DISSERTATION

Finding Erich Jantsch's Five Crucial Innovations: A Study of Four Small Colleges

by

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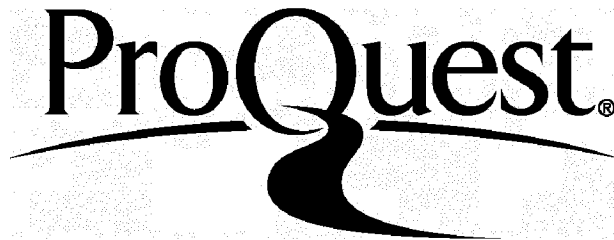**Dissertation Chair: Jennifer Raymond, Ph.D.**

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Abstract

Institutions of higher education have faced many challenges over the last few decades. Though many large institutions have the resources needed to respond to these challenges, small institutions have had to be innovative in the ways in which they are adapting. There are similarities between the external challenges that institutions face today and the challenges they faced in the 1960s and 70s, and it is worth examining whether or not the predictions and suggestions made by scholars in this time period offer insight in regards to the innovation found in small institutions today. This dissertation explored Erich Jantsch's 1969 report in the context of innovation in higher education today. This qualitative, multicase study found that Erich Jantsch's five crucial innovations can be found to some extent in the innovations of four small institutions of higher education.

Keywords: Erich Jantsch, higher education, disruptive forces, innovation, self-renewal, integrative planning

Lastly, I would like to acknowledge with gratitude the support and love of my family, including my husband who read most class papers, brought me more tea on late night course calls, reminded me to shut the computer so I could get some sleep, and stood by my side for five long years. Thanks for supporting me and loving me.

Table of Contents

Chapter One

Introduction

The year 1969 was a technologically impactful year in human history. Humans

landed on the moon twice, the Boeing 747 made its maiden flight, the microprocessor

was invented, and the U.S. military began piloting what would become known as the

Internet. Perhaps due to the military tensions of the Cold War and the Vietnam War,

many individuals began to question how technology would reshape society. In the same

year, Erich Jantsch, an Austrian astrophysicist and systems thinker, was asked to serve as

a research associate at MIT following faculty-led conversations about the future of the

university. Though originally asked to discuss technological forecasting, he realized that

forecasting is meaningless if pursued in isolated disciplines. He began studying the

futures of MIT and American Universities. This research led to the publication of a paper

about the disruptive forces affecting higher education and society. Many of his guiding

concerns remain about higher education and technology's impact today.

At the time, Jantsch (1969) said students wondered whether the college

curriculum was relevant (p. 6). Meanwhile, society was bothered by the degrading side

effects of technology on the systems of human living, cities, as well as the natural

environment (p. 7). Lastly, Jantsch pointed to the rising debate about the lack of systems

and futures thinking (p. 7). He coined the concerns "disruptive forces" and believed that

the university was well-positioned to assume a new leadership role in society to assist in

transforming these concerns. Universities, he said, have the "unique potential for

enhancing society's capability for continuous self-renewal" (p. 9). In order to serve in

this role, however, Jantsch proposed, or rather hoped for, five crucial innovations,

1

including a new purpose for the university, socio-technological system engineering, altering the structure of the university, re-orienting the operational principles of the university, and a more active relationship between the new university and society. Jantsch passed away ten years after the publication of this 1969 document and did not have the opportunity to see if his ideas came to fruition. Higher education is still rocked by disruptive forces today, however, and it is worth examining whether or not Jantsch's crucial innovations can be found in the steps institutions have taken to adapt.

The purpose of this multicase study was to explore whether or not Erich Jantsch's five crucial innovations can be found to some extent in innovations at small institutions of higher education (IHE). Little research has been done to examine Erich Jantsch's contributions to higher education as well as the application of the ideas presented in his 1969 report. It was anticipated that the knowledge generated from this inquiry could add to his legacy, provide insight into the field of systems thinking, and inform research on innovation in higher education. This research employed a qualitative, multicase study to explore the presence of the five crucial innovations to varying extents. Four small IHE participated in this study. Three offices per institution provided information on behalf of their institution.

This chapter begins with a section that provides background and contextual information that frames the study. The second section focuses on the purpose of the study and includes information about the problem, purpose, and research questions, as well as discussion of the research approach and assumptions. The final section of this first chapter discusses the researcher's background, the significance of the study, and key terms.

Background and Context

Higher education is a centuries old institution made up of three main functions: education, research, and service. These three functions are present in all institutions of higher education (IHE), though not all institutions carry these functions out in similar ways. Because this research sought to study small IHE specifically, it must be acknowledged that there are differences in the ways small institutions carry out the education, research, and service functions.

Where universities address the masses in the state and region, small institutions generally have a direct connection with their surrounding communities. They are the "largest economic engine [communities] have to supply prosperity, jobs, and cultural activities to the businesses surrounding the college" (Docking & Curton, 2015, pp. 1-2). When faced with similar challenges, small institutions have had to innovate differently from their university counterparts. Some of these innovations involve college-community partnerships. Early American higher education evolved to follow the German-born Humboldtian model of higher education in the twentieth century. Wilhelm von Humboldt believed in a process of education that engages the student and "embraces the dimension of the ethical citizen in society and thus service to the community" (Crow & Dabars, 2015, p. 79). As this model began to sweep across Europe and eventually to the United States, colleges began to partner with their local communities to use their community as a laboratory (Brockliss, 2000, p. 160). Many of these ties between local colleges and communities remain today, though they may appear in different forms. They even remain in areas that have not prospered over the past century (Maurrasse, 2001, p. 2). Even as some surrounding neighborhoods experience hardship (housing, crime, dilapidation),

colleges remain because they simply cannot move; their acreage and "geographical interest vested in their surrounding communities" (Maurrasse, 2001, p. 20) is too great.

The balance between the three functions of higher education and college work in the community is always at an impasse with disruptive forces. For example, today we see student unrest in the form of movements for racial equality and lifestyle movements (examples: health, sustainability, buying local). There is a resurgence of the sentiment "that the current type of education may no longer be relevant" (Bok, 2006, p. 6). The issue of the costs associated with higher education comes up time and time again in higher education studies (Bok, 2006; Bowen, 2013; Selingo, 2013). Teaching, learning, and the curriculum are accused of not adapting to meet the needs of today's students (Thorp & Goldstein, 2012). The recent disruption of the Internet is even extraordinary because it challenges the very notion of the role of instructors and of IHE (Christensen & Eyring, 2011).

Disruptive forces affecting society and higher education in 1969 were, in fact, the rationale for Jantsch's 1969 report. He said "we are baffled by the sudden appearance in the educational system by student unrest and by the notion that the current type of education may no longer be relevant" (p. 6). At the same time, "we are confused by the degrading side effects of technology on the systems of human living, in the cities as well as within the natural environment" (p. 7). Third, he said that we are "ridden with doubts" (p. 7) about the lack of systems and futures thinking. Universities, he said, are especially affected by these pressures for change through its three functions: education, research, and service. Jantsch argued that these three functions were "patched together" (p. 16), which also caused a lot of the internal disruptive forces present in 1969 and still today.

This patching, he said, caused a "blurring" of the "purpose of the university" (p. 17). Jantsch offered his own suggestion, "we have to look at changes, and pressures for change, in all three of the primary functions of the university" (p. 19). He proposed, or rather hoped for, five crucial innovations for higher education, including a new purpose for the university, socio-technological system engineering, altering the structure of the university, re-orienting the operational principles of the university, and a more active relationship between the new university and society. Therefore, this study sought to uncover traces of Jantsch's five crucial innovations present in the innovations of small institutions today.

Problem, Purpose and Research Questions

Problem Statement

Institutions of higher education have faced many challenges over the last few decades. Though many large institutions have the resources needed to respond to these challenges, small institutions have had to be innovative in the ways in which they are adapting. There are similarities between the external challenges that institutions face today and the challenges they faced in the 1960s and 70s, and it is worth examining whether or not the predictions and suggestions made by scholars in this time period offer insight in regards to the innovation found in small institutions today. This dissertation explored Erich Jantsch's 1969 report in the context of innovation in higher education today. The qualitative, multicase study explored whether or not Erich Jantsch's five crucial innovations can be found to some extent in the innovations of four small institutions of higher education.

Purpose Statement

The purpose of this multicase study was to explore Erich Jantsch's five crucial innovations and determine if they can be found to some extent in the innovations of small institutions of higher education. A better understanding of the innovations of small institutions may shed light on whether Jantsch's predictions were well-founded.

Research Questions

To explore the problem, the following research questions were addressed:

- To what extent are Erich Jantsch's five crucial innovations found in the innovations of four small institutions today?

- What role has leadership played in these innovations?

- In what ways do the innovations today respond to present-day disruptive forces?

- In what ways are these innovations helping institutions to evolve?

- In what ways are institutions integrating innovation in their institutional planning processes?

Research Approach

With the approval of the university's institutional review board, I studied the perceptions of individuals at four small institutions of higher education (IHE). Because Jantsch's five crucial innovations all share a similar base of college-community work, the initial offices were selected based on their contribution and involvement in college-community endeavors. The multicase study used a qualitative approach. This research focused on one main question; "To what extent are Erich Jantsch's five crucial innovations found in the innovations of four small institutions today?". Chapter III of this

study details how Jantsch's five crucial innovations were used to create a qualifying survey, institutional survey, and a prompt for follow-up statements.

The information obtained on each institution forms the basis for the overall findings of the study. Each participant is identified only by office or formal title; no names are mentioned. Interviews were recorded for later reference. The section on findings presents case studies for each of the four institutions that compile the information gathered in a thematic way unique to each institution. The discussion presents, on a case by case basis, to what extent the five institutional innovations are found in institutional endeavors.

