the list of developmental competencies, with no statistical difference between them, the hypothesis would be rejected and the null hypothesis accepted. The researcher looked for the extent of similarities or differences between responses.

The statistical tool used was a Q-Sort that ranked statements from strongly agree to strongly disagree. The Q-Sort method was chosen for the quantitative section, since the Q-Sort method is used in qualitative studies where the researcher can quantify subjective opinions; it is considered a combination of the qualitative and quantitative traditions of research (Dennis & Goldberg, 1996). Watts and Stenner (2005) argued it is satisfactory to obtain numbers of statements between 40 and 80 to validate the outcome of the study using the Q-Sort tool. In order to avoid a low sensitivity of the Q-statistic, 20 responses were considered an absolute minimum (Bruce et al., 2008).

For the qualitative portion, the researcher employed the interview technique. Warren proposed, "researchers often choose qualitative interviews over ethnographic methods when their topics of interest do not center on particular settings but their concern is with establishing common patterns or themes between particular types of respondents" (2002, p. 85). Such were the efforts in the qualitative section of this study. The researcher analyzed a series of interviews in order to provide data about research questions designed to investigate how faculty-designers develop online materials differently from classroom materials for face-to-face use, as well as instructional design skills and/or training that faculty-designers had. Qualitative interview responses were analyzed using qualitative data analysis software, NViVo™, to generate themes to assist the researcher in interpreting data and gaining ideas regarding how online courses were created. The researcher transcribed the interviews in MS-Word and processed the data using NViVo™. A benefit of using this tool was that the researcher could highlight key points and key terms and *descriptives* used by interviewees to be recalled for later analysis. The researcher looked for similarities in responses to identify possible important

characteristics of online course development processes and ways in which learning materials were developed.

The variables used in the data were developing and training, which were measured through questions containing quantitative responses. These responses were coded with nominal values 0-5, as explained in the survey. The responses were then recoded with binomial or dichotomous values 0 or 1, where 0 represented no use of instructional design competencies and 1 represented the use of such competencies when developing online courses. The mean competency of the set of responses obtained from each group was averaged; the two means were compared by means of the Cochran Q test.

Ethical Issues

The researcher provided information in the consent form that explained how information would be stored and protected. All required information was disclosed to participants in the consent form prior to asking for agreement to participate in the study. The code of conduct also required the researcher to seek permission from relevant authorities before starting the research. Polit and Hungler (1999) acknowledge that respect for humanity, justice, and beneficence are key drivers for ethical considerations. The study considered these principles to ensure that participants were protected and the study was conducted with integrity.

Denzin and Lincoln (1998) suggested research of this nature must protect privacy of participants and Capella University's Institutional Review Board mandates it. The researcher protected personal information. In 2021, the researcher will destroy all data obtained in the study so that the information cannot be extracted or reconstructed. Deleting survey data only by downloading it from SurveyMonkey will not permanently

delete survey data. As long as an account with SurveyMonkey is maintained, the service retains deleted data in case of accidental deletion; the only way to permanently delete data is by requesting an account cancellation (SurveyMonkey, 2013).The researcher deleted data from the SurveyMonkey account and canceled the account, so the raw data is no longer accessible.

All study data stored on the researcher's computer will be destroyed through a secure deletion utility that will make all data from the study unrecoverable from the hard drive. For electronic data, the researcher will use software products (e.g., Eraser or CyberScrub) supported by the National Institute of Standards and Technology in order to purge data from the researcher's hard drive.

Expected Findings

According to Albi (2007), “Many online instructors do not possess the technical expertise to create course materials in an appropriate format for online course delivery” (p. 12). Formal instructional design training refers to instructional design theories and principles that faculty-designers may have not taken (Williams, South, Yanchar, Wilson, & Allen, 2011). The researcher expected to find that faculty-designers lacked formal instructional design training despite having created online courses. Since one assumption for the study was that participants had prior experience creating courses involving traditional instructional materials for onsite teaching, they were likely to have some skill in instructional development, pedagogy, and basic course design. This assumption was confirmed via findings from the qualitative phase when interviewees confirmed having some experience following a general system of course development, if not specific online course design and development processes. The researcher also expected to find ideas

about which skills and competencies were used and others that were needed to create quality online learning.

Chapter Summary

The study used a mixed methods research methodology and focused on two four-year university systems in the northeastern United States that offered both traditional and online courses. This approach was designed to gain insight directly from faculty-designers engaged in creating materials for and teaching both onsite and online courses.

The study used a mixed methods approach that included a quantitative survey about skills and competencies, which was administered to faculty-designers who chose to participate. The study used open-ended interview questions. The interview strategy focused on obtaining insights from faculty-designers tasked with creating online courses who were not professionally trained instructional designers.

The researcher followed protocol to ensure validity and reliability throughout the study. By conducting a field test, the researcher was able to begin the validation process for the survey instrument. Chapter 4 includes results from the survey and themes identified from the interviews and provides a detailed data analysis.

CHAPTER 4: DATA COLLECTION AND ANALYSIS

Introduction

An online survey gathered quantitative data from faculty-designers. The survey consisted of multiple-choice questions with the option for participants to participate in a follow up interview. Both interviews and surveys had equal influence on data.

The survey data were uploaded into the statistical data analysis tool, Statistical Package for Social Sciences - SPSS (Version 22) for analysis. Descriptive data were computed (i.e., means, medians, and modes) to provide measures of central tendency for each standard. The mean rank for each standard also was computed by group, so the four groups could be compared.Chapter 4 reports data regarding skills and competencies that may enable faculty-designers to create quality online courses. Description of the sample, summary of results, and a detailed analysis of the results are followed by a chapter summary.

Description of the Sample

Candidates were invited through a campus-wide email to participate in the quantitative portion of the study Interview data from the interviewees was verbal, so the researcher recorded interviews with permission from the interviewees. The information obtained was transcribed for analysis, and the transcript was shared via email with the interviewee to check for accuracy prior to analysis.

Detailed Analysis

Descriptive statistics were conducted after aggregating data in order to identify different course development competencies. Key variables were development competencies and best practices. The Cochran's Q was used to test the hypothesis for

whether there was statistically significant heterogeneity between survey responses. Shinebourne and Adams (2007) described the Q-technique as an appropriate methodology for the investigation of opinions and beliefs, contending that Q-methodology helps researchers identify similar and dissimilar points of view by simultaneously focusing on individual perceptions and revealing distinctive factors and patterns. Donner (2001) emphasized that Q-methodology "allows a researcher to explore a complex problem from a subject's point of view" (p. 24). The ability to measure subjectivity may provide a way to understand values and beliefs in a specific way that is not possible with strictly qualitative means.

The results of the Cochran's Q indicated that proportions in at least two variables were significantly different from one another. Higher education faculty-designers used instructional design competencies and best practices when developing online courses. The null hypothesis (H) was that there were no differences between the set of responses. In this study, the probability was low and the null-hypothesis was rejected.

The researcher used this test for comparing means of two samples (or treatments), even if they had different numbers of replicates. The Q-test compared actual differences between two means in relation to variation in the data—expressed as the standard deviation of the difference between the means. It was used to test the hypothesis for statistically significant heterogeneity between survey responses. The research was intended to elicit information about practices that faculty-designers used when developing online courses and to produce more information based on course development processes adopted at the two universities used for the survey as described by Pickett et al. (2001).

Competencies to Design and Deliver Instruction

After respondents identified skills and competencies they were using and would be using in the future, they were asked to indicate the level of competence they believed would be necessary to create online courses. Five groups of competencies were listed on the survey in an order that suggested an increasing level of expertise. For each item, respondents could select the following options: 1 (*Mostly Disagree*); 2 (*Disagree*); 3 (*Neutral or Not Relevant*); 4 (*Agree*) and 5 (*Strongly Agree*). Survey results were divided into five categories (planning and analysis, design and development, evaluation and implementation, and management).

For each skill and competency, the number of respondents was noted for the four levels (basic knowledge, limited experience, practical application and expert). Percentages and Q-tests were not calculated by levels.

Demographic Findings

Demographic information included areas of content expertise, length of experience creating online courses, and teaching in traditional classrooms. Questions 1 to 10 were designed to obtain information about the five categories of professional foundations (planning and analysis, design and development, evaluation and implementation, and management). The remaining questions sought to ascertain importance of interpersonal skills.

The following table and figures represent demographic information from participants and survey question results. Table 1 represents information obtained from the higher education institutions about jobs titles and years of experiences as faculty-designers.

Table 1.

Years of Experience as Faculty-designer

Number of Years of Experience	Number of Faculty-designers
1	15
3	12
5	10
6	8
7	3
8	7
10	1
12	6
14	3
	Total 65

Table 1 indicates all participants had experience in the task of creating online courses; the information about number of years of experience was provided by the institution rather than by participants. The small demographic reporting experience helps provide perspective on results in the next section, which reports on the quantitative data collected.

Quantitative Survey Findings

Research Questions 1 and 2

The survey was designed to gather data in relation to two questions:

1. What course development competencies do higher education faculty-designers use when developing online courses?
2. What best practices do faculty-designers use when developing online courses?

Surveys were distributed via SurveyMonkey to possible participants at each institution. Each institution had 50 possible participants (100 total). The number of surveys returned was 65. Thirty-two surveys (64%) at Institution A and thirty-three (66%) at Institution B were returned. These were very strong response rates, as online

survey responses tend to average 40% or lower (Instructional Assessment Resources, 2007). Frequency was calculated for each question and institution and are reported next.

Survey Findings

The findings are reported for each question in the survey and for each institution, identified as Institution A and Institution B in the following figures.

Q1 Results. The idea that the need for data collection and analysis skills was important received the highest responses as *neutral* (45%) and *mostly disagree* (5%) for Institution A. Only 21% of respondents from Institution A felt it was important.

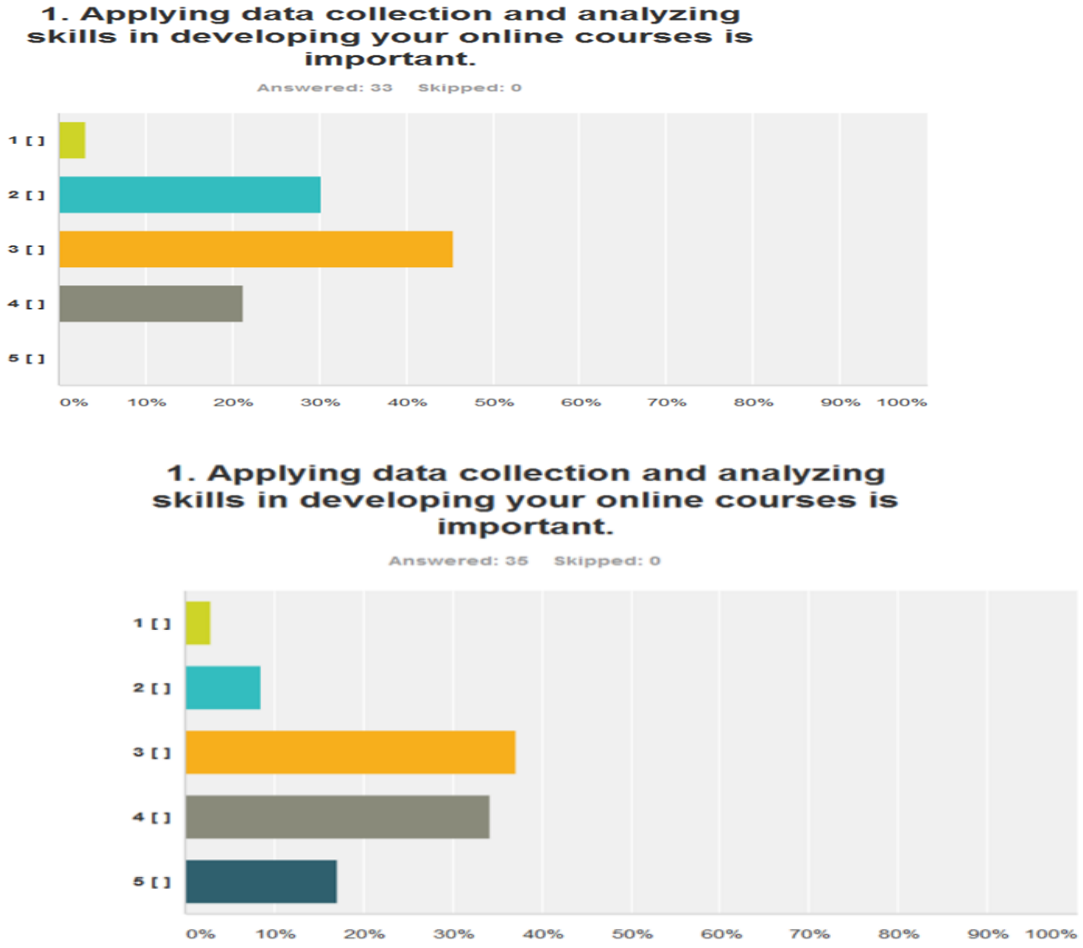


Figure 1. Q1 Statistical Analysis for Institution A (top) and Institution B (bottom).

The need for data collection and analysis skills for Institution B received the highest responses as *neutral* (35%) and *mostly agree* (33%) and *strong agree* (18%) for Institution B. The perceived need for these skills was much higher in Institution B than Institution B as shown in the Figure 1.

Q2 Results. Question #2 asked whether faculty-designers felt it was important to conduct assessments to determine appropriate design solutions and strategies; 70% from Institution A indicated it was not important; while 50% from Institution B did. Figure 2 indicates that 30% of respondents did perceive the importance. Those percentages were found throughout the combination of the following categories: planning and analysis, design and development, and evaluation and implementation.

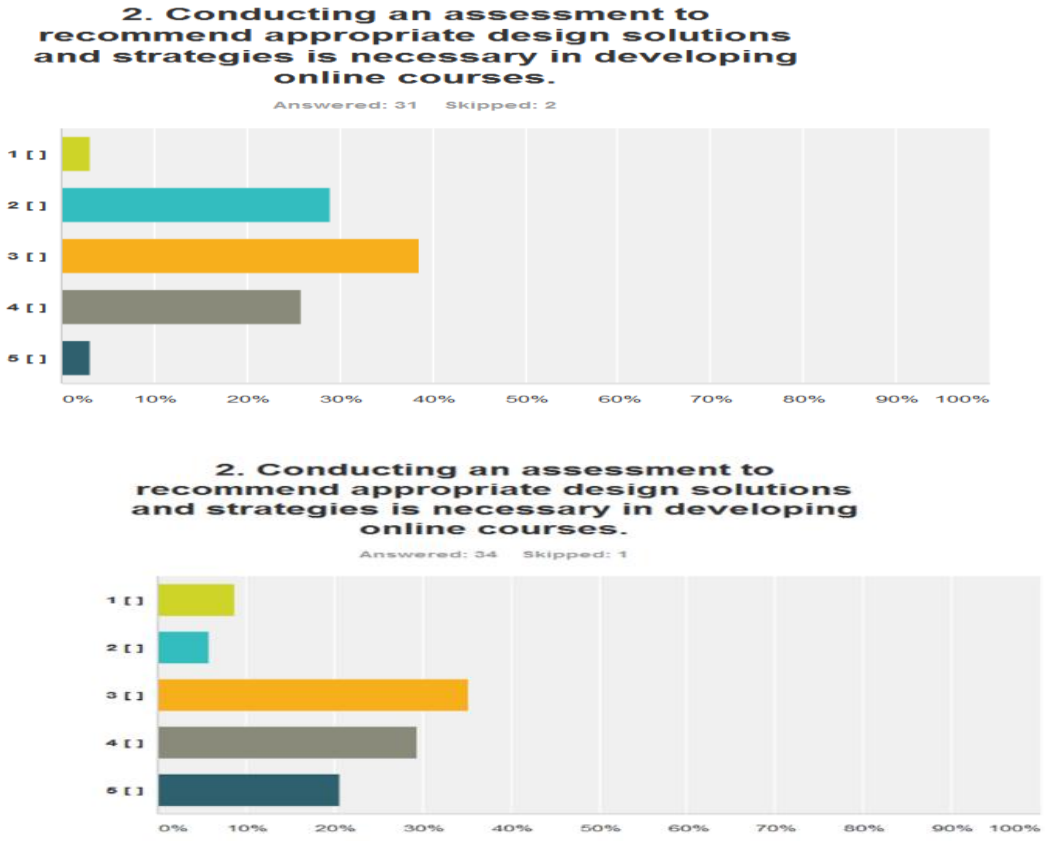


Figure 2. Q2 Statistical Analysis for Institution A (top) and Institution B (bottom).

For this question, Institution B attached a higher degree of agreement to the idea that the skills for conducting an assessment were important. 50% indicated agreement or strong agreement as shown in Figure 2.

Q3 Results. In question #3 on the survey, 72% of participants in Institution A did not agree with the importance of using analysis techniques; 52% of participants Institution B used the analysis. The differences can be noted in Figure 3.

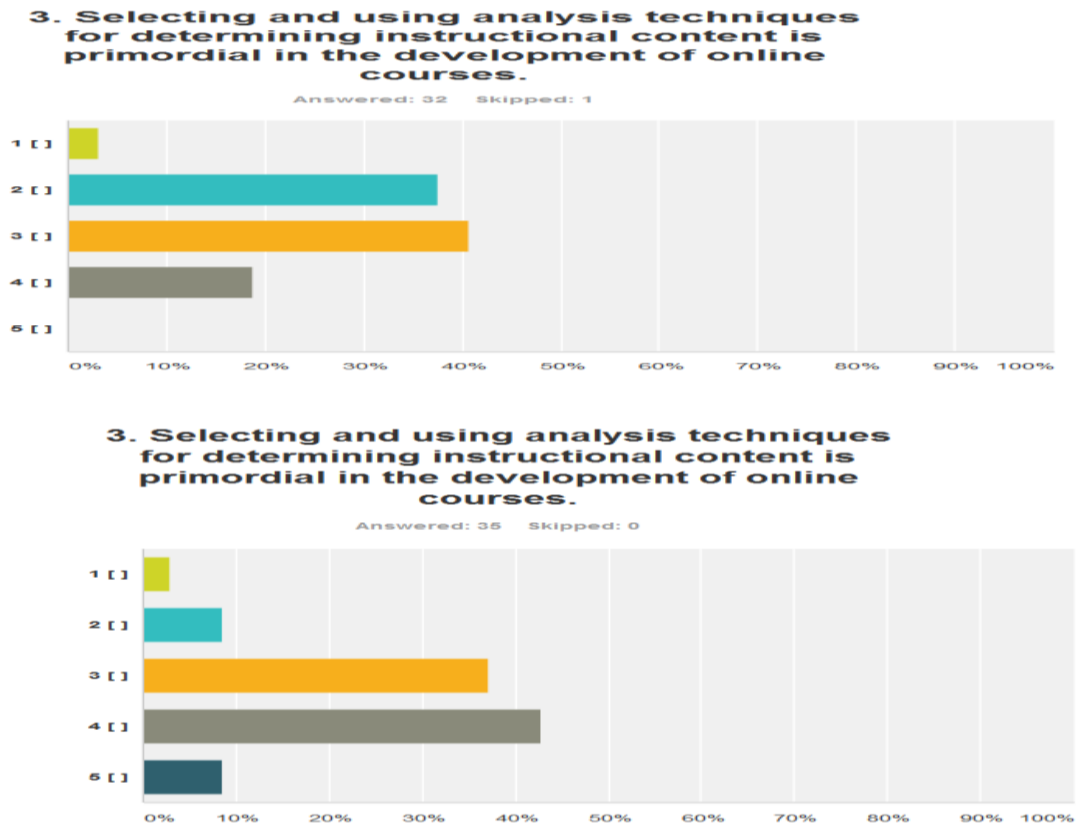


Figure 3. Q3 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q4 Results. In question #4, the faculty-designers from Institution A believed that it was not important to use instructional design and development processes for a given project, as compared with 80% of participants in Institution B that did find it important. These differences can be noted in Figure 4.

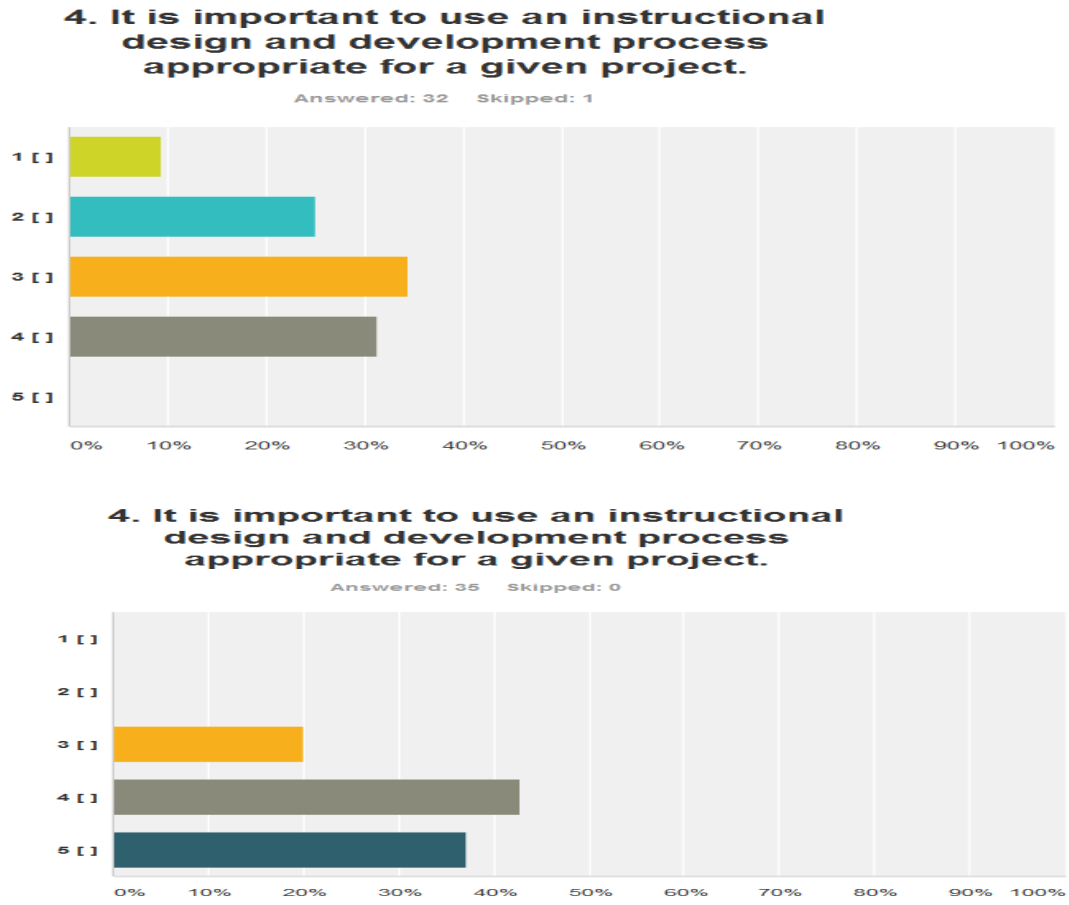


Figure 4. Q4 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q5 Results. In question #5, 70% of the faculty-designers from Institution A believed it unnecessary to have a formal training to design their own learning assessments. Institution B disagreed; 77% found it necessary. This difference is illustrated in Figure 5.