Assumptions

Based on the researcher's experience as a higher education administrator and systems scholar, certain assumptions were made. First, it was assumed that Erich Jantsch's five crucial innovations could be found to some extent in some institutions today. Similarities can be found in, not only the disruptive forces of 1969 and today, but also between Jantsch's predicted five crucial innovations and the endeavors found in some institutions today. Current disruptive forces are influencing the kind of innovation needed to take place in institutions today, and it was also assumed that innovations would vary per institution. Second, it was assumed that the discovery of the five crucial innovations is important to Jantsch's legacy, the fields of systems and futures thinking, as well as to inform research on innovation in higher education. While Jantsch is oftentimes cited, he is rarely the focus of dissertations and scholarly work. His work forms the roots to several scholarly fields and this study puts his work in the forefront. The information gathered will also be of interest to other small institutions considering innovation and

7

may suggest alternative innovative approaches or ignite an interest in looking at other fields for innovation inspiration. Third, while it is acknowledged that every institution is different, the institutions selected are similar in size, resources, and location (East Coast). It is assumed that their limitations, as compared to large research institutions, make them an interesting study because of how they have approached their innovation. Fourth, it was assumed that participants would present all of the relevant information needed for the study. Also, the information provided would be subjective and multiple. Relying on a variety of sources helped to triangulate the information provided. Finally, using a qualitative approach to the study provided complementary methods of data collection and analysis. This approach was selected to produce a wide variety and amount of information for each case study.

About the Research

Description of the Researcher

Five years before the writing of this dissertation, I applied to Union Institute & University's Ph.D. program as a means to advance in my academic administrative career. Originally, my research interests included the areas of open learning and alternative forms of credit. Very quickly, however, I came to the realization that applying open learning concepts and alternative forms of credit to the structure of higher education would not remedy the deeply rooted issues that plague institutions. Around this time, by happenstance, I came across Erich Jantsch's report, "Integrative Planning for 'Joint Systems' of Society and Technology- The Emerging Role of the University". I was astounded at the depth of this report. As a director of a center for online learning and innovation at my institution, I could relate to many of the disruptions presented as they

are similar to those today. The lens from which to look at possible solutions to these disruptions was unlike anything that I had read thus far; it was extremely thorough and complete. The suggestion that universities should play a leadership role in the future of society made absolute sense in 1969, and still does today.

Of course, I immediately became curious about who Erich Jantsch was. Unfortunately, Erich Jantsch, the man, is a bit of a mystery. I have spent years researching his life and his work. I have spoken with several individuals who knew Dr. Jantsch personally. I have spoken to some of the organizations and institutions he worked for. None of the leads I have come across were able to provide much background about his personal life. It is unknown if he was married, though many think not. It is unknown if he produced any heirs, though most think not. I also have been unable to produce any family links of value using genealogy methods. The good news is that the work he produced has been substantially documented in academic archives. I have been able to track down most of his documented academic work. I also started a Web page, www.erichjantsch.com, to track the information and conversations that I have had so that others may benefit from it. Eventually, I will probably write a book that compiles a biography of sorts about Jantsch when I do unlock the secret to his past. For now, he remains a mystery.

The research I have done so far has opened up many doorways. I was contacted by a group of systems thinkers associated with the International Society for Systems Sciences (ISSS) because of the public documentation of my research on Erich Jantsch. As a result, I have been collaborating with this group for a few years. I have also had a chance to have conversations with some of the most extraordinary minds in systems and

futures thinking, including Aleco Christakis (another co-founder of the Club of Rome), Dennis Meadows (who sent me an original 1969 report hand-typed by Erich Jantsch), Fritjof Capra, Angela Longo, Wendell Bell, Jim Dator, Eleonora Masini, Jennifer Gidley, Peter Jones, Peter Bishop, Milan Zeleny, Dino Karabeg, Alexander Laszlo, Dennis McKenna, and Ralph Abraham. These are connections I would have never made if I had not documented my work publically online or stumbled upon Dr. Jantsch's report. I am incredibly grateful for these conversations.

I never set out to study the work of one particular individual when I started my Ph.D., but the work found me. I believe many of Erich Jantsch's ideas about higher education are still solutions to the similar pressures that higher education faces today. His work deserves study, consideration, and application, and his many contributions to the fields of systems thinking, futures thinking, sustainability, and higher education warrant him that. I hope that this dissertation can raise awareness about his work and contribute to his legacy.

Significance of the Study and Potential Benefits

Erich Jantsch's name is not one widely recognized in history, but his impact can be found in many fields, including sustainability, systems thinking, futures thinking, and higher education. For example, Jantsch is often credited for playing a crucial role in the transdisciplinary movement in higher education (Witt, 2011, p. 6). Jantsch (1967) also developed a framework for technological forecasting for the Organization for Economic Cooperation and Development (OECD), another highly referenced endeavor. He is most widely cited for his final and greatest systems work, "The Self-Organizing Universe", where he views the evolution of the universe in terms of a unifying paradigm. Lastly and

most profoundly, Jantsch was a co-founder and contributor to the inaugural report for the Club of Rome, an organization that forms the roots for the fields of sustainability, systems thinking, and futures thinking.

Jantsch was a trained astrophysicist, but his dissatisfaction with disciplinary silos led him to consider humanity's impact on the environment, the future of society, and the interconnectedness in our world. Jantsch's 1969 MIT report, titled "Integrative Planning for 'Joint Systems' of Society and Technology- The Emerging Role of the University", was an early attempt to design an integrative approach to institutional planning for societal engineering. The concerns Jantsch identified in 1969 are familiar. Many higher education researchers still question the relevance of higher education, the sustainability of the institutional structure, and the impact of higher education on society. Each institution has taken its own path to respond to societal pressures for change.

In his report, Jantsch proposed, or rather hoped for, five crucial innovations institutions of higher education should implement. While a majority of the research surrounding innovation in higher education focuses on the maneuvers of large universities to respond to today's disruptions, this dissertation focuses on small institutions. It was worth examining whether Jantsch's five crucial innovations could be found in small institutions that have had to react to pressures for change over the past few decades.

Potential benefits to the participants and institutions include being able to contribute to the research on innovations in small institutions of higher education. This includes having the college name and efforts featured in research that could potentially be

further cited and referenced. This study is also an opportunity to study the impact of institutional efforts in other contexts, such as through the lenses of systems thinking.

Definition of Terms

Discipline-oriented departments-- departments oriented toward specific disciplines; Jantsch advocated for discipline-oriented departments that focused on "know-why" versus "know-how".

Function-oriented departments-- take a systems approach; for example: concentrations focusing on human development, environmental control or urban analysis; become the backbone of graduate studies; would contribute to system laboratories; Jantsch predicted that professions of the future would be oriented around function-oriented categories.

IHE-- institutions of higher education.

Integrative system planning-- planning that cuts "across social, economic, political, technological, psychological, anthropological and other dimensions; there are two key notions of integrative system planning: integrative planning for the 'joint systems' of society and technology and socio-technological system engineering" (Jantsch, 1969, p. 8).

'Joint systems' of society and technology-- "the systems of which both society and technology are the constituents, systems of urban living, environmental control and conservation, communication and transportation, education and health, information and automation, etc." (Jantsch, 1969, p. 8).

Know-how-- a specialized approach to education; education for professions of today; lacking a systems approach; a reductionist approach.

Know-what-- determining purposes; encouraging outcome-oriented thinking; provide a deeper meaning to research.

Know-where-to-- determining on what to focus research and activity ; "through inventive contributions to public policy planning and to the active development of new socio-technological structures" (Jantsch, 1969, p. 80).

Know-why-- Consideration for the future for socio-technological and human-technological system engineering versus promoting knowledge only for the here and now.

Long-range forecasting/planning-- assessing courses of action in the present based on future consequences; recognizing "upcoming decision points" in advance; determining alternative courses of action; identifying long-range outcomes.

Pluralism of society-- "bringing the creative energies of the scientific and technological community as well as of the young people, the students, fully into play" (Jantsch, 1969, p. 10); "not for problem-solving, but for contributing to society's self-renewal" (p. 62).

Political institution-- "in the broadest sense, interacting with -- and leading -- government and industry in coordinated efforts to redesign and invent 'joint systems' of society and technology. This service will be remunerated in ways which will make the university independent from charity, grants and other artificial and 'non-rational' types of support, enabling it to become master of its own science policy (including the funding of basic research)" (Jantsch, 1969, p. 12); providing positive leadership in society.

Self-renewal-- guarding against decay; promoting pluralism; "improving internal communication among society's constituents" (Jantsch, 1969, p. 62); providing positive

leadership in society; includes two aspects: "The continuous self-renewal of the university itself, and the education for continuous self-renewal which it gives to its students" (p. 73).

Socio-technological system engineering-- providing leadership that guides society; "application of technology in the context of social systems" (Jantsch, 1969, p. 81).

System laboratories-- 'prime contractors' for concerted university-wide or inter-institutional projects, and a shift toward services based less on development than on socio-technological system planning and design" (Jantsch, 1969, p. 12); a space where students, faculty and staff work alongside community members, government and industry, "emphasizing system engineering in the broad areas of 'joint systems' of society and technology, and bringing together elements of the physical and the social sciences, engineering and management, the life sciences and the humanities" (p. 75).

Summary of Chapter One and Overview of the Dissertation

The dissertation is organized into five chapters. Chapter I provided an overview of the study, including the background and context and key points about the research. Chapter II is composed of the literature review and the conceptual framework. Chapter III presents the methodology for this study. Chapter IV provides the results by case analysis. Chapter V presents an analysis, interpretation and synthesis of the findings. Finally, Chapter VI presents the conclusions and recommendations for further research.

Chapter Two

Literature Review

The purpose of this multicase study was to explore whether Erich Jantsch's five crucial innovations can be found to some extent in innovations of four small institutions of higher education. A better understanding of small institution innovations may shed light on whether Jantsch's predictions were well-founded. In order to provide an understanding of the context, history, engagement, and structure of higher education, the following literature review critically surveys current scholarly knowledge and findings in the areas of American higher education, colleges and their communities, disruption in higher education, and leading innovation in higher education. To conduct this literature review, multiple scholarly sources, including books and journal articles accessed through scholarly databases such as ERIC, ProQuest, and JSTOR, were examined. These sources provide context for the reader (about higher education) and situate the current study (on whether components of Jantsch's crucial innovations are present) in relevant literature.

The review of the literature is organized into the following four sections. The first section includes a brief history of American higher education, further details the three functions of institutions of higher education (IHE), and then describes the differences found in small institutions. In the second section, the history and current approaches of college and community partnerships are reviewed. The third section highlights similarities to the disruptive forces found in higher education in 1969 and today. In the fourth section, the multi-faceted topic of leading innovation in higher education is discussed. This chapter closes by identifying the unique conceptual framework and how this study can address the gap in scholarship.