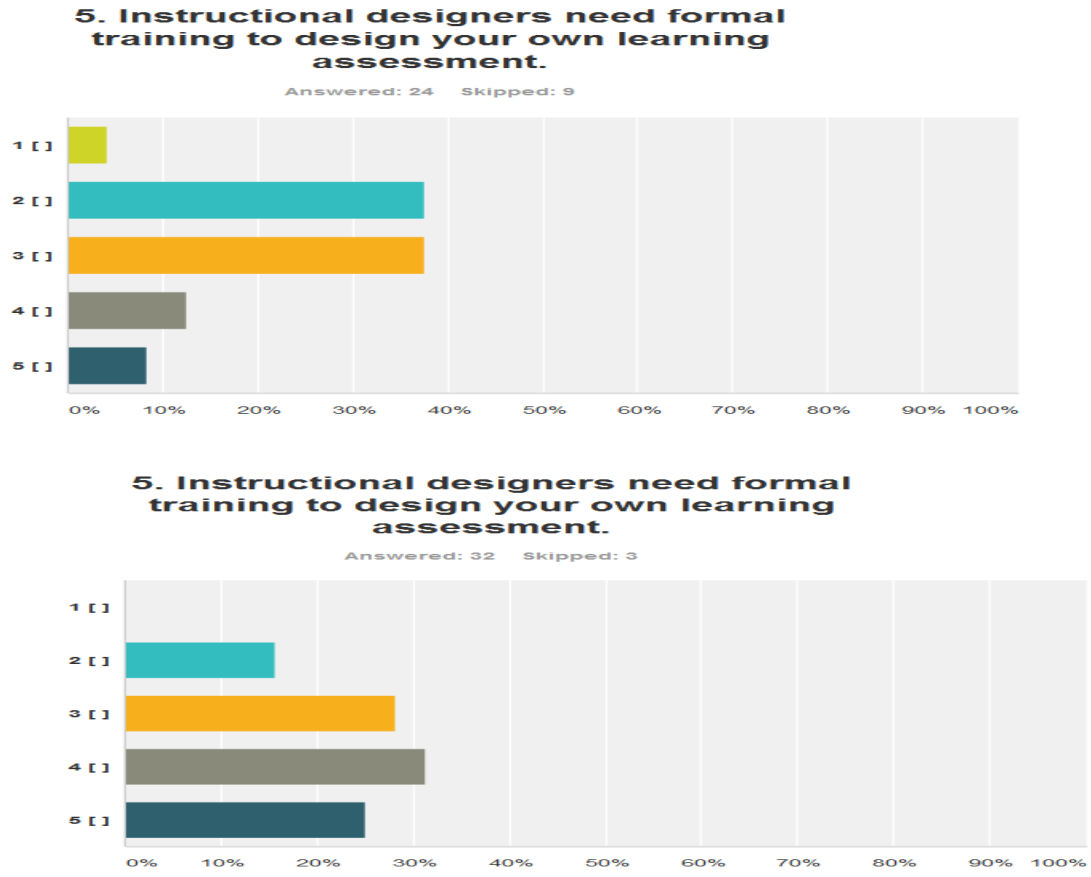


Figure 5. Q5 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q6 Results. In question #6, 76% of faculty-designers from Institution A believed that applying business skills when managing the instructional design function when developing their courses was unimportant. 72% of participants in Institution B perceived the importance.

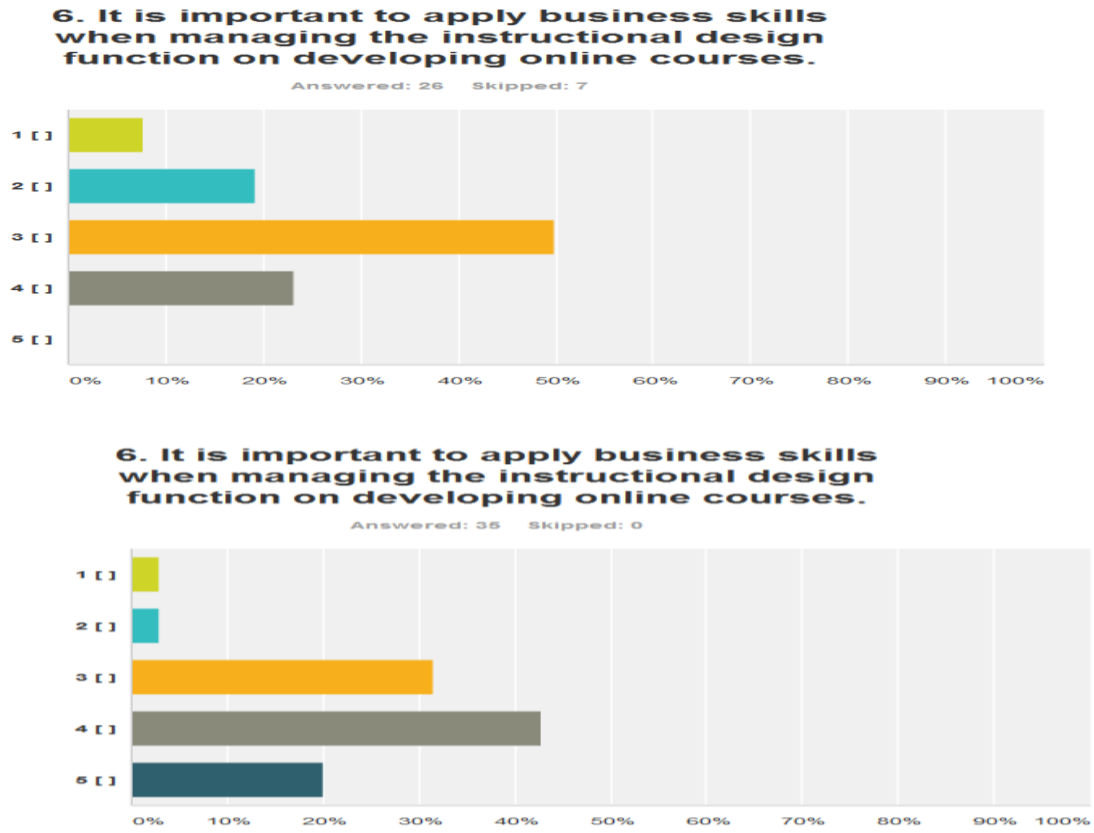
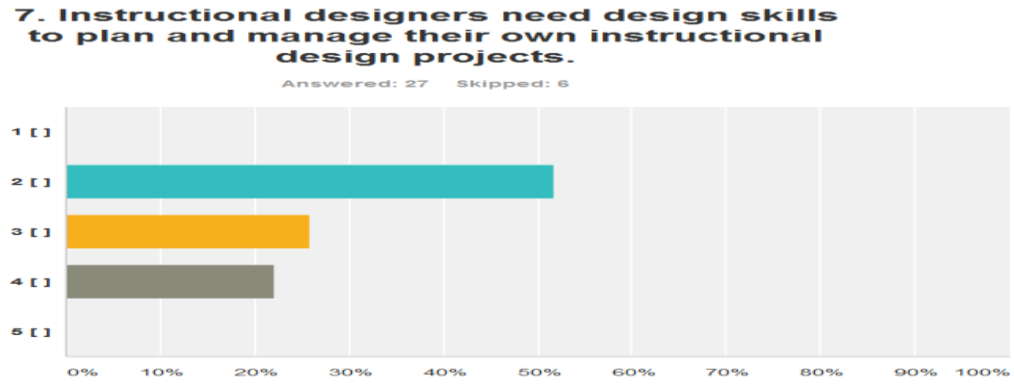


Figure 6. Q6 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q7 Results. In question #7, 77% of faculty-designers from Institution A believed that having design skills to plan and manage their own instructional design projects was unnecessary, whereas 67% of Institution B found it necessary, as illustrated in Figure 7.



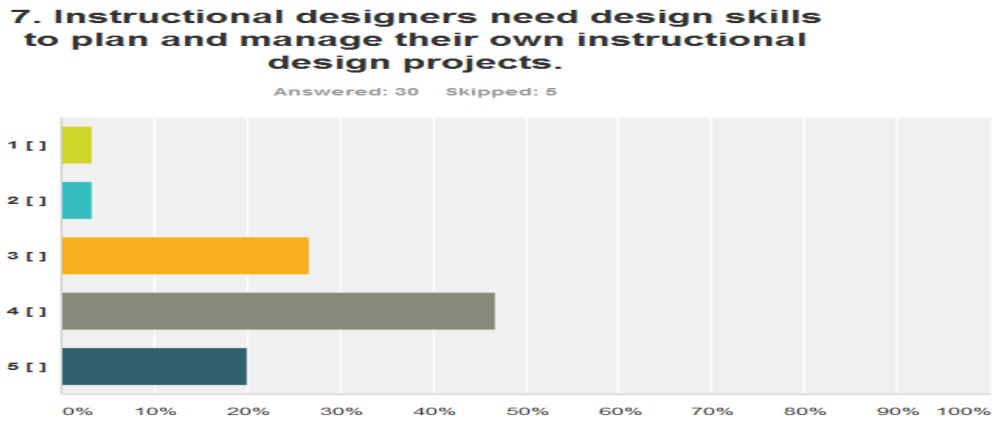
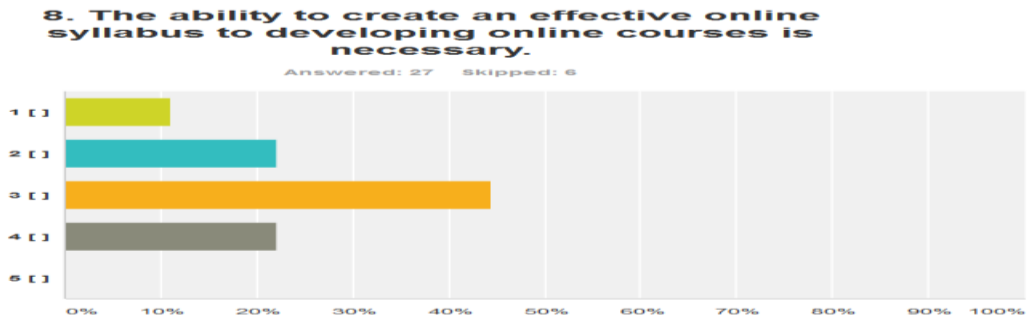


Figure 7. Q7 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q8 Results. In question #8, 78% of faculty-designers from Institution A believed it was not necessary to have the ability to create an effective online syllabus when developing online courses. 89% of participants in Institution B disagreed, finding it necessary, as illustrated in Figure 8.



.

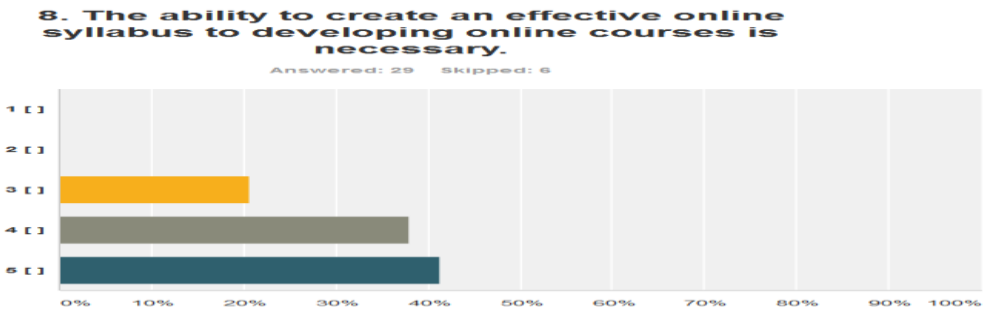


Figure 8. Q8 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q9 Results. In question #9, 60% of faculty-designers from Institution A believed that having clarity regarding course requirements prior to developing online courses was not necessary for the design process, as compared to Institution B, where 91% of the participants found it necessary, as illustrated in Figure 9.

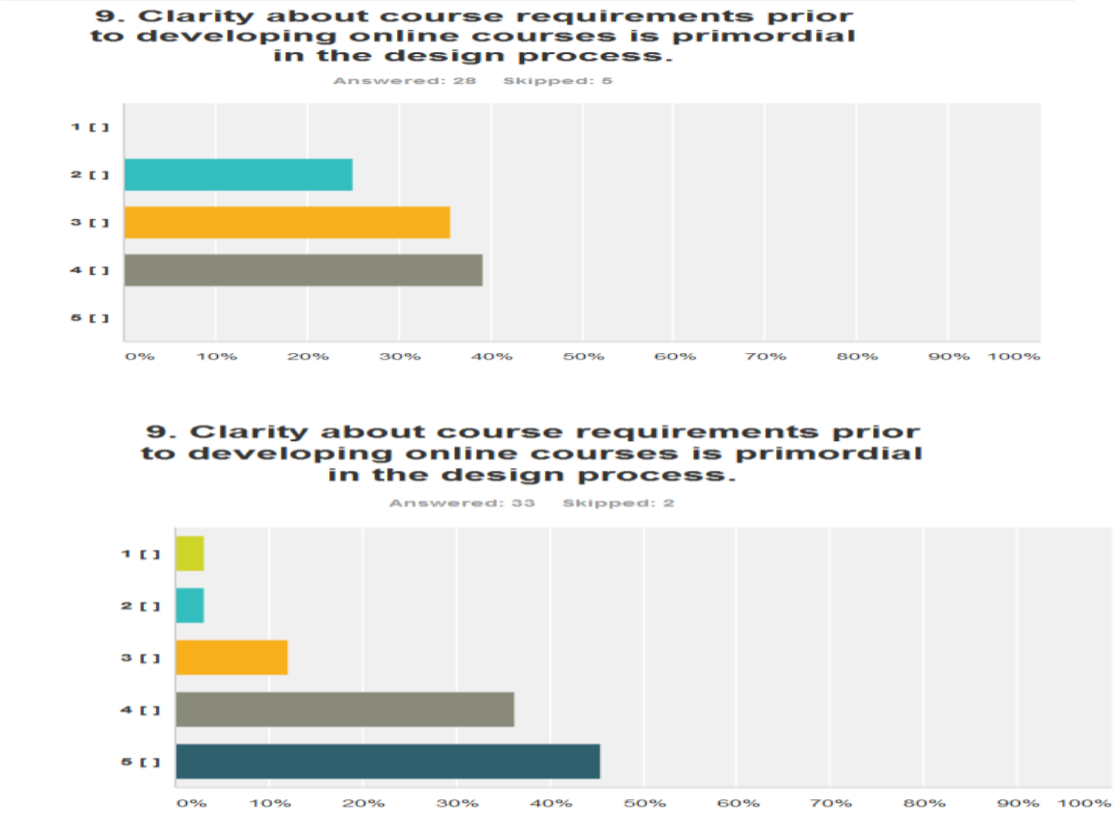


Figure 9: Q9 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q10 Results. In question #10, 70% of faculty-designers from Institution A believed that it was not important to effectively use whatever technology was available for course delivery; this is compared to 68% of participants in Institution B who did find it important, as illustrated in Figure 10.