<center>**American Higher Education**</center>

This section on American higher education is important to this study because it provides background on origins of higher education and how its purpose has evolved over time. In the first part of this section, the inception of higher education in the United States and key points in its history are chronicled. The second part of this section details the three functions of the university, from Erich Jantsch's perspective. A detailed look at small institutions and the unique challenges they face closes the discussion.

History of American Higher Education

Higher education is a centuries old institution. Throughout its many years of existence, it has provided society with successful graduates and contributing discoveries, but also "invaluable intangibles" (Christensen & Eyring, 2011, p. 19), such as social tolerance, personal responsibility, and respect for the law. Long before children would leave home to live on sprawling campuses, the agora (a public open space used for assemblies and learning in ancient Greece) was part of everyday life. The ancient 'university' was composed of teachers who taught out of their homes and were paid per lecture (Rhodes, 2001, p. 2). Centuries later, learning communities were given a formal space for practice. The University of Al Quaraouiyine ("Al-Qarawiyyin Mosque and University," n.d.) is the oldest degree awarding institution still in existence. It was founded in 859 by Fatima al-Fihri, daughter of a wealthy merchant, who constructed the madrasa and mosque to service her community. Though Al Quaraouiyine is a degree-granting institution, many believe it is not truly the oldest university because of its curriculum. The University of Bologna was founded a few hundred years after Al Quaraouiyine in 1088 and is regarded as the first and oldest true university in the world.

It was first recorded to develop a curriculum, a range of faculty expertise, and college units (Rhodes, 2001, pp. 2-3).

In the colonial era, American higher education started as a religious endeavor to train young men for the ministry and many of the first institutions in America were established by religious denominations. This era commenced with the creation of Harvard College in 1636. Like most of the founding American IHE, Harvard had one major benefactor, John Harvard, who also willed his library and estate to the college. Though Harvard University (now made up of two colleges) currently boasts twenty-one thousand ("Harvard at a Glance," n.d.) enrolled students, 380 years ago Harvard College started with only nine registered students. In the 17th century, young men at Harvard University and the College of William and Mary learned with three academic exercises- the lecture, the declamation, and the disputation, because success in that time period required "knowledge, wit, and rhetorical skills" (McCarthy, 2011, p. 12). Towards the nineteenth century, many people began to question the connection between higher education and society. Some believed higher education could play a role in preparing laymen (citizens and societal leaders). One such individual believed in this idea so much that he toiled the last quarter of his life to establish a secular (with no religious affiliation) institution of higher education of his own, the University of Virginia. Thomas Jefferson was involved in nearly every aspect of the creation of the university, including "its development, choosing the site, planning the layout of the 'academical village', designing the buildings, creating the curriculum, selecting books for the library, appointing the first faculty members, and serving as the first rector" (Rhodes, 2001, p. 4). Many of Jefferson's founding concepts for the University at Virginia, established in 1819, can be found in

17

many current IHE across the country, such as majors and choosing elective courses (Crow & Dabars, 2015, p. 127). Another key point in American higher education history is the signing of the Morrill Act in 1862 by President Abraham Lincoln. States purchased land from the government and some of these funds went towards establishing or updating schools in order to, "provide instruction in practical fields to the sons and daughters of the working and middle classes" (Crow and Dabars, 2015, p. 83). Besides funding, the Morrill Act also donated land to each state for this cause. A few years after the Morrill Act was signed, thirty-five-year-old Charles Eliot began his record-breaking forty-year position at Harvard University. In his tenure, he was able to accomplish a great deal, including raising faculty salaries, abolishing denominational requirements, creating courses with required content, and assigning instructors to courses in advance of registration. Essentially, Eliot "established a competitive market based on modular curriculum" (Christensen & Eyring, 2011, p. 294) - an elective curriculum.

The Three Functions of the University

In 1969, Jantsch claimed that while the primary functions of the university are education, research, and service, it is only in the last century that research and service were added to this list of functions. Jantsch argued that these three functions were "patched together" (p. 16), which caused many of the disruptive forces (student unrest, disagreement on university structure and governance, disagreement about the type of research universities should perform, and the dilemma between specialization and generalization). This patching, he said, caused a "blurring" of the "purpose of the university" (p. 17). Jantsch offered his own suggestion, "we have to look at changes, and pressures for change, in all three of the primary functions of the university" (p. 19). This

18

included shifting education from disciplinary to interdisciplinary "geared to the continuous self-renewal of human capabilities, with emphasis shifting from know-how to know-what"; shifting research from disciplinary to complex dynamic systems; and from piecemeal services to "planning for society, in particular, in the planning of science and technology in the service of society" (p. 19). The new purpose of the university, he believed, would be to link these three functions in an interrelated way, which would adapt the traditional structure of the university.

The education function.

Jantsch (1969), stated "the more than 2000 institutions of higher learning in the United States now accommodate more than 6 million students and employ some 400,000 teachers" (p. 21). The number of students enrolled in colleges today has more than surpassed 20 million. Jantsch's point, at the time, was to "illustrate the extent to which university education will determine the future" (p. 21).

Jantsch argued that universities needed to take new approaches to take on the task of lifelong education. Jantsch identified that the approach of duplicating existing skills for specialization "enshrines an authoritarian approach to teaching and learning" (p. 29). He questioned whether this approach is truly education. Students want to do purposeful work, but feel concerned when their education is irrelevant with the problems society is facing (p. 29). Can the same be questioned of students today; whether they are simply being trained for "one-man jobs, solving some piecemeal problem" (p. 30)? Small challenges that expect small responses only create an inability to deal with systemic problems and influence society to focus on material things. Competition impoverishes life, according to Jantsch, and deters people from responding to more complex challenges

of modern society (p. 31) and from developing a "propensity for continuous self-renewal" (p. 30).

The research function.

Jantsch warned in 1969 that there was a gap growing between the education and research functions. The first cause, he noted, was because research is valued highly as "status and reward" in an academic career. The more one gains acclaim from research and publishing, the more academia rewards professors with tenure, appointments, offices, spaces, programs, etc. (Jantsch, 1969, p. 33). The second cause was the changing complexity of research at that time. Even though universities at the time were exploring multidisciplinary departments, the relationships between research and education had become much more complex (p. 36). In 1969, researchers like Jantsch recognized that technology had to be considered in systems-thinking and that technology, too, plays a role in forming society. The effects of society, even at that time, included "transportation, urban living, environmental control, environmental health, communication, automation, information, food production and distribution, power generation and distribution, education, defense, exploration,..." (pp. 38-39). Few of these outcome-oriented categories are reflected in university departments.

Furthermore, Jantsch (1969) proposed that a 'natural bond' between education and research be formed through research for the "purpose of engineering 'joint systems' of society and technology" (p. 38). This proposal is a move away from the kind of research that is focused on finding the "truth", or discovering the "new". It gives an entirely new meaning to the service and education functions, as the university as a whole conceptualizes the future and alleviates the present pressures. This idea is more than the

type of interdisciplinary research seen today where there is a "consolidation of a number of traditional academic departments" (Crow & Dabars, 2015, p. 63). Jantsch (1972) proposed this interdisciplinary research should guide "the organization of society and technology in a systems context" (pp. 228-229).

The service function.

One of Jantsch's critical arguments is that the university does not lead society into the future (p. 50). The role that Jantsch insisted universities play must be done with strategy, through "the integrative planning for the 'joint systems' of society and technology", taking a "broader look", "assessing alternative ideas", and "promoting experiments and ... new strategic options" (p. 56). This is a new take on university service. Jantsch encouraged universities to take an active interest in their surrounding community by planning for it in an "imaginative and possibly continuous way" (p. 59) but in a way that develops community leadership. Part of this effort includes universities creating "system laboratories" where they can create a kind of student education that includes "purposeful work" and increases "lifelong-learning education" (p. 60). Here, faculty and students will have a chance to tackle some of society's biggest problems, and will develop qualities to become "social system engineers" (p. 59) alongside local professionals.

The Small Institution Difference

Historically, universities looked more like liberal arts institutions, but many liberal arts institutions have also incorporated the functions of research and service in the past fifty years. There are differences in the way small institutions practice education, research, and service functions. Where universities address the masses in the state and

region, small institutions have a direct connection with their surrounding communities. They are the "largest economic engine [communities] have to supply prosperity, jobs, and cultural activities to the businesses surrounding the college" (Docking & Curton, 2015, pp. 1-2). Taking a small institution out of the community equation would mean a loss in "restaurants, bookstores, markets, customers, and small retailers" (pp. 1-2). It also means limiting higher education options for the surrounding area. Small institutions can offer an educational experience different to what is found at universities. Small classroom sizes offer more personal attention with dedicated faculty members (p. 1). These community contributors and options for students are now at risk. Some of these community-based institutions have been operating for over 150 years (p. 3). Though they have "survived wars, the Great Depression, epidemics, and natural disasters" (p. 3), over 30 small institutions have closed their doors in the past 10 years (p. 2). The funding that was once present to build them (whether from church, state, or investments from founding fathers) is now limited and the complexity of needs these institutions hope to support far surpasses tuition revenue. While universities partially subsidize their service and research functions with taxpayer dollars and contracts, most small institutions are tuition dependent. Small institutions have had to decide how to evolve with decreasing enrollment, rising costs of services, and the rapidly-changing needs of society's future generations. There have been hard decisions to make about which personnel, resources, and programs to consolidate. All of this comes at a time when accreditation requirements are stronger and more complex than they have been previously (Christensen & Eyring, 2011; Selingo, 2013). When faced with similar challenges, small institutions have had to

be resilient and innovative. Such innovations are worth studying in order to contribute to the gap found in higher education research.

Colleges and Communities

This section on colleges and communities is important to this study because it details the reciprocal relationship that colleges and their surrounding communities share. The first part of this section discusses the history of college and community partnerships. The second part of this section looks at how these partnerships exist today.