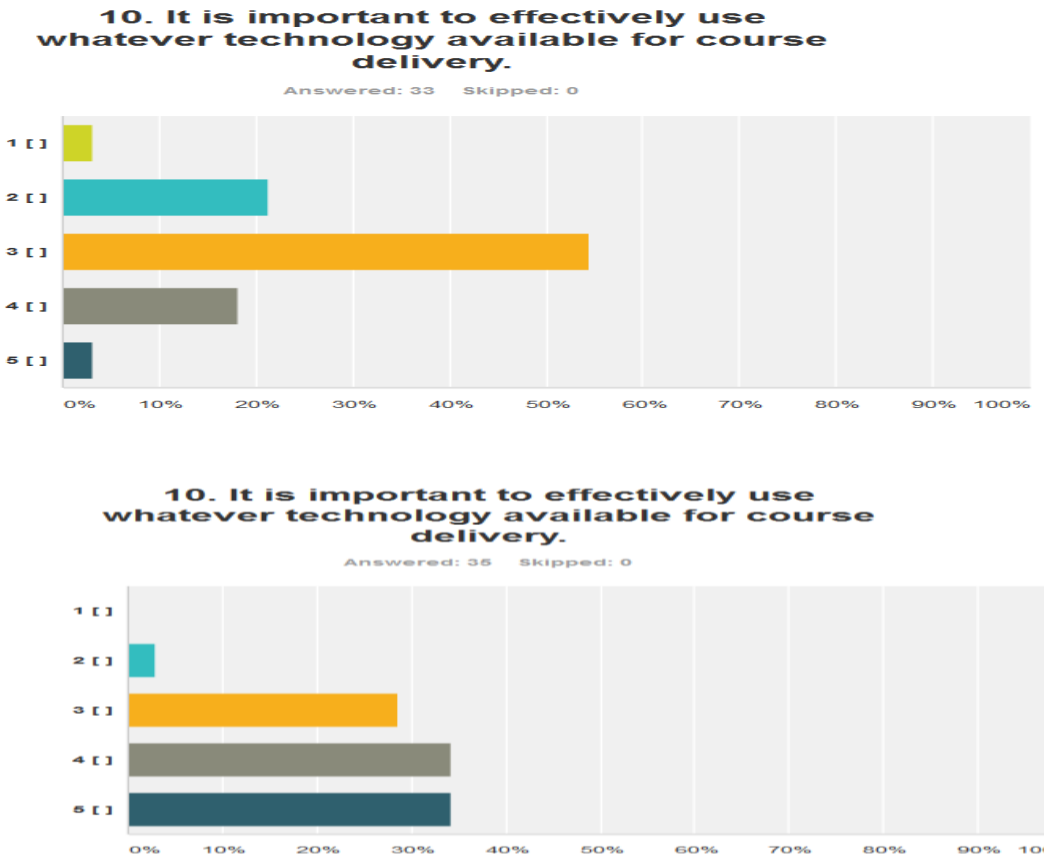


Figure 10: Q10 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q11 Results. In question #11, 72% of faculty-designers from Institution A assumed that using online resources to provide course content for students requires research during the initial design process was not necessary. 72% of respondents in Institution B believed that it was necessary, as illustrated in Figure 15.

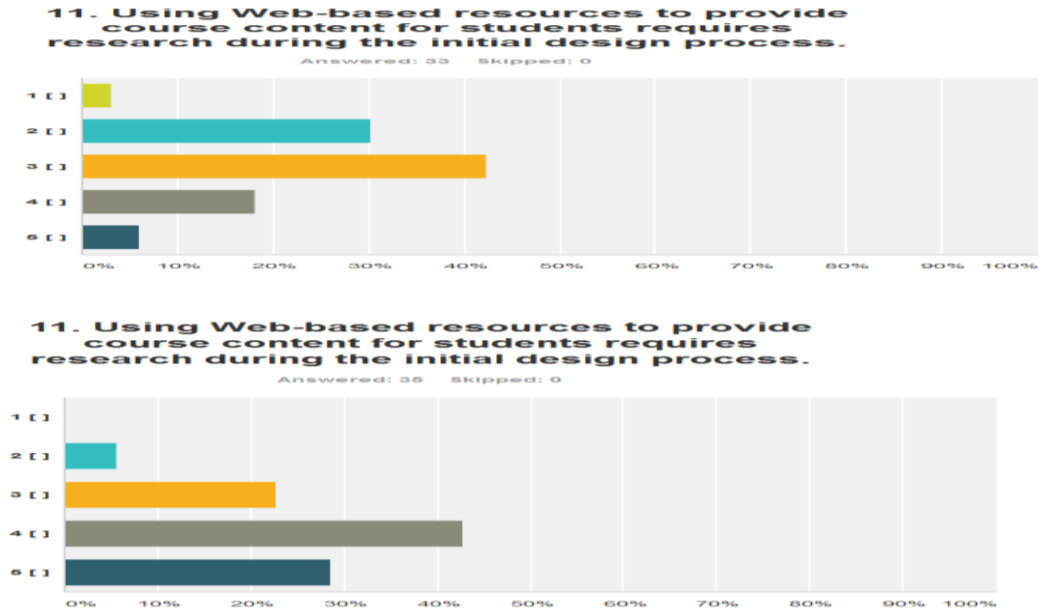


Figure 11: Q11 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q12 Results. In question #12, 79% of faculty-designers from Institution A believed that it was not necessary to have the ability to network with others involved in development of an online course. Sixty two percent of participants in Institution B believed that it was necessary, as illustrated in Figure 12.

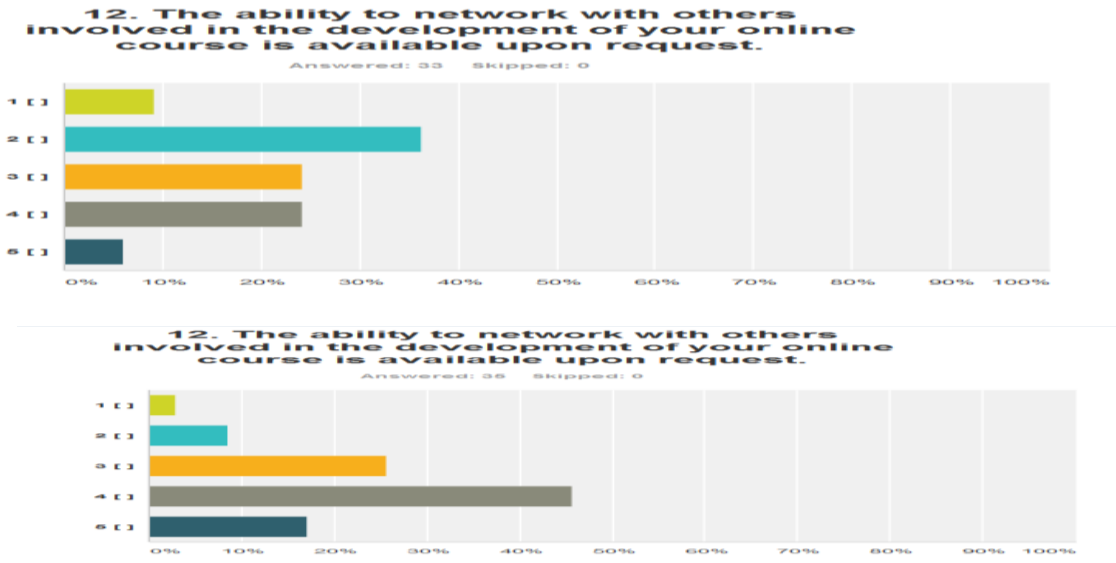


Figure 12: Q12 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q13 Results. In question #13, 73% of faculty-designers from Institution A believed that it was not necessary to have knowledge, skills, attitudes, capabilities, and tasks associated with the role of instructional designer to develop online courses. Institution B found the opposite; 76% of the participants felt it was necessary, as illustrated in Figure 13.

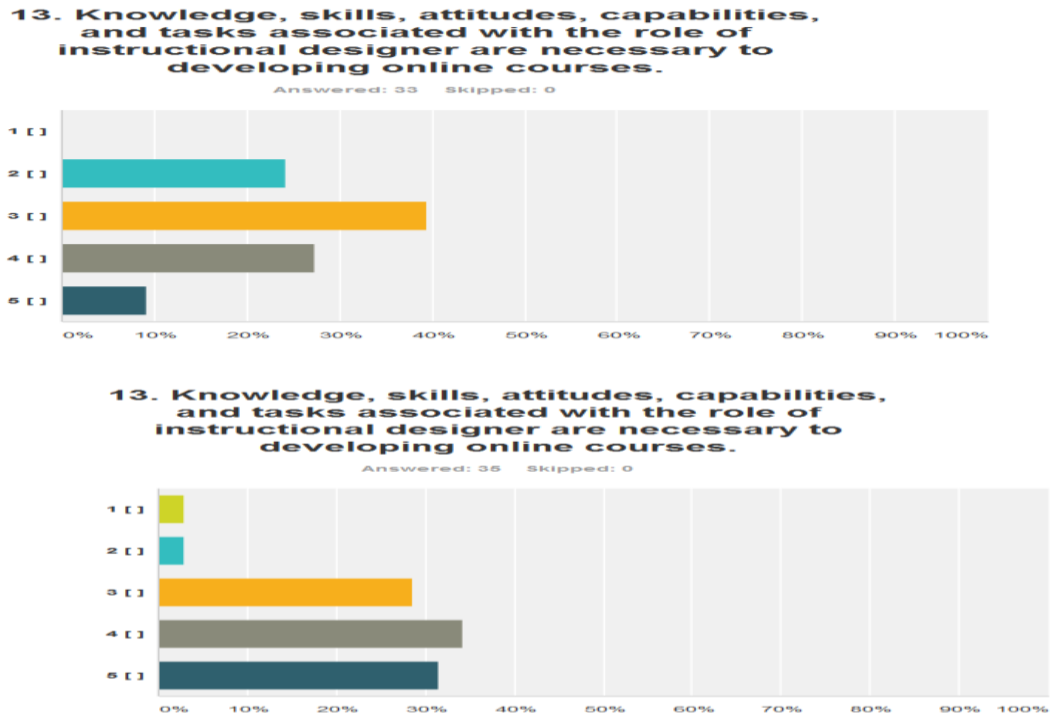


Figure 13: Q13 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q14 Results. In question #14, 66% of faculty-designers from Institution A believed that it was not necessary to have special competencies in order to develop instructional materials for course development. Institution B strongly disagreed: 96% of the participants found it necessary to have those competencies as illustrated in Figure 14.