History of Colleges and Communities

Non-secular and secular models of higher education alike, evolved to follow the German-born Humboldtian model in the twentieth century. Wilhelm von Humboldt believed in a process of education that engages the student and "embraces the dimension of the ethical citizen in society and thus service to the community" (Crow & Dabars, 2015, p. 79). There were many contrasts in this model, one of which was that "all subjects were theoretically equal" (Brockliss, 2000, p. 150) and that universities became a space of knowledge creation, not just knowledge dissemination. As this model began to sweep across Europe and eventually to the United States, universities began to partner with their local communities to use their community as a laboratory (Brockliss, 2000, p. 160). In the nineteenth century, professors were readily called upon for medical advice, as well as to offer advice on crime prevention or finding a solution to poverty (Brockliss, 2000, p. 160). Some institutions have continued to adapt by offering adult-education and outreach programs, working more closely with local businesses and industry to offer advice, and garnering financial support for research (Brockliss, 2000, p. 161). As society evolved and required attention in different ways (medicine, equal rights, technology

advancements), universities adapted their programming and structure to best serve the needs. It was also later in the nineteenth century that we saw the solidifying of the current structure of IHE in the United States -- degree granting, residential campuses, liberal arts and sciences, as well as graduate and professional schools (Rhodes, 2001, p. 7). A variety of approaches also came about in the twentieth century to help meet the goal of public service.

Current Approaches

Most partnerships today between IHE and communities are taking place in urban areas (Maurrasse, 2001, p. 2), even those that have not prospered over the past century. Even as some surrounding neighborhoods experience hardship (housing, crime, dilapidation), colleges remain because they simply cannot move; their acreage and "geographical interest vested in their surrounding communities" (p. 20) is too great. For those colleges that have made an attempt to isolate themselves from their community, through "walls and expanded police forces" (pp. 4-5), they did nothing but create tension between their neighborhood and the institution. Contributing to tension and unfairly making community members feel unwanted is not only unjust, it is futile. The fate of communities is the fate of the college (pp. 4-5); there is no institution without the neighborhood. Colleges, too, are impacted by the state of their communities and are at a "competitive disadvantage" (p. 33) against colleges with vibrant communities. College/community partnerships "force us to think about the overall purpose of higher education" (p. 2). How do the partnerships of the past and present influence IHE to respond to today's issues? How are, "affirmative action, tenure, and curriculum" tied to the broader relationship between academia and society (p. 2)? Such partnerships "have

the potential to create a smarter higher educational system" (p. 16) that is knowledgeable about the issues and that adapts to meet the needs of society. Partnerships with the community provide an avenue to relevant information that institutions can leverage, but they can only adapt to meet the needs of society if they are willing and able.

There are organizations and consortiums established to assist institutions with collaborating with their communities. Campus Compact is an organization that provides resources to help institutions with campus engagement, including training for administrators, student civic learning, and faculty development (Beere, Votruba & Wells, 2011, p. 27). Penn State partners with over thirty IHE around Philadelphia in the Philadelphia Higher Educational Network for Neighborhood Development (PHENND) Consortium. They seek out grants for the benefit of the consortium and assist faculty with course development (p. 50). Through better coordinated efforts to carry out a new focus for higher education, institutions can co-create the future of their surrounding communities. Preferred futures are not achieved through piecemeal efforts, but through coordinated efforts to co-develop a preferred future. Penn State, for example, also assists the Philadelphia School District with academic support and partners with local businesses to offer Summer internships to local children (p. 41). The institution leverages its Ira Harkavy (now Netter) Center for Community Partnerships to manage most of its community partnerships. The Center is mapping the community and all of the players in it, including churches, schools, local public agencies, local nonprofits, and businesses (p. 43). Penn State is not the only college building futures with its community. Boston University manages the Chelsea School District, for example; a partnership established in 1989 to reform and revitalize the school district ("Boston University / Chelsea

Partnership." n.d.). Market New Haven is a collaboration between Yale, the city of New Haven, and local businesses to coordinate and market the arts, dining, and retail in the city ("Home | InfoNewHaven." n.d.). Lastly, the University of Southern California partners on many levels with the communities of Los Angeles to "create better schools, safer streets and a greener, more beautiful environment" ("University Park Campus Master Planning". n.d.).

Disruption in Higher Education

In 1969, Erich Jantsch said "we are baffled by the sudden appearance in the educational system by student unrest and by the notion that the current type of education may no longer be relevant" (Jantsch, 1969, p. 6). At the same time, "we are confused by the degrading side effects of technology on the systems of human living, in the cities as well as within the natural environment" (p. 7). Third, he said that we are "ridden with doubts" (p. 7) about the lack of systems and futures thinking. Universities, he said are deeply affected by these pressures for change through its three functions: education, research, and service. These disruptive forces are still visible in higher education today.

This section on disruption in higher education is important to this study because it examines Erich Jantsch's work including the definition of disruptive forces and their presence in society today. The first part of this section looks at student unrest and questions about the relevance of higher education. The second part of this section discusses the impact of technology on society and on higher education. The last section discusses the historical and present lack of systems and futures thinking in society and in higher education today.

Student Unrest and Relevance

John Carroll University would be considered a small institution using the definition presented in this dissertation. What makes it remarkable in this particular story is that, as a Jesuit institution, John Carroll is also an institution "committed to pluralistic education that seeks and recognizes diverse perspectives" (McWeeny, 2016, p. 69). Three weeks into the Spring 2010 semester, a group of students staged a protest at a basketball game in support of changing the university EEO (equal employment opportunity) policy to include gay, lesbian, and bisexual orientation (p. 70). What followed were weeks worth of follow-up protests and letters between students and faculty, and the college President at the time, all in an attempt to evolve an unchangeable stance of a centuries-old institution, the Catholic Church. All of the 28 Jesuit Catholic US IHE are caught, similarly, between upholding tradition and evolving to expand their definition of social justice to include policies that represent today's mindsets, lifestyles, and medical coverage.

Colleges across the United States are experiencing student unrest in support of racial diversity. One article (Wong & Green, 2016) documented racial-protest events at 9 institutions across the United States, including Harvard, Yale, Princeton, and Brown. Many of the student-driven protests call for these institutions to abandon campus symbols that include reference to historical figures who owned slaves or supported segregation and organizations like the Ku Klux Klan. Many of the protest movements called for more support for students of color, revising the curriculum to raise cultural awareness, and hiring more faculty and administrators from diverse backgrounds. In some cases, opposing racially charged events occurred simultaneously, including the drawing of racist

27

text and imagery across campuses and the banning of people of color from private student events. The schools featured in the article have all taken measures to address the protests and racist actions on campus through new hires, the creation of diversity-supportive centers, or the stepping down of campus leaders.

While these are examples of unrest situations occurring on campuses today, many higher education scholars point to other reasons in order to question the relevance and antiquatedness of higher education. First, some believe there is a disconnect between students and institutions. Some of today's students focus much on their future career over "acquiring a meaningful philosophy of life" (Bok, 2006, p. 26) which is in direct conflict with "professors who value knowledge for its own sake" (p. 36). Others question why colleges are not preparing students for the interconnected, diverse, and global society found in person and online, and instead are preparing students for our past (Bok, 2006; Davidson, 2012).

Second, the issue of the costs associated with higher education is well cited in higher education studies. The rising costs are due to a variety of recent factors, including advertising, accreditation, employee benefits, student support staff, amenities, and personalized attention. At the same time, states have cut appropriations during each downturn in the economy (Selingo, 2013, p. 62). The structure of higher education is also not a versatile one. Administrative structures and spaces like centers and institutes are hard to dismantle, making them permanent fixtures in the institutional budget long after donations, grants, and one year's capital funds have run out. Even more difficult is the repurposing of faculty and staff members. Institutions are collections of highly

specialized talents that cannot be readily shifted from teaching Russian to teaching

economics, or from running student events to coding dashboards (Bowen, 2013, p. 11).

Many higher education scholars have criticized institutions of isomorphism,

"Harvardization", filiopietism, and the like (Christensen & Eyring, 2011, Crow and

Dabars, 2015). The symptoms include being highly selective with applicants, promoting

the unquestionable 'great books' curriculum, aligning with institutional rankings such as

U.S. News & World Report, and the constant aim to climb the 'Carnegie Ladder' (Crow

& Debars, 2015). It is hard for institutions to stay relevant and be innovative when the

institutions they are comparing themselves to are not.

Technology's Impact

In 1969, a committee of MIT faculty invited Erich Jantsch to discuss the future of

the institution, with a particular emphasis on technological forecasting. He encouraged

the group to think more broadly about the university's role in shaping the future (Jantsch,

1969, p. 1). He put his ideas together in the 1969 report that this dissertation references.

Jantsch was concerned that advancements in technology could have a degrading side

effect on human life and the environment (Jantsch, 1969, p. 7). Many people are still

concerned about this point. Some believe that technology has altered the self-sufficiency

of society and that we rely on everyone else for our food (Toffler, 1980, p. 50). Another

point is that technology has caused uninhabitable lands to be built up with skyscrapers

and infrastructure. This does not always mean a better use of the land. In some cases,

forcing uninhabitable land to be inhabited only puts people and the environment at risk

later (Forrester, 1971, pp. 129-130). Another degrading side-effect of technology is

diminished face-to-face interactions. When people interact online, they create a new

virtual self that can continue to interact with other virtual selves when the physical self is at work or sleeping. What does this do to our personalities (Toffler, 1980, p. 406)?

Technology has not only changed the way we live, it has also changed the way we work. Forty years ago, the tools that took up a whole office space can now be found in one computer. The more compact and minimal the requirements become for completing workplace duties, the more mobile employees can be. As some authors point out, this is not necessarily a good thing. Thanks to mobile devices, our work follows us home, creating a 'time famine' to spend with loved ones (Florida, 2014, p. 127). Many people do not see a separation anymore between work and home since technology has allowed, not only for their work to follow them home, but for their home affairs to follow them to work now that online banking, family texts, and even Internet games can find us in the workplace (Davidson, 2012, p. 168). Some have questioned whether it is time to be concerned with the consequences of technology and to reevaluate its continued development (Moavenzadeh, 2006, p. vii). This is precisely the argument Jantsch made fifty years ago. Higher education, he believed, should take part in socio-technological system engineering using an interdisciplinary approach to answer some of these problems and resist some of the consequences.

Lack of Systems and Futures Thinking

In 1968, there was a gathering of minds in a Roman villa. The group would come to be known as The Club of Rome. They met to discuss and document shared concerns about the future of humanity. A few attempts were made at documenting these concerns, including a first attempt with the contribution of Erich Jantsch. It projected the impact of exponential growth on finite resources. This report can be seen as the concrete impetus of

three major areas of study: sustainability, systems science, and futures studies. Still thinking about these connections, Jantsch (1969) continued to be concerned a year later when he wrote about the lack of systems and futures thinking in society (p. 7).

Though two different fields, systems and futures thinking are very much tied. The basis of systems thinking is a system, which is a group of parts that function as a whole (Ollhoff & Walcheski, 2002, p. 14). Thinking in systems involves looking at a whole system and the interacting parts of it (Ollhoff & Walcheski, 2002, p. 16). A system is whatever it is designed to be. Cybernetics is an intentional design and influence on a system through countermeasures (Ollhoff & Walcheski, 2002, pp. 16-17).

It was not until the 1960s that individuals, much like cyberneticists, who later became known as futurists and futurologists, began to identify that, "man holds the options in his hands to shape his own future" and can intentionally "aim at alternate 'futuribles' (possible futures)" (Jantsch, 1972, p. 2). Like systems, possible futures are impacted by a variety of "interlocking ... global problems" (Slaughter, 1993, p. 257). The term, "world problematique" was coined by the Club of Rome to describe the predicament mankind finds itself in due to these interlocking problems that include, "pollution, overpopulation, loss of biodiversity, deforestation, armed conflict, starvation, and the widening gap between the rich and the poor" (Slaughter, 1993, p. 257).

The world problematique is still present today. Jantsch (1969) believed that institutions could align its functions to examine and plan for complex dynamic systems (p. 19). Transforming the three functions of higher education to work in this way would also prepare students for the more complex and interrelated future they will face. Cybernetics is a way of looking at systems where one element can consciously impact

other elements. Therefore, what Jantsch is really saying is that man possesses the capacity to actively shape his future. While it is a more common thought now to believe that individuals can play a role in their future, as cybernetics has shown us, it is a less common thought that small, IHE should play a leadership role in their communities, helping to shape that shared future.

Leading Innovation in Higher Education

This section on leading innovation in higher education is unique to other research on innovation in higher education because it looks at the topic through the lens of leadership theory. The first part of this section discusses disruption seen in other industries in order to provide context for innovation in higher education. The second part of this section describes the unique political arena of higher education. The third section looks at the pressures for change. The fourth section looks at a resistance for change in higher education. Finally, the last section looks at the role of leadership in leading change.

Innovation in Other Industries

Due mainly to the advancements in technology, there has been unpredicted disruption in industries that were seemingly stable. The first to note is that of the newspaper industry. In the nineteenth century, newspapers began to move away from being an "intermediary between the people and the state" and, instead, decided to speak at people (Jarvis, 2011, p. 87). Newspapers built an empire on curating news and information. Big-name publishers used to be the judge of what was published and when. Now people can publish content themselves on the Web for free. This phenomenon is called "mass amateurization", where the question no longer is "Why publish this?" and

is, instead, "Why not?" (Shirky, 2008, p. 60). Additionally, sites like Wikipedia offer a

collaborative element to public news. In the case of the 2005 London bombings, a

Wikipedia page received over a thousand edits in the first four hours (Shirky, 2008, p.

116). Instead of a product, "a Wikipedia article is a process" (Shirky, 2008, p. 119) and

may never be finished. This changes the way we document the news and the

responsibility we have to provide a complete narrative as more information unfolds in the

future. The Internet has essentially created a new "ecosystem of information" (Shirky,

2008, pp. 55-56).

The tale of the newspaper industry is just one example of similar dramatic

changes that we have seen in many other content industries. The many others include the

printing press and moveable type, the telegraph and the telephone, records to CDs and

now digital music, and from radio to podcasts (Shirky, 2008, p. 106). In most of these

industries, the middleman is cut out. People can create and market their own content,

such as music, videos, and Internet radio (Shirky, 2008, p. 23). Many of these industries

have failed to see the writing on the wall and their customer bases have been cut

exponentially. Some researchers say that the reason that industry leaders fail to move

their organization forward is because they ignore what is happening right under their

noses (Christensen & Eyring, 2011, p. 16). Many of these traditional businesses are

faltering. This occurrence is called disruptive innovation (Christensen, Horn & Johnson,

2008). It is not a breakthrough in doing business, but a different kind of innovation

altogether. Disruptive innovation theory is used to explain why some organizations fail to

adapt and others succeed through innovation (Christensen, Horn & Johnson, 2008, p. 45).

Many of these industry changes are connected to content providers and some question

whether colleges are the next industry to experience changes (Selingo, 2013; Christensen

& Eyring, 2011). Some researchers have looked at higher education through the lens of

disruptive innovation theory and they see that universities are, in fact, the next industry to

face a choice (Christensen & Eyring, 2011). Will they innovate or will they stay their

course and risk the consequences?

The Unique Political Arena of Higher Education

The political frame is a frame from which leaders can view their organizations

and portrays a loud arena that contains a "complex web of individual and group interests"

(Bolman & Deal, 2003, p. 186). There are five assumptions with this frame. First,

organizations are a collective of "diverse individuals and interest groups" (p. 186).

Second, the collective members have different "values, beliefs, information, interests, and

perceptions of reality" (p. 186). Third, individuals and groups fight over the "scarce

resources" (p. 186). Fourth, as a result of the third point, conflict is central in daily affairs

and power is everything. Fifth, like politicians, people and groups get a piece of the

scarce resources through bargaining, negotiation, and jockeying for new positions (p.

186). Seen through the political frame, higher education can look like a jungle or arena.

Those who either possess high positions or information possess some degree of power.

There are scarce amounts of resources (money, talent, attention). Naturally, conflicts

arise when different personnel fight over the resources. Power is really at the heart of

everything. While the college has a goal to graduate students, leaders and followers all

fight for some degree of power that gives them an edge over everyone else. Every

meeting is an opportunity to gain a little more power, including decision-making,

organizing, and evaluating. Power is gained through manipulation and bargaining. As

traditional bargaining would say, individuals and groups must possess something that others want in order for them to gain power. The trick in an organization is finding out what people need that is hard to produce. Although the political frame would still show a strong hierarchical chain of command, it would also show those who have power outside of this normal chain of command due to the information they possess or the people they know in the hierarchy. One leadership challenge is to possess enough power to be sought out and to maintain that power. Also, every leader in the political frame would have a personal agenda they work towards. They would use advocacy and negotiation to carry out that agenda.

Though there is much that has been said and studied about leaders in the business world, the way in which we must examine leadership in higher education is decidedly different. A campus can be reduced to employees and customers, but the facets that make up these populations are complex. Within the employee group are subcultures of upper administration who fight to keep the balance of resources, tenured faculty members who fight for shared governance, everyday staff who fight for a yearly raise, disconnected adjuncts who fight to be recognized, students who fight for recognition, and facilities workers who side with the union. The potential customers are not just students but whole families who are making a large financial decision (investment) and expect the institution to prove its value. Not only do internal groups fight for their own share of resources, they must fight as a collective with external constituents since they "depend on their environment for the resources they need to survive" (pp. 228-229). Larger than even this organizational ecosystem lies the societal ecosystem (pp. 233-234). Who is the referee when institutions must answer to the needs of society?

35

Pressures for Change

Many persuasive arguments have been written in the past decade to suggest that the current approach to higher education requires some adjustments. These conversations include the need to reexamine the current higher education model, including faculty tenure and administrative bloat (Taylor, 2010). Second, the cost of college and the debt that students incur is also a major discussion, with some arguing for increased productivity through reducing costs and increasing completion rates (Bowen, 2013). Third, there is still a contrast between those who argue for an end to vocational training (Hacker & Dreifus, 2010) and those who argue for a stronger commitment to create interdisciplinary spaces that transform traditional universities in order to involve students in servicing their communities (Davidson & Goldberg, 2010, p. 4). These arguments and discussions reflect the disruptive forces that currently threaten higher education, but also speak to the concern that higher education may not be responding to the evolving needs of society.

It is true that although our world has changed around us, very little about higher education and the ways in which students are educated has changed. Graduates must possess the ability to work with people from cultures different than their own, in work and in daily life (Nussbaum, 1997, p. 115). Many of today's societal expectations stem from the values needed to be a citizen in this interconnected world. While some positions have been replaced by technology, there are some things that technology cannot replace just yet, including the way students will have to think in groups and in project planning (Davidson, 2012, p. 77). Writing is still a major concern of some researchers who believe that the skills to "write with precision and grace" and "speak clearly and persuasively"

are essential for civic life and in nearly every career choice (Bok, 2006, p. 67). With what may seem to be the indefinite impact of the Internet and technology on society, it may be hard to teach students everything they need to know to be world citizens. Instead, we must "teach them what they do not know and how they may inquire" (Nussbaum, 1997, p. 295).

Though it cannot teach students everything, the Internet has changed how people gain access to information. The Internet now offers a way for current students, graduates, and professionals to fill in the gaps in their training. Individuals can learn anything from how to write code to public speaking, on the Web and in Web-instigated meetups (Selingo, 2013, p. 119). The technology revolution "has enabled any work that can be digitized to be performed virtually anywhere on the globe" (Bok, 2006, p. 4-5). Some occupations today involve collaborating with colleagues around the world. Students must know how to leverage the power of a new kind of Internet that is allowing people to participate. Tools, like Google, meet us whenever and wherever we are (Jarvis, 2009, p. 36). What does it mean for higher education, traditionally known as the gatekeeper of information, when society and today's students expect to be granted control to use these tools (Jarvis, 2009, p. 11)? For a long time, higher education controlled access to higher knowledge, in libraries and minds (Rhodes, 2001, p. xii). They also used to control accreditation, graduation, and certification, accessible only through their rules of "place, time, style, and substance" (Rhodes, 2001, p. xii). Many of these traditions have been challenged by new competitors made possible by technological advancements.

Higher education has a crucial role to play in American society now that technology has influenced the ability to perform jobs virtually. If we fail to prepare our

American students for the future, eager workers around the world may step in to take their place (Bok, 2006, p. 5). Likewise, if colleges are unwilling to meet the needs of societal and student demands, the Internet now provides options for students looking to learn (Selingo, 2013).

Resistance to Change

Administrative positions have grown significantly over the past several years, due to a dedication to student success and meeting regulations, among other things (Hacker & Dreifus, 2010, pp. 33-34). As institutions try to recruit and retain leaders who are qualified, they must compete on salaries, some of which have more than doubled in twenty years (Hacker & Dreifus, 2010, p. 119). This new compensation factor is a hard one to change and overall salaries significantly add to the financial burden of students. As has been criticized, innovation should be reducing administrative costs, not adding to them (Crow & Debars, 2015, pp. 139-140). When administrators decide that change is needed, it can be at the expense of faculty traditions. The suggestion of many scholars is to replace lifelong tenure with multiyear contracts (Hacker & Dreifus, 2010; Rhodes, 2011), but abolishing tenure is a cause very few presidents and administrators would champion. Another issue is shared governance between faculty and administration. While faculty members understandably want to be consulted on academic changes, this request may overstep the bounds of administration (Hacker & Dreifus, 2010).