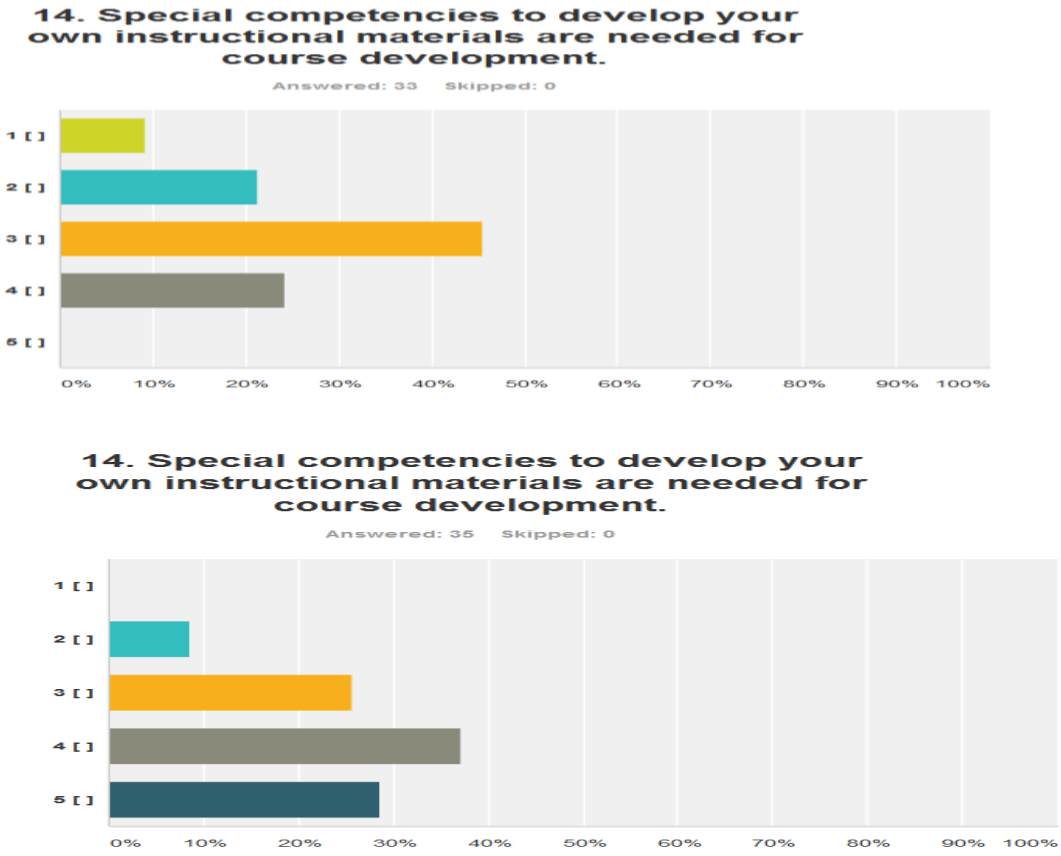


Figure 14: Q14 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q15 Results. In question #15, 74% of faculty-designers from Institution A believed that it was not important to have the ability to understand the potential for problems from various perspectives, as compared to Institution B where 83% the participants believed it was necessary, as illustrated in Figure 15.

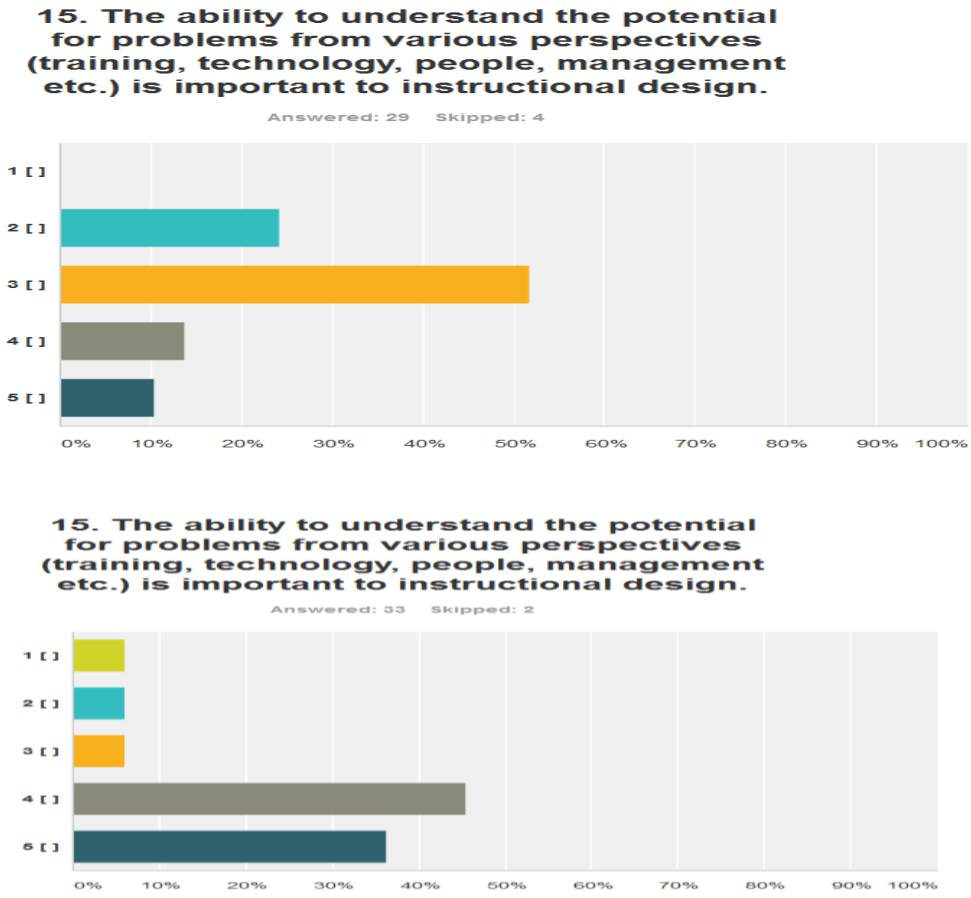


Figure 15: Q15 Statistical Analysis for Institution A (top) and Institution B (bottom).

Q16 Results. In survey question #16, 74% of faculty-designers from Institution A believed it was not necessary to determine instructional resources for their instructional activities. Institution B believed the opposite; 81% of participants found it necessary to determine instructional resources, as illustrated in Figure 16.

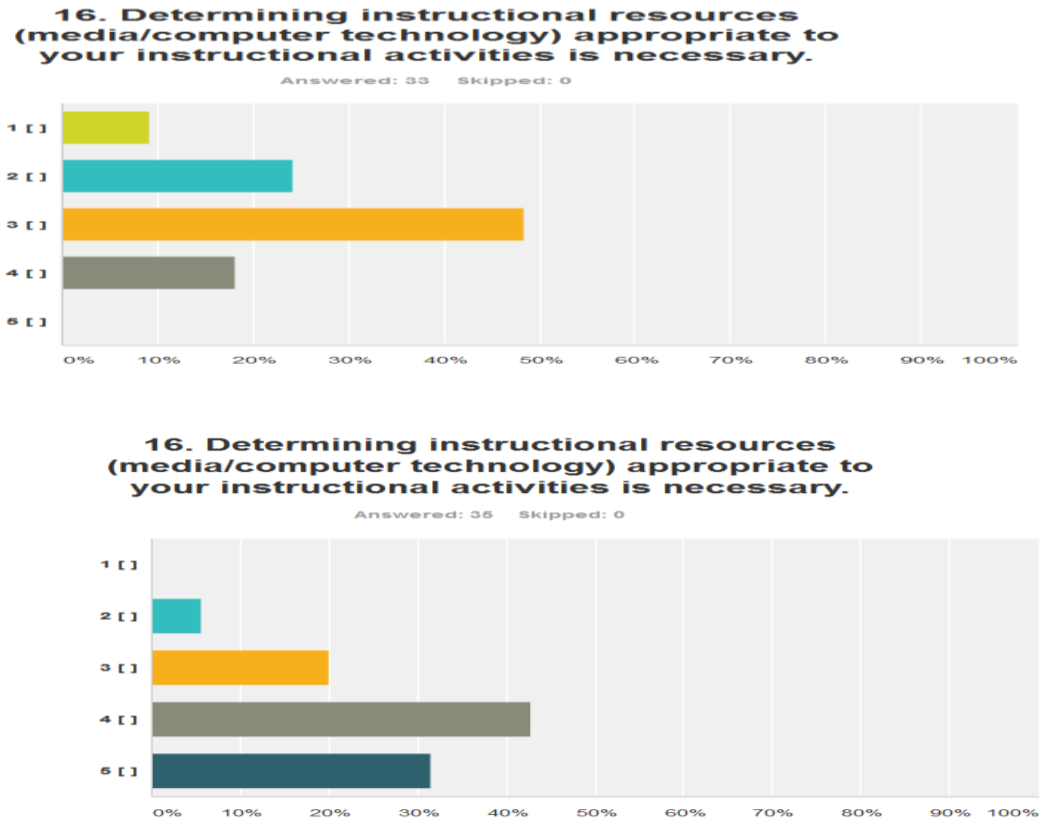


Figure 16: Q16 Statistical Analysis for Institution A (top) and Institution B (bottom).

Summary of Data Findings

Several differences among respondents from the two institutions became evident in the competencies related to developing online courses. Statistically significant differences were found in five instructional design competencies categories (planning and analysis, design and development, evaluation and implementation, and management) and are described as follows:

- In the areas of knowledge, participants from one university were more likely to indicate that the ability to develop an online class was important than were respondents from the other.

- In the area of design, participants from the one institution were more likely to rate system development as a required competency.

The Q-test was used to calculate and determine if there were differences among individuals who used some of the competencies. For the purpose of calculating the Q-test, the two four-year universities were grouped in a single category. For all items, differences between the numbers of respondents who chose each of the options existed, but this variation is something that can be accommodated with the Q-test. Table 2 provides the summary of the Q-test for the hypotheses for the quantitative questions.

Table 2.

Hypothesis Test Summary

	Competencies	*Practices*
Chi Square	8.053	0.172
p-value	0.005	0.679

When analyzing the table for the practices it is observed that all p-values are greater than the level of significance 0.05, therefore it can be claimed that higher education faculty-designers use instructional best practices when developing online services. As observed from the previous table the p-value (0.005) is less than the significance level a = .05, therefore the null hypothesis is rejected and it can be concluded there is significant evidence to claim that higher education faculty-designers do not use instructional design competencies when developing online courses. In addition the p-value (0.679) is greater than the significance level, implying that the null hypothesis failed to be rejected and therefore it can be concluded that there is no evidence to claim that higher Education - faculty designers do not use instructional design best practices when developing online courses.

Table 3 provides a detailed analysis from the Q-test for each question that was analyzed. The analysis shows that all *p*-values were greater than the significance level a = .05 indicating that each question contributed to the total *p*-value being greater than the confidence level of .05.

Table 3.

Detailed Question Item Analysis

Survey Question	Chi Square	*p*-value
6	0.41	0.522
7	0.86	0.354
8	0.286	0.593
9	3.689	0.055
10	0.529	0.467
11	0.059	0.808
12	0.235	0.628
13	0.059	0.808
14	0.529	0.467
15	0.581	0.446
16	0.235	0.628

Test Statistic	11. Using Web-based resources to provide course content for students requires research during the initial design process.	12. The ability to network with others involved in the development of your online course is available upon request.	13. Knowledge, skills, attitudes, capabilities, and tasks associated with the role of instructional designer are necessary to developing online courses.	14. Special competencies to develop your own instructional materials are needed for course development.	15. The ability to understand the potential for problems from various perspectives (training, technology, people, management etc.) is important to instructional design.	16. Determining instructional resources (media/computer technology) appropriate to your instructional activities is necessary.

Chi Square	0.059	0.235	0.059	0.529	0.581	0.235
p-value	0.808	0.628	0.808	0.467	0.446	0.628

As participants completed the surveys, those who volunteered to be interviewed were contacted to set up the interviews, for the purpose of gathering qualitative data. Data from the qualitative phase of the study are presented next.

Qualitative Interview Findings

Research Questions and Interview Sample

Interviews during the qualitative phase helped focus on actual methods used based on faculty-designers' experiences. The following two qualitative questions were posed through seven interview questions:

1. What methods do faculty-designers use in order to develop online courses?
2. In what ways do faculty-designers develop online materials differently from classroom materials for face-to-face use?

The sample for the second stage of this mixed methods research study was comprised of five individuals. The interviewees volunteered after they completed the survey. The first qualitative question addressed was intended to understand how online

courses were developed. The second qualitative question identified perceptions that faculty-designers held toward developing online courses.

Interview Findings

After interview transcripts were created, the researcher began the coding process by numbering each of the ID practitioners 1 through 10 and labeling each with the corresponding number throughout the transcripts. Transcripts were read three times prior to analysis. The first time the entire transcript for each participant was read start-to-finish. The second and third readings were organized by question. The researcher read each response to the first question for every participant and then moved on to the next question for each participant until entire transcripts had been read. Finally, transcripts were read again and coded for reoccurring key words and themes. Key words (words that occurred more than once in the interview transcripts) and themes (a group of similar keywords or topics) that emerged from the responses were assigned a color and highlighted throughout each transcript. The researcher asked 10 main questions during the interview (see Appendix C). The following findings are organized by questions asked in the interviews. Survey responses are noted for clarification.

Seven interviewees indicated that they were not using course development competencies, five from one institution and two from the other. This indicated that one institution did not embrace the concept of instructional development competencies as much as the other.

Interviews began with the question: *Please describe instructional development processes you used to develop your online course materials*. In response to this question, seven of 10 interviewees (70%) responded that they usually don't add much information

about the course except detailing expectations from students, because the curriculum was usually designed by the school. Faculty designers (70%) responded that course design and development usually meant that they copied and pasted information from the Instructional Technology (IT) department per the department's request. Lastly, 70% of faculty designers responded that the creation of content was followed by instruction provided by the institutions without using design competencies.

The follow up question was: *What resources have been helpful to designing and developing the online courses?* Forty percent of faculty designers responded that no resources were available related to designing and developing online courses. The only resources used came with books and school guides that had been selected for the course. In terms of challenges encountered in developing online courses, 80% shared that one of the biggest challenges in developing online course was the time required to create a proper online course. A part of this high time challenge may be due to the lack of expertise in creating courses and support from the institutions.

Aspects concerning development processes that caused the most difficulty were also addressed. Seventy percent reported that every segment—or all information—needs to be analyzed and evaluated before being posted for students. When asked how that challenge was overcome, the most prevalent response was that the difficulties were usually overcome with experience of creating online courses year after year. Another difficulty often encountered was creation of multimedia, including graphics or video that meet the preferences of visual learners and meet the university's guidelines regarding American with Disabilities (ADA). The task was left to the faculty-designers to search and post or create these additional resources.

The interview question, *Are there a defined set of course development competencies that you are required to meet?* was met with varied responses. Eighty percent reported that a template needed to be followed during course development. The first part of this template was to create the course based on a weekly schedule and included creation of a syllabus, discussion, and other components which were part of the institution's objectives.

A key question was asked near the end of the interview and was *What additional skills do you think would help you develop online courses?* Thirty percent of the interviewees responded that with the support they received from the online learning support staff, no additional skills were needed that would help them develop online courses. They reported that the learning platform was user friendly and any additional audio, visual and multimedia component that they would like added to the course is done with the assistance of an instructional designer.

Faculty-designers usually lack knowledge, instructional design experience, and best practice competencies and skills, which can result in long and frustrating development processes and ineffective course design (Oliver et al., 2010). This concern raised by Oliver et al. seemed to be the case for the faculty-designers interviewed for this study. For that reason they had to adopt an instructional design and development process or learn instructional design principles on their own in order to create online course materials. This challenge is born out in the data that eight of 10 (80%) of faculty-designers interviewed received no training in instructional design prior to taking on the responsibility to create online courses. The majority of faculty-designers felt they could benefit from training in instructional design and development, which is slightly counter to

the earlier comment about the lack of need for additional skills voiced in the previous paragraph.

An analysis of transcripts included coding and highlighting for reoccurring key words and themes. Two main themes emerged and are discussed next.

Interview Themes

The following two themes emerged in the interview transcript analysis: development and competencies. Responses that focused on development and competencies themes were very different for interview responses from one institution, which indicated skills as the primary theme. Some confusion may have existed between the specific meanings for skills and competencies.

Theme 1: Development of online courses

The first theme was intensely discussed during interviews as guided by the research question. Responses of faculty-designers showed variation, as indicated by the following comments (Note: Edited slightly for readability):

- My course design and development is usually copied and pasted by the IT department per my request.
- Not too many resources are available in designing and developing my online courses. I use a template provided by the institution.
- The only resources I use are the ones that come with the book, such as test bank, PowerPoint presentations, solutions to the textbook exercises etc.
- Most of the resources are required to be searched and posted by us.

- There is a process that is outlined by the online campus that helps me develop my course. It is a very detailed process, which involves a collaborative involvement with the online campus.
- We use a general form that helps us to insure that when we are planning a new class we have a framework that helps us to go through the process step-by-step.

Participant responses seem to indicate a lack of a systematic approach being provided by the institutions, although use of a template was provided by one institution. Responses also seem to indicate that ways for identifying resources are identified by the faculty-designers without support from professional instructional designers or curriculum developers. The discussion migrated from development to ideas about competencies needed to create quality online courses, which resulted in the second theme—competencies—which is reported next.

Theme 2: Competencies

Responses of faculty-designers showed variation, as indicated by the following comments (Note: Edited slightly for readability):

- We are taking in consideration that in face-to-face classrooms, it is often predicated on one person being allowed to speak at a time and in online, discussions are usually facilitated forums where students can participate in multiple conversations simultaneously. This is one of the issues that sometimes we have due to little knowledge of the competencies in instructional design.
- We as faculty-designers for the online courses stand by techniques and concepts of teaching and learning that exceed the method of delivery. For that reason, we

use a different approach to develop online materials for our online courses compared with our onsite courses.

- We think that development is more time consuming in the online course due to the lack of familiarity with instructional design process in the distance course resulted in more work.
- We believe that the time spent per student in the online classroom is less than time per student required in the face-to-face classroom.
- The inevitability of learning more about instructional design and their competencies are really important to accelerate the process.

In theme two, many participants shared similar views about the ways faculty-designers develop online materials differently from classroom materials for face-to-face use. It may be that the faculty-designers do use different processes or feel as though different processes are used due to the 'newness' of creating online learning materials.

Chapter Summary

Faculty-designers in Institution A who wanted to develop instructional design competencies seemed to have a variety of resources available, including university courses, technical college courses, training, conferences and seminars, and self-study materials. These resources were available in Institution B too but participants also had access to instructional designers to guide and supervise the faculty-designers, which may have been one reason for the differences in responses.

This research study was conducted to identify basic skills and competencies that enable faculty-designers to develop online courses. The goal was to determine which instructional design practices faculty-designers and instructional designers included and

excluded. Participants were asked to rate statements based on experiences with course design. Participants read and selected the response with which they most agreed. Each statement was ranked on a scale from 1 to 5 with the following ranks: 1 (*Mostly Disagree*); 2 (*Disagree*); 3 (*Neutral or Not Relevant*); 4 (*Agree*) and 5 (*Strongly Agree*).Data analysis indicated that most participants from Institution A (the institution that used a guide to design the courses) lacked formal instructional design training despite having created online courses.

Chapter 4 provided a detailed description of survey results and interview analysis, and presented data. The next chapter summarizes findings from the surveys and interviews and presents the final interpretation. Conclusions from these results and recommendations are discussed in Chapter 5.

CHAPTER 5: CONCLUSIONS AND FURTHER DISCUSSION

Introduction

The purpose of using a mixed methods study was to identify basic skills and competencies that faculty-designers used to create online courses. Richey and Klein (2005) reinforce the idea that design, development, and evaluation of instructional products and programs are considered to be the heart of instructional development. This research identified skills for educational professionals who were not trained in instructional design to create online courses. This study also helped understand interaction patterns, roles, strategies, and tools for online course development by faculty-designers. Results of this study provided critical information about skills and competencies for faculty-designers creating online courses and highlighted the need to involve trained instructional designers to guide in design and development processes.

This study examined skills, competencies, and best practices that faculty-designers used to create quality online courses. Knowing methods used by faculty-designers could help other faculty members with little or no prior experience of online course design or development to begin to create online courses. The study could lead to additional work about identifying essential skills for faculty-designers and could help to better understand interaction patterns, roles, strategies, and tools, as well as help devise improved policies for future online course development.

The findings indicated that the implementation of instructional design competencies is not consistent for those with little or no training in instructional design principles and practices. Faculty-designers rarely implemented all competencies and

indicated they had limited knowledge of instructional development processes for online courses.

Based on results of this study, faculty-designers would benefit from training in instructional design. A more detailed discussion of the results follows. This may take place as professional development offered by institutions who hire faculty and expect them to adopt the role of faculty-designer. Training should be offered prior to expecting faculty to create online courses and should emphasize basic instructional design skills, competencies and best practices identified in the study.

Summary of Results

This chapter describes findings and methods of the study within the context of the research questions. The data seemed to indicate that, for certain types of instructional competencies were not used. Faculty-designers in one institution used only a guide provided for the institution to develop their online courses and the second institution had an instructional designer monitor and advise online class creators. According to respondents, the second institution appeared more likely to use instructional competencies to develop their online courses.

Respondents were asked to indicate the level of competency needed to implement types of development for online courses. In three of the five, the ability to use competencies was the most frequent response. Following are the three competencies: 1) Planning and Analysis, to conduct a needs assessment in order to recommend appropriate design solutions and strategies; 2) Design and Development, to use as an instructional

design and development process appropriate for a given project; and 3) Management and Plan, to manage instructional design projects.

The first institution selected the option, moderate frequency, regarding the ability to evaluate effectiveness of online courses. The ability to develop an online course was viewed as the least important competency by the majority of faculty-designers from the first institution. Upon additional analysis, the researcher noticed that faculty-designers concentrated more on results from their online classes than the design competencies. Few differences in the selection of needed competencies by respondents from the first institution were noted. Respondents from the second institution were more likely to believe that faculty-designer should be able to use, evaluate, and develop certain competencies, including professional foundations, planning and analysis, design and development, evaluation and implementation, and management.

To develop proficiency in developing online courses, respondents from the first institution were likely to attend training or use self-study methods. Training was especially popular for technologies, such as distance learning systems.

During the interviews, respondents were asked to identify instructional development processes of online courses in their institutions. Six respondents mentioned a lack of skills to develop new online courses; new software was also a major barrier that six of the ten interviewees mentioned (i.e.,difficulties with technologies). Other barriers mentioned by five respondents included lack of knowledge or skills among faculty-designers, lack of management interest or support, and lack of technical support. For seven of the interviewees, the ability to understand the potential for problems from various perspectives (e.g., training, technology, people, and management) was also a

barrier. Knowledge, skills, attitudes, capabilities, and tasks associated with the role of institutional designer were considered necessary to creating quality online courses by seven of the interviewees.

A mixed methods research design was selected to gather quantitative survey data pertaining to skills and competencies possessed (or not) by faculty-designers, and qualitative data was gathered to explore reasons for development processes used. In the first phase, the researcher conducted a survey adapted from Larson (2004). The next discussion provides a discussion based on the summary of findings.

Discussion

This research study examined two questions for each methodology. A discussion of the study results in relation to each research question follows.

Survey and interview data was gathered about the professional preparation from 65 faculty-designers who held dual roles of instructor/designer in two four-year universities. Study results were consistent with previous studies regarding implementation of online courses. Kenny, Zhang, Schwier, and Campbell (2005) and Christensen and Osguthorpe (2004) found that instructional design practices were not systematically implemented, and that some practices were frequently implemented while others were not. Examination of the data related to instructional development competencies of 65 faculty-designers revealed that faculty-designers from the first institution found the competencies were 'considered unnecessary.' Faculty-designers participating in the study reported that they did not always use instructional development competencies – indeed, many were not aware of such competencies. In contrast, the

majority of participants from the second institution considered competencies and standards to be a foundation for creation of online.

A similarity among faculty-designers from the two institution was also found in the least-implemented instructional design practices. Analyze was one of the competencies that was rarely used.

Both quantitative and qualitative methods were used to gather data during the interviews, and responses varied among the ten respondents. Several possibilities exist to explain differing responses. First, the design process in the first institution was much different from the second institution, which may have been because the second institution had instructional designers monitor and advise about course creation; in the first institution there was only a course implementation guide. As stated previously, the reasons for the inclusion or exclusion of instructional design practices differed between responses on the surveys and interviews. The researcher noticed that the second institution's faculty-designers used instructional design assistance and this allowed them to use more competencies when creating online courses, compared to Institution A.

The previous statements reflect interpretation of the results of the data gathered during the study. The next section will reflect on the results based on the literature.

The literature review explored the general topic of instructional design, including an overview of the growth of online courses in higher education, challenges of developing online courses, instructional design theory, and the emerging role of faculty-designers in higher education. A key component of the literature review was the use of faculty-designers who often have little or no training in instructional design, but are expected to create their own curriculum and online instruction. Reflecting on skills and

competencies described in the literature, the study demonstrated that faculty-designers need more skills training and need to use all competencies that enable one effectively complete online course development. Faculty-designers tend to not use instructional design competencies, as documented several times throughout the research. The additional skills training may take place as professional development offered by institutions who hire faculty and expect them to adopt the role of faculty-designer. Training should be offered prior to expecting faculty to create online courses and should emphasize basic instructional design skills, competencies and best practices, such as those identified in this study.