The higher education institution is a unique balance of players. Traditional management approaches to organizations will not work in academia. The divide growing between groups within institutions destroys the community and results in a lack of meaningful dialogue (Rhodes, 2001, p. 47). Without dialogue, there can never be a

resolution and true change. Higher education leaders must find ways to cut through the layers of constituents and lead change.

Institutional Leadership

Institutional leadership is a significant and defining factor for institutions seeking to navigate through the pressures for change and reconcile the resistance to the change that is needed. Throughout the history of higher education, many leaders have emerged to create their own leadership style and work against the grain to evolve their campus, starting with Charles Eliot. Eliot is credited with his gift of administration (Christensen & Eyring, 2011). A few years after the Morrill Act was signed, thirty-five-year-old Charles Eliot began his record-breaking forty-year position at Harvard University. During his tenure, he was able to accomplish a great deal, including raising faculty salaries, abolishing denominational requirements, and assigning instructors known in advance to students (Christensen & Eyring, 2011, p. 294). Many presidents of IHE since Eliot have improved upon the founding principles of higher education in order to better meet today's needs. Clark Kerr, former President of the University of California system for nine years, is often cited for his 1960 California Master Plan, a plan that organized the two-year community colleges, four-year California State University, and the Ph.D. granting University of California into a tiered system (Crow & Dabars, 2015, p. 134). Though it has changed since, the plan also insisted on free public college education for every student. Another Harvard President, Derek C. Bok, used his twenty years as President to bolster the community service of the campus. Bok was an advocate for social responsibility and public service. When his Harvard presidency came to a close, 60% of its students were engaged in public service (Christensen & Eyring, 2011, p. 173).

39

Michael Crow, president of Arizona State University for the past fourteen years, is highly referenced for transforming the university "from a sleepy public university to a test bed for new ideas" (Selingo, 2013, p. 1). One of his main claims to fame is eliminating more than four departments and replacing them with new schools or departments (Thorpe & Goldstein, 2010, p. 69), something unheard of in higher education. These new institutes, schools, and departments are mainly interdisciplinary in nature and address problems that plague our world, such as the Global Institute of Sustainability which houses scientists, scholars, many projects, and the School of Sustainability (Martin & Samels, 2012, p. 28). Lastly, Paul LeBlanc, president of Southern New Hampshire University, turned toward the online education and competency-based methods to help underserved students meet their goal of earning a higher education degree, while helping to evolve a failing institution (Selingo, 2013, p. 115). Kerr, Bok, Crow, and LeBlanc all have two things in common, sticking around at their institutions long enough to make something happen and adapting their institutions to better meet the needs of society. Each of these presidents created a leadership style all their own in order to adapt their campus and they are proof that futures can be created with intentional change leadership.

Gap in the Scholarship

Gaps in the scholarship currently exist. First, it has already been mentioned that research on innovation in higher education is traditionally focused on large institutions. When faced with similar challenges, small institutions have had to be resilient and innovative. Such innovations are worth studying in order to contribute to the gap found in higher education research. Second, the higher education work of Erich Jantsch has not received much attention in the context of innovation in higher education. Though his

work has been cited in the contexts of library sciences (Witt, 2012) and has been criticized for his take on transdisciplinarity (Newell, 2013), there is not an abundance of prior research using his ideas as a means for study of innovation in higher education. Even though there are many valid areas of his work for inquiry, this lack of prior research may be due to Jantsch's work being inherently interdisciplinary. Systems sciences and higher education are two different fields. Applying systems thinking to analyze innovation in higher education is something that has rarely been done. Scholars point out that it takes effort to engage and understand another discipline and the institutions of higher education that support academic research are not structured for interdisciplinary activities or research support (Lynch, 2006, p. 1121). In addition, the places where such research would be published are oftentimes not open to interdisciplinary research (Lynch, 2006, p. 1122). This study helps to bridge the gap between systems science and higher education research, as well as highlight the work of Erich Jantsch in the context of innovation in higher education.

Literature Review Summary

The purpose of this literature review was to provide an understanding of the context, history, engagement, and structure of higher education. It critically reviewed the topics of American higher education, colleges and their communities, disruption in higher education, and leading innovation in higher education. All of these factors should be taken into account when examining innovation in small institutions. First, IHE in the United States have already faced one substantial evolution. Though they were originally established as religious institutions with a sole purpose to train young men for the clergy, they evolved to address the needs of the larger population, including that of different

races and both sexes. As a result, the curriculum has changed from a limited one that was prescribed, to an elective system featuring choice. As the curriculum evolved, so did the structure of higher education which now includes three functions, including education, research, and service. The pressures present in Jantsch's time and still present today question whether higher education is due for another evolution. Jantsch's (1969) primary argument is that higher education should be an active participant in "leading society into the future" (p. 50).

Second, higher education has faced much disruption over the past decade and many of the disruptive forces that Jantsch wrote about are still present. In 1969, Jantsch urged institutions to consider these disruptive forces and rethink their purpose. Change is never easy in any industry, especially one that is centuries old. The education function of higher education has become particularly cumbersome to navigate and resistance can be seen on many fronts. Yet, there are leaders in higher education to look towards who have managed to create a new future for their institutions. Not all institutions have been so lucky, however. Many have tried to adapt to these mounting pressures for change using the same approaches they have been taking for the past century. For these institutions, continuing on the same path has been their downfall.

Third, the new purpose that Jantsch suggests includes IHE partnering with society and to co-create a new future with surrounding communities. Although IHE have a history of partnering with their communities, Jantsch questions whether piecemeal efforts really have a substantial impact. Current research about successful college-community partnerships supports this point; a campus commitment to community engagement must permeate throughout the institution. Jantsch proposed the five innovations to help

institutions move into a leadership role in society. If there is still such a leadership role in society to fill, higher education is still well situated to fill that gap. Although Jantsch made this request for universities, the question remains if he would hold the same expectations for small institutions. These institutions have had to be innovative in the ways they have adapted to disruptive forces because of their minimal funding and resources. Such innovations are worth studying in order to contribute to the gap found in higher education research. This study does so through Jantsch's own framework.

Conceptual Framework

The review of the literature combined with the special interests of this study have contributed to developing a conceptual framework. This framework helped to focus the research process, influenced the research questions, and informed the design of the study. Each point of the conceptual framework is directly related to a research question and is influenced by the literature review. To summarize, the first research question seeks to know to what extent the five crucial innovations can be found in four small institutions. The second question is concerned with the role leadership has played in innovation in these institutions. The third question seeks to determine whether or not the innovations respond to disruptive forces. The fourth question explores to what extent these innovations have helped these institutions to evolve in the way Erich Jantsch defined in his 1969 report. Finally, the fifth question asks how institutions are integrating these innovations in their institutional planning.

The conceptual framework includes five topics that correspond to the research questions, including crucial innovations, leading innovation in small institutions of higher education, disruptive forces, self-renewal, and integrative planning. The research process

used Erich Jantsch's five crucial innovations to guide the study and to create the main survey of the study, in particular. Each institution studied is carrying out these innovations differently and such leadership was also considered. Jantsch was particularly concerned with the five innovations presenting answers for disruptive forces that plagued institutions and society and this research explores whether or not the innovations respond to disruptive forces. Jantsch believed the presence of such innovations would indicate that institutions are evolving and this belief is also reflected in the research. He considered his definition of evolution to be synonymous with the concept of 'self-renewal', a concept borrowed from a book titled with the same term and written in 1964 by John W. Gardner, former U.S. Secretary of Health, Education, and Welfare. Finally, Jantsch was in favor of integrative planning and this research also recognizes the integration of the crucial innovations in planning efforts.

Crucial Innovations

Erich Jantsch was born in Vienna, Austria in 1929 and died in Berkeley, California in 1980. He was one of the founders of the Club of Rome and his academic work made a significant impact on the fields of systems thinking, futures thinking, sustainability, and higher education. Though he was originally trained as an astrophysicist, he quickly saw the connectedness in life and the planning that was needed to create a better future. Though his later work focused on self-organizing systems, his early work focused on technological forecasting and transforming the university. Higher education continued to be a factor in Jantsch's writings throughout his scholarly work.

In "Integrative Planning for the 'Joint-Systems' of Society and Technology—The Emerging Role of the University", Jantsch (1969) points out disruptive forces that are

still found in higher education today, including student unrest, the degrading side effects of technology, and the lack of integrative planning for the future. Universities, he said, are deeply affected by these pressures for change through the three functions, including education, research, and service. In 1969, he called on universities to lead the process of transforming disruptive forces to cohesive ones in a new leadership role, because "no other institution is equally well qualified and legitimized" (p. 7). He believed universities have the "unique potential for enhancing society's capability for continuous self-renewal" (p. 9). As for this new leadership role the university takes on, it must pertain to all three functions of the university: education, research, and service- blurring "the overall purpose" (p. 9). For higher education to serve in such a role, Jantsch hoped for the following institutional innovations:

1. a new purpose of the university that enforces the pluralism of society by weaving creative and technological energies in society and education, helping to transform conversations from science and technology into long-range planning objectives, assessing possible futures, providing positive and productive leadership, and educating leaders for society (pp. 10-11).

2. shifting activities at the university toward "socio-technological system engineering" (p. 11) and futures thinking in regard to the 'joint systems' of society and technology.

3. altering the structure of the university into three types of interacting structural units: "system laboratories" that plan and design systems, "function-oriented departments" (function/mission of technology in the context of societal systems), and "discipline-oriented departments" (custodians of basic disciplines).

45

4. emphasizing operating principles to focus on training toward purposeful and

useful work, diversifying engineering education, acceptance of the "essential role

in lifelong education", focus on technological and socio-technological research,

and "the active and integral engagement" through "system laboratories" (p. 11).

5. a more active relationship between the new university and society (p. 13).

The disruptions to which higher education has been adapting to over the past few

decades are reminiscent of the disruptions in 1969. It is worth studying whether or not

Jantsch's ideas did come to fruition. The following table further defines each of these

innovations.

1. A new purpose of the university that enforces the pluralism of society by weaving creative and technological energies in society and education, helping to transform conversations from science and technology into long-range planning objectives, assessing possible futures, providing positive and productive leadership, and educating leaders for society (pp. 10-11).
Jantsch argued that the new purpose of the university may be found in the "decisive role it plays in enhancing society's capability for continuous self-renewal" (p. 62). An institution "must engage in this task as an institution" (p. 64), not solely through its constituents (faculty, students, alumni, etc.). The world system is always in flux, in part due to the unpredictability of the world in which we live. The healthiness of our system must constantly be reassessed. This new vision of the university creates a "strategic center for investigating the boundaries and elements of the recognized as well as the emerging 'joint systems' of society and technology" and for "working our alternative propositions for the integrative planning aiming at the healthy and stable design of such systems" (p. 64).
2. Shifting activities at the university toward "socio-technological system engineering" (p. 11) and futures thinking in regard to the 'joint systems' of society and technology.
Jantsch predicted that this new purpose will require the following changes: • "Principal orientation toward socio-technological system engineering at a high level, leading to emphasis on generalization rather than specialization of education and research;   • Emphasis on purposeful work by the students rather than on training;   • Organization by outcome-oriented categories rather than by inputs of science and technology, and emphasis on long-range outcomes." (p. 64)   Although this means that the disciplines within the institution must think more inter-

disciplinarily, Jantsch argued that this "task is to mobilize all energies and all knowledge for a concerted effort to shape actively our future" (p. 65).

3. Altering the structure of the university into three types of interacting structural units: "system laboratories" that plan and design systems, "function-oriented departments" (function/mission of technology in the context of societal systems), and "discipline-oriented departments" (custodians of basic disciplines).

Jantsch believed that the structure of the university would need to change to compose a coordinating unit for the interaction among three types of units:

- System laboratories (Know-where-to) that identify systems of future concern, are responsible for exploratory and experimental system building at a smaller scale, and provide opportunities for potential professionals who will practice self-renewal.
- Function-oriented departments (Know-what) would be "mission-oriented departments" (p. 77) that take an "outcome-oriented look" (p. 77) at the functions technology performs in relation to society, i.e. housing, public transportation, power generation, educational technology, communication, food production (p. 77). These also would develop technological options (pp. 77-78) and work on technological forecasting (p. 78). Finally, they would be responsible for the assessment of the system-effectiveness of technologies in the context of social systems (p. 78).
- Discipline-oriented departments (Know-why) would be smaller and more "more sharply focused" (p. 78) on discipline.

4. Emphasizing operating principles to focus on training toward purposeful and useful work, diversifying engineering education, acceptance of the "essential role in lifelong education", focus on technological and socio-technological research, and "the active and integral engagement" through "system laboratories" (p. 11).

Jantsch argued for a body to research and implement solutions for societal problems (p. 67). He believed that integrative planning was key, across the institution and in collaboration with the community (pp. 67-68). This would mean a leadership role, that Jantsch believed institutions were well-positioned to take on (p. 68). This idea of a systems laboratory would be a space where faculty, students, and professionals research and implement solutions for societal problems. Jantsch predicted that the traditional professor/student roles would be changed (p. 104). Faculty roles would include that of a mentor tutorial, but also would require learning (p. 105). He believed that everyone should earn money for their contributions and, therefore, these spaces would need to become profit-centers (p. 104).

5. A more active relationship between the new university and society (p. 13).

Jantsch stated that the "university of the future ought to become a political institution in the broadest meaning" (p. 116) by playing an active role in the planning and decision-making process. The three functions of the university would become more unified, which would aid the university in contributing to the planning and decision-making

processes as an entire institution. Jantsch argued for universities to sell services in order for them to be financially independent. This does not include services that tie them to entities (government) that will guide their work (p. 118).

Leading Innovation in Small Institutions of Higher Education

The Carnegie Classification of Institutions of Higher Education ("Classification Description", n.d), established in 1973, classifies small, four-year institutions as having a full-time equivalent enrollment (calculated as full-time plus one-third part-time degree-seeking students) between 1,000–2,999 students and medium institutions as having between 3,000–9,999 students. By other definitions and the definition of this study, institutions with 10,000 or fewer students are still considered small because the Carnegie Classification system has not yet come up with a definition for today's 'extra-large' institutions. (Though large institutions are still classified as 10,000 students or more, a majority of the colleges listed as large institutions enroll well beyond 10,000 students, including Brigham Young University (34,000), Walden University (40,000), Miami Dade College (59,000), and Kaplan University (71,000).)

Many small institutions have been particularly hit by the higher education turbulence over the last decade due to rising costs and declining enrollments due to population decline and the introduction of new competition. 2008's financial crisis did not only influence people to question the value of a college education, it also made small colleges question whether they can continue with their traditions (Christensen & Eyring, 2011, p. 195). A majority of the innovation research on higher education focuses on large universities with the funds to invest in innovation, but it is worth examining the ways in which small institutions have innovated over the past few decades in order to stay current and keep their doors open.

Many leadership theorists offer models for higher education leaders to carry out innovative efforts. One example is 'intrepreneurship', entrepreneurs who work on the inside of an organization and who draw on smarts and energy when they envision a new product or service that will assist with a large-scale problem (Lipman-Blumen, 2000). There are also 'connective leaders' who navigate new ecosystems in this Connective Era. They bring issues that are beyond profit to the table, are concerned about their employees' well-being, growth, and fair treatment, and they are community builders (Lipman-Blumen, 2000). Another model is 'relational leadership', leaders who work throughout an organization, connect with excluded groups, and who knit the gaps between groups (Zolli & Healy, 2012, pp. 139-140).

Disruptive Forces

In 1969, disruptive forces were visible in institutions of higher education in the form of discontented students, questions about the structure and government of the university, and the dilemma of specialization versus generalization. Disruptions can also be found in higher education today, including racial-justice protests, online education, and questions about the relevance of higher education. The literature review details specific disruptive forces impacting campuses and how these forces have altered higher education's narrative about its purpose in society.

Self-Renewal

In 1964, John W. Gardner penned a book that was both timely and prophetic. *Self-Renewal* is about the failure to change and the toll rigidity can have on society. Many of Gardner's points are still relevant today. First, Gardner (1964) said that "renewal springs from the freshness and vitality of individual men and women" (p. xviiii). Second,

individuals are contributors to the societal system. If the society is to be versatile, the individuals that make up the society must also be versatile (pp. 11-16). Third, the educational system does little to cultivate self-renewal in individuals. Instead of passing on knowledge, Gardner believed that education should teach people how to teach themselves (p. 12). One particular point Gardner raised in 1953 is still a point of contention in higher education today. Should students be specialists or generalists? He points out that people can reach the "heights of performance" (p. 23) while intensely locked away in one subject area. Though, individuals also need to be generalists to see the connections between areas. Generalists, he argues, have developed the most capacity for self-renewal, because specialists can "lose the adaptability" (p. 23) needed for changing one's approach or, more largely, one's world. His conclusion is for individuals to develop the capacity to switch between the two, when needed. Fourth, society has a responsibility to cultivate self-renewal in its citizens. Societies that have the capacity for self-renewal are those that have created and maintained an environment that supports pluralism, limited governmental control, and freedom. Beyond this, however, they have nurtured a hospitable environment for creativity to occur (p. 35).

Self-Renewal is a book that Jantsch (1972) studied closely and admired. In this book, he found a solution for many of the disruptive forces affecting higher education. Jantsch (1969) said that, in education especially, we tend to confuse future aims with those of the present (p. 22). We cannot possibly know the jobs that will exist in the future or the values that will be needed in the future to help guide society. The type of education for which Jantsch advocated is "education for continuous self-renewal of human understanding and capabilities" and "education for the use of judgment and the

development and application of wisdom" (p. 23). The concept of 'self-renewal', he believed, should become a "guiding rule for the university", especially by "emphasizing self-education for both [faculty and students] and entrepreneurial self-development of curricula and careers" (p. 13).

Integrative Planning

In 1969, researchers like Jantsch recognized that technology had to be considered in systems-thinking; that technology, too, plays a role in forming society. The effects of society, even at that time, included transportation, urban living, environmental control, environmental health, communication, automation, information, food production and distribution, power generation and distribution, education, and defense (Jantsch, 1969, pp. 38-39). Jantsch states that few of these topics are reflected in university departments. He argues for 'integrative planning', the type of planning that includes looking at the effects of social, economic, political, technological, psychological, and anthropological dimensions (p. 39), or quality of life planning. Integrative planning includes shifting the university to work collaboratively in this way, and to serve as a leader in society to help guide other public institutions.

Chapter Two Summary

Chapter two was composed of two sections. The literature review provided an understanding of the context, history, engagement, and structure of higher education. The conceptual framework helped to focus the research process, influenced the research questions, and informed the design of the study. Chapter three will outline the methodology used in the study.

Chapter Three

Methodology

The purpose of this multicase study was to explore whether or not Erich Jantsch's five crucial innovations can be found to some extent in the innovations of four small institutions of higher education (IHE). A better understanding of innovations in small institutions may shed light on whether Jantsch's predictions were well-founded. To explore the problem, the following research questions were addressed:

- To what extent are Erich Jantsch's five crucial innovations found in the innovations of four small institutions today?

- What role has leadership played in these innovations?

- In what ways do the innovations today respond to present-day disruptive forces?

- In what ways are these innovations helping institutions to evolve?

- In what ways are institutions integrating innovation in their institutional planning processes?

This chapter outlines the methodology used to delve into these research questions. This section begins by describing the rationale for the particular research approach chosen. The second subsection describes the selection of the research sample. The third subsection details the information needed in order to examine the research questions. The fourth subsection describes the design of this study. The fifth subsection discusses the methods of data collection. The sixth subsection states the data analysis and synthesis. This chapter concludes with a discussion about the ethical considerations, credibility issues, and limitations found in such a study.

The findings are reported in the form of multiple case studies (multicase) that report on the institutional profile and the findings in relation to the research questions organized by institution themes. Yin (2013) points out that case study research is a preferred method when the study is a contemporary phenomenon and the questions are 'how' questions (p. 2). Though 'how' questions were not asked specifically, institutions were asked to describe certain efforts that are taking place. This dissertation includes multicase studies (p. 2) to report on the phenomenon present at each institution. A common example for multicase studies, according to Yin (2013), is studying innovations in schools (p. 56), which is precisely the focus of this study.