The research demonstrated the overlap between faculty-designers and instructional designers and how they are similar, yet different. The study also documented that in some cases, faculty-designers have not been trained to develop online courses and their training did not include modern pedagogy or technology. Furthermore, the findings indicated that the implementation of instructional design competencies is not consistent within institutions. Faculty-designers who are not aware of the needed instructional design skills and competencies cannot implement competencies; faculty-designers indicated they had limited knowledge of the design and development processes regarding online courses.

Discussion of Limitations

A discussion of study limitations is not an easy task. However as Marshall and Rossman (2011) highlight, such a discussion "demonstrates that the researcher understands this reality that he will make no overweening claims about generalizability or conclusiveness about what he has learned" (p. 76). The primary limitation of this study

was the small population of 100 possible participants in two higher institutions, resulting in a sample size of 65. The study findings may be informative for other institutions, although no generalities can be drawn. However, the sample was enough to demonstrate that faculty-designers do their jobs the best they can without proper instructional development skills but need to improve their instructional design skills to use competencies in creation of online courses. Future research should provide the opportunity to examine the research questions in a broader context. The next section will discuss implications of findings for practice based on the results of this research study.

Implication of Findings

The study findings and analysis allow a few implications. Faculty-designers showed minimal competency use and results indicate the necessity to help improve online course design skills, reinforced by the data where some participants mentioned training experiences were necessary to develop better online courses. The researcher found that faculty-designers concentrated more on results of online classes they'd created (therefore looking at a finished product) than concentrating on design competencies (before a product was created). Even institutions where online courses were developed primarily by faculty acknowledge a benefit to working with instructional designers (Kampov-Polevoi, 2010). The combination of the availability of an instructional designer to advise and the opportunity to continue professional development learning instructional design skills and competencies seemed to emerge from the data analysis.

Findings also provided opportunities to reflect on future research. The next section will discuss recommendations for further research.

Recommendations for Further Research

Future research could illuminate further study about faculty holding dual roles of faculty and designer by identifying competencies and practices necessary to developing online courses. Vasser pointed out "Traditional colleges must pay attention to the need to acquire professionals who can support instructional development in varying modes of delivery" (2010, p. 4). This transition from traditional approaches to newer online approaches and its impact on faculty deserve more study.

Future research could illuminate findings related to faculty holding dual roles of faculty and designer by identifying characteristics of those faculty-designers who are deemed successful in creating and implementing online courses. Research could also focus on developing online courses for those holding the dual role of faculty-designer. Finally, this study was done with a small sample from two four-year university systems in the northeastern United States. Future studies could include a larger sample to enable findings to be generalized.

Conclusion

This study examined skills and competencies that enable faculty-designers to develop online courses. According to Richey and Klein (2005), design, development, and evaluation of instructional products and programs are considered to be the heart of instructional development.

The study showed that faculty-designers often neglected or were not aware of several instructional design competencies. As indicated in data from the interviews, faculty-designers often do not have enough skills to develop online courses without a guide of an instructional designer. Participants reported that they were unclear about the

practice and its application in the course creation process. Furthermore, the data in this study supports previous research conclusions that faculty-designers have little experience in implementing instructional design processes. Merrill (2007) indicated that those holding dual roles of instructor and designer most often created lessons without using a systematic design process. Merrill's (2007) assertion was corroborated by the findings in this study as well.

An unexpected discovery of the study was the difference between the two institutions used in the research. In the interviews, faculty-designers from one institution showed minimal competency use and results indicated the necessity for improving online course development skills, and yet indicated that they did not feel the necessity for such skills. In the other institution, faculty-designers indicated in both surveys and interviews that they did not use all competencies and need better skills to design effective online courses. Further research may help to strengthen this study's results, especially with the urgency noted as more universities use faculty-designers to develop online courses.

In conclusion, the data gleaned from responses on the surveys and the interviews seems to indicate faculty-designers need to use more competencies to create online courses. Statistically significant differences were found in five of the instructional design competencies categories (planning and analysis, design and development, evaluation and implementation, and management.) In the area of knowledge, participants were more likely to indicate that the ability to develop an online class was important. In the area of design, participants were more likely to rate system development as a required competency. As observed in the statistical analysis, higher education faculty-designers do not use instructional design competencies when developing online courses.

This research study provided useful information to add to the literature base regarding experiences of faculty-designers in higher education institutions Additional research is needed to further validate the findings.

References

Albi, R. S. (2007). *Professors as instructional designers: Lived experiences in designing and developing online instruction* (Doctoral dissertation). Received from ProQuest Dissertations and Theses Database, 125.

Allen, I. E., & Seaman, J. (2011). Going the distance: Online education in the United States. *Babson Survey Research Group.*

American Psychological Association (APA). (1993). *Learner-centered psychological principles: Guidelines for school reform and re-structuring*. Washington, DC: American Psychological Association and the Mid-Continent Regional Educational Laboratory.

Anderson, T. (2008). *The theory and practices of online learning* (5th ed.). Edmonton, AB, Canada: Athabasca University Press.

Anyikwa, B. E., Amadi, M. N., & Ememe, P. (2012). Globalization and the future of higher education in Nigeria. *Humanity & Social Sciences Journal*, *7*(1), 67-76.

Arinto, P. B. (2013). A framework for developing competencies in open and distance learning. *The International Review of Research in Open and Distance Learning, 14*(1).

Badawy, M. K. (2012). Collaborative e-learning: Towards designing an innovative architecture for an educational virtual environment. In E. Pontes, A. Silva, A. Guelfi, & S. T. Kofuji (Eds.), *Methodologies, tools and new developments for e-learning* (pp. 217-240). DOI: 10.5772/31604

Bakardjieva, T., & Gradinarova, B. (2012). Wikis and blogs in e-learning context. In E. Pontes, A. Silva, A. Guelfi, & S. T. Kofuji (Eds.), *Methodologies, tools and new developments for e-learning* (pp. 1-21). DOI: 10.5772/29574

Baran, E., Correia, A., & Thompson, A. (2011). Transforming online teaching practice: Critical analysis of the literature on the roles and competencies of online faculty. *Distance Education*, *32*(3), 421–439.

Batts, D., Pagliari, L., Mallett, W., & McFadden, C. (2010). Training for faculty who teach online. *Community College Enterprise*, *16*(2). Retrieved from http://www.freepatentsonline.com

Bolliger, D. U., & Wasilik, O. (2009). Factors influencing faculty satisfaction with online teaching and learning in higher education. *Distance Education, 30*(1), 103-116.

Bonk, C. J., & Cummings, J. A. (1998). A dozen recommendations for placing the student at the centre of web-based learning. *Educational Media International*, *35*(2), 82-89.

Brindley, J. E., Walti, C., & Blaschke, L. M. (2009). Creating effective collaborative learning groups in an online environment. *The International Review of Research in Open and Distance Learning, 10*(3).

Bruce, N., Pope, D., & Stanistreet, D. (2008). Quantitative Methods for Health Research: *A Practical Interactive Guide to Epidemiology and Statistics*. Hoboken, NJ: Wiley.

Carliner, S., & Driscoll, M. (2009). Who's creating the e-learning? In M. W. Allen (Ed.), *Michael Allen's E-learning Annual* (pp. 43-56). San Francisco, CA: Pfeiffer.

Carroll, N., & Burke, M. (2011). A framework for developing an online degree program. *Journal of the Academy of Business Education*, *12*, 101-112.

Chang, S. H., & Smith, R. A. (2008). Effectiveness of personal interaction in a learner-centered paradigm: Distance education class based on student satisfaction. *Journal of Research on Technology in Education (JRTE), 40*(4), 407-426.

Charalambos, V., Michalinos, Z., & Chamberlain, R. (2004). The design of online learning communities: Critical issues. *Educational Media Inter-national,41*(2), 135-143.

Chen, S. (2007). Instructional design strategies for intensive online courses: An objectivist-constructivist blended approach. *Journal of Interactive Online Learning*, *6*(1), 72-86.

Chen, X., Barnett, D. R., & Stephens, C. (2013, Sept.). *Fad or future: The advantages and challenges of massive open online courses (MOOCs).* Paper presented at the Research-to-Practice Conference in Adult and Higher Education, Lindenwood University.

Chin, S. T. S., & Williams, J. B. (2006). A theoretical framework for effective online course design. *MERLOT Journal of Online Learning and Teaching*, *2*(1), 12-21.

Christensen, T. K., & Osguthorpe, R. T. (2004). How do instructional-design practitioners make instructional-strategy decisions? *Performance Improvement Quarterly, 17*(3), 45-65.

Collins, S., McKinnies, R., & Collins, S. (2010). *Online Journal of Workforce Education and Development, IV*(2).

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W. (2008). *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. Columbus, OH: Pearson, Prentice Hall.

Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.

Darling-Hammond, L., Hammerness, K., Grossman, P., Rust, F., & Shulman, L. (2005). The design of teacher education programs. In L. Darling-Hammond & J. Bransford (Eds.). *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 390-441). San Francisco: Jossey Bass.

De Vries, J. (2007). *Involving SMEs in rapid eLearning authoring*. San Jose, CA: Adobe.

Denzin, N. K., & Lincoln, Y. S. (1994). Entering the field of qualitative research. In N.K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 199-208). Thousand Oaks, CA: Sage.

Di Biase, D. (2000). Is distance education a Faustian bargain? *Journal of Geography in Higher Education*, *24*(1), 130-136.

Donner, J. (2001). Using Q-sorts in participatory processes: An introduction to the methodology. *Social Development Papers, 36*, 24-59.

Evans, R. (2004, Winter). Preparing to teach online [Electronic version]. *Academic Exchange Quarterly*, *8*(4). Retrieved June 22, 2006, from Expanded Academic ASAP Plus.

Franklin, T. (2002). The instructional, technical, and psychological perspectives of faculty building online courses in cohort settings. *Turkish Online Journal of Educational Technology (TOJET), 1*(1), 32-36.

Goodyear, P., Salmon, G., Spector, J. M., Steeples, C., & Tickner, S. (2001). Competencies for online teaching: A special report. *Educational Technology Research and Development*, *49*(1), 65-72.

Gross, M. D. (2006). *Instructional design thought processes of expert nurse educators* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Publication No. AAT 3278698).

Hénard, F., & Roseveare, D. (2012). *Fostering quality teaching in higher education: Policies and practices*. OECD, IMHE (Programme on Institutional Management in Higher Education).

Hill, C. (n.d.). *Best 10 principles of effective online teaching practices in distance education.* Madison, WI: Magna Publications. Retrieved from http://www.mnsu.edu/cetl/teachingwithtechnology/tech_resources_pdf/Ten%20Principles%20of%20Effective%20Online%20Teaching.pdf

Hirumi, A. (2002). The design and sequencing of e-learning interactions: A grounded approach. *International Journal of E-Learning*, *1*(1), 19-27.

Hsu, C. L., & Lin, J. C. (2008). Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management, 45*(1), 65-74.

Information Resources Management Association. (2011). Instructional Design: Concepts, Methodologies, Tools and Applications (3 Volumes) (pp. 1-2074). Hershey, PA: IGI Global. doi:10.4018/978-1-60960-503-2

Instructional Design for Online Learning (IDOL). (2008). Specialization outcomes and specialization competencies. *Capella University*. Retrieved from http://www.capella.edu/idol/idol_competencies.pdf

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14-26.

Kampov-Polevoi, J. (2010). Considerations for supporting faculty in transitioning a course to online format. *Online Journal of Distance Learning Administration*, *13*(2).

Kenny, R. F., Zhang, Z., Schwier, R. A., & Campbell, K. (2005). A review of what instructional designers do: Questions answered and questions not asked. *Canadian Journal of Learning and Technology, 31*(1), 1-17.

Larson, M. B. (2004). *Survey and case study analyses of the professional preparation of instructional design and technology (IDT) graduates for different career environments* (Doctoral dissertation).

Levy, S. (2003). Six factors to consider when planning online distance learning programs in higher education. *Online Journal of Distance Learning Administration*, *4*(1).

Lewis, L., Snow, K., & Farris, E. (1999). Distance education at post-secondary education institutions. *National Centre for Education Statistics*. Retrieved from http://nces.ed.gov/pubs2000/2000013.pdf

Newton, R. (2003). Staff attitudes toward the development and delivery of e-learning [Electronic version]. *New Library World*, 104 (10). Retrieved October 2, 2006, from Emerald Fulltext.

Melsom, D. A. (2010). *The learner-centered instructional design model: A modified Delphi study* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (3423821).

Merrill, M. D. (2007). First principles of instruction: A synthesis. In R. A. Reiser & J. V. Dempsey (Eds.), *Trends and Issues in Instructional Design and Technology* (2nd ed.) (pp. 62-71). Upper Saddle River, NJ: Merrill/Prentice Hall.

Molnar, C., & Armenatno, T. (2006). Distance learning 101: An online faculty training course. *University of Wisconsin: 22nd Annual Conference of Distance Teaching and Learning*. Retrieved from http://www.uwex.edu/disted/conference/Resource_ library/proceedings/06_4191.pdf

Moore, M. G. (2003). *Handbook of distance education* (2nd ed.). New York: Routledge.

Morgan, B. M.(2000). Is distance learning worth it?: Helping to determine the costs of online *courses.* Capstone Project Paper. South Charleston, WV: Marshall University Graduate College. (ERIC Document Reproduction Service No. ED 446611)

Oblinger, D. G., & Hawkins, B. L. (2006). The myth about online course development: A faculty member can individually develop and deliver an effective online course. *Educause Review, 41, 14-15.*

Oliver, K., Kellogg, S., Townsend, L., & Brady, K. (2010). Needs of elementary and middle school teachers developing online courses for a virtual school. *Distance Education*, *31*(1), 55-75.

Organisation for Economic Co-operation and Development. (n.d.). *The definition and selection of key competencies: Executive summary.* Retrieved from http://www.oecd.org/pisa/35070367.pdf

Parrish, P. E. (2009). Aesthetic principles for instructional design. *Educational Technology Research and Development*, *57*(4), 511-528.

Pesce, S. V. (2012). *The designer-by-assignment in practice: Instructional design thinking of subject matter experts* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (922679802).

Pickett, A., Shea, P., & Fredericksen, E. (2001). *The SLN course design process*. NY: SUNY.

Polit DF, Hungler BP. (1999) *Nursing research: principles and methods* (sixth editor). Philadelphia, PA: Lippincott.

Reigeluth, C. M. (2012). Instructional theory and technology for the new paradigm of education. *Revista de Educacion a Distancia*, *32*.

Reigeluth, C. M., & Carr-Chellman, A. A. (2009). Understanding instructional theory. *Instructional-Design Theories and Models* (Vol. 3). London: Taylor and Francis.

Richey, R. C., & Klein, J. D. (2005). Developmental research methods: Creating knowledge from instructional design and development practice. *Journal of Computing in Higher Education, 16*(2), 23-28. DOI: 10.1007/BF02961473

Robson, Collin. 1993. *Real World Research. A Resource for Social Scientists and Practitioner-Researchers.* Oxford: Blackwell.

Saleh, A., & Lacey, C. (2004, Winter). Online teaching: a framework for success [Electronic version]. *Academic Exchange Quarterly*, *8*(4). Retrieved February 28, 2007, from Expanded Academic ASAP Plus.

Salmon, G. (2004). *E-moderating: The key to teaching and learning online*. London: Routledge Falmer.

Santilli, S., & Beck, V. (2005). Graduate faculty perceptions of online teaching. *The Quarterly Review of Distance Education*, *6*(2), 155-160.

Schwier, R. (1995). Issues in emerging interactive technologies. In G. Angling (Ed.), *Instructional Technology* (2nd ed.). Englewood, CO: Libraries Unlimited.

Shinebourne, P., & Adams, M. (2007). Q-methodology as a phenomenological research method. *Existential Analysis, 18*(1).

Sims, R. C., & Koszalka, T. K. (2008). Competencies for the new-age instructional designer. In J. M. Spector, M. D. Merrill, J. V. Merrienboer, & M. P. Driscoll (Eds.), *Handbook of research on educational communications and technology* (3rd ed.) (pp. 569-575). New York, NY: Taylor & Francis.

Smith, P., & Ragan, T. (2005). *Instructional design* (3rd ed.). Hoboken, NJ: Wiley.

Smith, T. C. (2005). Fifty-one competencies for online instruction. *The Journal of Educators Online, 2*(2).

Song, L., & Hill, J. R. (2007). A conceptual model for understanding self-directed learning in online environments. *Journal of Interactive Online Learning*, *6*(1), 27-42.

Stoltenkamp, J., Taliep, T., & Braaf, N. (2011). Exponential growth and pain: Implementing eLearning at a higher education institution. *International Journal of Instructional Technology and Distance Learning*, *8*(6), 77-89.

Suarez-Brown, T. L., Grice, H., Turner, T., & Hankins, J. (2012). The challenges of delivering quality online and distance education courses. *Review of Business Research*, *12*(5), 94-104.

Swan, K. (2003). Learning effectiveness online: What the research tells us. In J. Bourne & J. C. Moore (Eds.), *Elements of quality education, practice and direction* (pp.13-45). Needham, MA: Sloan Center for Online Education.

Tashakkori, A,. & Teddlie, C. (2008). Quality of inference in mixed methods research: Calling for an integrative framework, In M. M. Bergman (Ed.), Advances in mixed methods research: Theories and applications (pp. 101-119). London: Sage.

The Online Learning Definitions Project (OLDP). (2011). *International association for K-12 online learning.* Retrieved from http://www.inacol.org/cms/wp-content/uploads/2013/04/iNACOL_DefinitionsProject.pdf

Valcheva, D., & Todorova, M. (2012). Methods and tools for increasing the effectiveness of e-learning. In E. Pontes, A. Silva, A. Guelfi, & S. T. Kofuji (Eds.), *Methodologies, tools and new developments for e-learning* (pp. 75-92). DOI: 10.5772/28615.

Vasser, N. (2010). Instructional design processes and traditional colleges. *Online Journal of Distance Learning Administration*, *13*(4).

Visscher-Voerman, I., & Gustafson, K. L. (2004). Paradigms in the theory and practice of education and training design. *ETR&D*, *52*(2), 69-89.

Warren, C. A. (2002). Qualitative interviewing. In J. F. Gubrium & J. A. Holstein (Eds.), *Handbook of interview research: Context & method* (pp. 83-101). Thousand Oaks, CA: Sage.

Watson, S. L., & Reigeluth, C. M. (2008). The learner-centered paradigm of education. *Educational Technology*, *48*(5), 42.

Watson, W. R., Watson, S. L., & Reigeluth, C. M. (2012). A systematic integration of technology for new-paradigm education. *Educational Technology*, *52*(5), 25-29.

Watts, S., & Stenner, P. (2005). Doing Q-methodology: Theory, method, and interpretation. *Qualitative Research in Psychology*, *2*, 67–9.

Weston, T. A. (2009). *Evaluating online learning: Challenges and strategies for success*. New York, NY: Nova Science.

Whitmyer, C. (1999). *Instructional design for online learning.* The University of the Future. San Francisco, California

Wilson, G., & Stacey, E. (2004). Online interaction impacts on learning: Teaching the faculty to teach online. *Australasian Journal of Educational Technology*, *20*(1), 33-48.

Wright, B. (1997). Evaluating learning in individual courses. In J. Gaff, J. Ratcliff, & Associates (Eds.), *Handbook of the undergraduate curriculum* (pp. 571–90). San Francisco: Jossey-Bass.

Yang, Y., & Cornelius, L. F. (2005). Preparing instructors for quality online instruction. *Online Journal of Distance Learning Administration*, *8*(1).

Zheng, L., & Smaldino, S. (2003). Key instructional design elements for distance education. *The Quarterly Review of Distance Education, 4*(2), 153-166.

Appendix A: Statement of Original Work

Academic Honesty Policy

Capella University's Academic Honesty Policy (3.01.01) holds learners accountable for the integrity of work they submit, which includes but is not limited to discussion postings, assignments, comprehensive exams, and the dissertation or capstone project.

Established in the Policy are the expectations for original work, rationale for the policy, definition of terms that pertain to academic honesty and original work, and disciplinary consequences of academic dishonesty. Also stated in the Policy is the expectation that learners will follow APA rules for citing another person's ideas or works.

The following standards for original work and definition of *plagiarism* are discussed in the Policy:

> Learners are expected to be the sole authors of their work and to acknowledge the authorship of others' work through proper citation and reference. Use of another person's ideas, including another learner's, without proper reference or citation constitutes plagiarism and academic dishonesty and is prohibited conduct. (p. 1)
>
> Plagiarism is one example of academic dishonesty. Plagiarism is presenting someone else's ideas or work as your own. Plagiarism also includes copying verbatim or rephrasing ideas without properly acknowledging the source by author, date, and publication medium. (p. 2)

Capella University's Research Misconduct Policy (3.03.06) holds learners accountable for research integrity. What constitutes research misconduct is discussed in the Policy:

> Research misconduct includes but is not limited to falsification, fabrication, plagiarism, misappropriation, or other practices that seriously deviate from those that are commonly accepted within the academic community for proposing, conducting, or reviewing research, or in reporting research results. (p. 1)

Learners failing to abide by these policies are subject to consequences, including but not limited to dismissal or revocation of the degree.

Statement of Original Work and Signature

I have read, understood, and abided by Capella University's Academic Honesty Policy (3.01.01) and Research Misconduct Policy (3.03.06), including the Policy Statements, Rationale, and Definitions.

I attest that this dissertation or capstone project is my own work. Where I have used the ideas or words of others, I have paraphrased, summarized, or used direct quotes following the guidelines set forth in the APA *Publication Manual*.

Learner name and date	Raul Mendez 8/22/2014
Mentor name and school	Dr. Sonja Irlbeck – School of Education

Appendix B: Survey

From "Survey and case study analyses of the professional preparation of instructional design and technology (IDT) graduates for different career environments (Doctoral dissertation)," by M. B. Larson, 2004, Virginia Polytechnic Institute and State University. Copyright 2004 by M. B. Larson. Adapted with permission.

DIRECTIONS: Select the answer that you most agree with. Each statement will be ranked on a scale from one to five with the following ranks:

1 (Mostly Disagree)
2 (Disagree)
3 (Neutral or Not Relevant)
4 (Agree)
5 (Strongly Agree)

1. Applying data collection and analyzing skills in developing your online courses is important.
1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]
2. Conducting an assessment to recommend appropriate design solutions and strategies is necessary in developing online courses.
1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]
3. Selecting and using analysis techniques for determining instructional content is primordial in the development of online courses.
1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]
4. It is important to use an instructional design and development process appropriate for a given project.
1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]
5. Instructional designers need formal training to design your own learning assessment.
1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]
6. It is important to apply business skills when managing the instructional design function on developing online courses.
1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]
7. Instructional designers need design skills to plan and manage their own instructional design projects.
1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]
8. The ability to create an effective online syllabus to developing online courses is necessary.
1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]
9. Clarity about course requirements prior to developing online courses is primordial in the design process.
1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]
10. It is important to effectively use whatever technology available for course delivery.

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

11. Using Web-based resources to provide course content for students requires research during the initial design process.

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

12. The ability to network with others involved in the development of your online course is available upon request.

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

13. Knowledge, skills, attitudes, capabilities, and tasks associated with the role of instructional designer are necessary to developing online courses.

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

14. Special competencies to develop your own instructional materials are needed for course development.

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

15. The ability to understand the potential for problems from various perspectives (training, technology, people, management etc.) is important to instructional design.

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

16. Determining instructional resources (media/computer technology) appropriate to your instructional activities is necessary.

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

Appendix C: Interview Questions

Questions adapted from "Instructional design thought processes of expert nurse educators (Doctoral dissertation)," by M. D. Gross, 2006. Retrieved from ProQuest Dissertations and Theses. (Publication No. AAT 3278698). Copyright 2006 by M. D. Gross. As well as from "The designer-by-assignment in practice: Instructional design thinking of subject matter experts (Doctoral dissertation)," by S. V. Pesce, 2012. Retrieved from ProQuest Dissertations and Theses. (922679802). Copyright 2012 by S. V. Pesce. Adapted with permission.

1. Please describe instructional development processes you used to develop your online course materials.
2. How did you carry out the course design and development? Be as specific as possible.
3. What steps do you take in your current course design and development process? Be as specific as possible.
4. What resources have been helpful to you in designing and developing your online courses?
5. Briefly describe the challenges encountered in developing your online courses.
6. What aspect of the development process caused you the most difficulty?
a. Why?
7. How did you overcome the difficulty?
8. What other difficulties do you encounter when you design an online instruction session?
9. In your role as faculty member, are there a defined set of course development competencies that you are required to meet? Please describe those competencies.
10. What additional skills do you think would help you develop online courses?