Research Sample

This study followed a purposive sampling model where participants were intentionally selected because they had experienced the same "central phenomenon" focused on in the study (Creswell & Clark, 2007, p. 173). Four small IHE were selected to participate in this study. These institutions were selected based on having under 10,000 undergraduate students (FTEs: full-time equivalent) as reported in the 2015 IPEDS (integrated postsecondary education data system) database. While a majority of the research surrounding innovation in higher education focuses on the maneuvers of large universities to adapt to today's disruptions, this dissertation focuses on small institutions. It is worth examining whether or not Jantsch's five crucial innovations can be found in small institutions that have had to react to pressures for change over the past few decades.

While it is acknowledged that every institution is different, small institutions were specifically selected because they are similar in size and resources. Their limitations, as compared to large research institutions, make them an interesting study because of how

53

they have approached their evolution. All four institutions are located on the Eastern half of the United States. Eastern colleges are generally known for their liberal arts curriculum, while West Coast schools are known for their focus on STEM (science, technology, engineering, and mathematics) subjects. The colleges in this study are also known for their liberal arts curriculum. Lastly, all institutions needed to complete the Phase I (Appendix A) qualifying survey successfully (75% or more checks).

This study used criterion sampling, where the participants "meet one or more criteria as predetermined by the researcher", and snowball sampling, where these participants identified others across the college who could participate (Bloomberg & Volpe, 2015, p. 248). Three offices per institution provided information on behalf of their institution. Initially, the key contact at each office was emailed a recruitment invitation (Appendix F). In some cases, information was supplied by an administrative associate or other staff member. (This instance is not regarded as another participant, just a member of the same office.) Participants were then asked to suggest other individuals at their institution who were able to speak about other college-community endeavors in which they take part.

Overview of Information Needed

This section describes the information that was needed to explore the research questions.

Contextual Information

Contextual information was requested from each office to describe the institutional work environment. The essential review in this study includes information about institutional background, campus description, history, structure, mission, vision,

values, institutional type, FTE, structure, mission or vision, themes and focus, strategic

objectives, leadership, constituents, and stakeholders. This information was gathered

from institutional documents and corresponding Web sites provided by the participants

(Appendix B). This information was added to each office's survey and is reported in the

findings as part of the multicase studies.

Perceptual Information

Perceptual information is the most important aspect of this study because

participants can only report on their own experiences. (This is also why a snowball

sampling method was built into the study design.) Perceptions are not facts, "they are

only what people perceive as facts" (Bloomberg & Volpe, 2015, p. 106). This does not

make survey responses wrong. Most of the information was gathered as part of the survey

packet (Appendix B) and some information was clarified in interviews. Finally,

participants added additional perceptual information in their reflection statements

(Appendix D).

Theoretical Information

Theoretical information was collected through the literature review in order to

assess what is already known about the background of this topic. Besides supporting the

methodological approach, the theoretical information also provided support for the

"interpretations, analysis, and synthesis" (Bloomberg & Volpe, 2015, p. 106) of the

findings. The matrix below aligns the research questions with the information provided

by the study in order to explore the questions.

Type of Information	What is Required	Method
Contextual Information	Institutional background, campus, history, structure, mission, vision,	Document and Web review,

	values, institutional type, FTE, structure, mission or vision, themes or focus, strategic objectives, leadership, constituents, and stakeholders.	Survey
Perceptual	Participant's descriptions and explanations of their perceptions as compared to the five crucial innovations.	Survey, Interview, Reflection Statements
Question #1 To what extent are Erich Jantsch's five crucial innovations found in four small institution innovations today?	Are there institutional innovations that might match up to Jantsch's 5 crucial innovations? In what ways are there traces of Jantsch's descriptions of his innovations found in the institutions' innovations? To what extent are Erich Jantsch's 5 crucial innovations found in four small institutions today?	Survey, Interview
Question #2 What role has leadership played in these innovations?	Who were the key players in the institutions' innovations? What steps did they take to help create these innovations? What challenges did they encounter in these efforts? How did they overcome these challenges?	Survey, Interview
Question #3 In what ways do the innovations today respond to present-day disruptive forces?	What disruptive forces were/are present? What specific challenges prompted the development of certain innovations? In what ways do these innovations respond to disruptive forces?	Survey, Interview
Question #4 In what ways are these innovations helping institutions to evolve?	In what ways have these innovations had an impact on the institutions' brand/reputation? In what ways have these innovations had an impact on academics? In what ways have these innovations had an impact on college/community relations?	Survey, Interview
Question #5 In what ways are institutions integrating innovation in their institutional planning processes?	In what ways have these innovations had an impact on strategic planning and the institutions' mission? In what ways have these innovations had an impact on the structure of the institution? In what ways have these	Survey, Interview

	innovations had an impact on resource allocation at the institution?	

Overview of the Research Design

The following research design was selected to provide the necessary information to complete the study. This section highlights the information gathered during the research for the study, the study itself, and the analysis of the findings. This research project began with the literature review. This review provided relevant and important background information to support the study. The review of the literature deepened understanding and clarified the important information needed to explore the study. The overview of information needed (including contextual, perceptual, and theoretical) informed the development of the following research design.

This study used a multiphase design, where the parts of study were "sequentially aligned" (Creswell & Clark, 2007, p. 100). Before beginning the process, potential participants were sent a recruitment letter (Appendix F). Participants were then asked to initial an informed consent letter (Appendix E). Finally, participants were asked to refer individuals from their own institution or other institutions to participate in the study via email. This is the only time individual names were submitted and referred to. The consent form was delivered electronically. Besides their name, their job title, office name, and institution name were also collected and the letters were dated.

Flowchart of Research Design

Phase 1	**Qualifying Survey (Appendix A)** Initial participants at each college completed a qualifying survey. These questions were based on Jantsch's five crucial innovations. This survey was electronic. No names were collected, only official titles, office names, and institution names.

57

Phase 2	**Survey Packet (Appendix B)** Participants received a survey packet that contained background information about Erich Jantsch, the five crucial innovations, and a survey for each office. This was a digital packet of information and the surveys were electronic. No names were collected, only office and institution names.
Phase 3	**Interviews** The researcher interviewed some participants for clarification and more information based on the survey data. These interviews were conducted both face-to-face and using Web conferencing technology. They were recorded and later referenced for transcription in the survey. No names were collected, only office and institution names.
Phase 4	**Reflection Statements (Appendix D)** Participants were asked to submit a reflection statement based on their survey answers and interview. The reflection prompt was penned by Jantsch in his 1969 report. This prompt was delivered in the form of a digital survey and the submissions were electronic. No names were collected, only office and institution names.

Once the information had been collected in Phase 4, a period of analysis and interpretation of the findings took place. The survey packet and interview information were coded for consistent themes. A case study was developed on each institution. Similarities and interesting themes found in the information are highlighted in the discussion. A final discussion about the extent to which Erich Jantsch's five crucial innovations can be found in small IHE today concludes the dissertation report.

Literature Review Statement

A selective review of the literature was conducted to inform this study. The topics of American higher education, colleges and communities, disruption in higher education, and leading innovation in higher education were explored. This review provides a better understanding of whether Erich Jantsch's five crucial innovations can be found in small

IHE innovations today, the circumstances that surrounded higher education in 1969 and today, the impact of leadership in innovation, and the ways in which innovation provides an opportunity for IHE to evolve.

IRB Approval

The dissertation researcher developed a proposal for this study that included the background and context of the study, problem statement, purpose statement, and research questions outlined in Chapter One, the literature review in Chapter Two, and a proposed methodology as Chapter Three. Though this proposal was accepted, one institution studied required additional IRB approval, an application which was also later accepted.

Data Collection Methods

Due to the concern about reporting validity, multiple methods of data gathering were used. Triangulation reduces "the likelihood of misinterpretation" (Bloomberg & Volpe, 2015, p. 107). This study employed multi-phase and multiple data collection methods. These methods included surveys, interviews, and follow-up statements. The surveys, such as the qualifying survey and the survey included in the survey packet, helped to provide contextual and perceptual information. The interviews helped to supplement the survey data with "in-depth, context-rich personal accounts, perceptions, and perspectives" (Bloomberg & Volpe, 2015, p. 252). Finally, the follow-up statements allowed participants to add to any information they submitted after a period of reflection on the study process.

Though all of the data were submitted and collected electronically, it was saved in a private space not available for public viewing. Absolute caution was taken to safeguard information provided and no participant names were collected in the research phases,

only institution names, office names, and titles. All participants read and signed an informed consent letter (Appendix E).

Phase 1: Qualifying Survey

Phase 1 included a qualifying survey (Appendix A) in order to determine if colleges qualified for the study based on available empirical research. This survey was created using the necessary study qualifications (East coast location, FTE of under 10,000, and being an office directly involved in efforts that involve the community) as well as the basic five crucial innovation category data. This survey was delivered electronically. This qualifying survey was only completed once per college. The first office contacted at each institution was responsible for verifying that the information collected was correct. The job title of this original contact, office name, and institution name were collected and the document was dated.

The data collection method of surveys was chosen because it is a time efficient, cost effective, and reliable way to gather information from all of the parties. Knowing that individuals needed time to look up and compose their answers, surveys also allowed individuals to work on the answers when they were able to during the work day. Surveys do have weaknesses, however. For example, they can be seen as inflexible because they do not allow for an exchange and clarification between the researcher and the participants (Blackstone, 2012, p. 195). Validity is also a concern on non-open ended questions because participants may not be able to expand on their views.

Phase 2: Survey Packet

Phase 2 (Appendix B) included the survey packet. The structure of this survey packet included a brief introduction to the study, a short biography about Erich Jantsch,

and a brief summary about the crucial innovations. In part B, participants were asked to answer open-ended questions per research question category for the institutional survey. Additionally, they were asked how they measure such efforts at their institution. The entire survey packet was delivered electronically. The survey packet was delivered to each participant at the institution. Individuals were able to edit their survey until they believed it to be complete. For each submission, participant job title, office name, and institution name were collected and the documents were dated. No participant names were collected.

One drawback to all survey research is the social desirability factor, where "respondents will try to answer questions in a way that will present them in a favorable light" (Blackstone, 2012, p. 211).

In between phases 2 and 4, three individuals opted in to an interview to clarify or share more information. In most cases, a follow-up interview was not needed.

Phase 3: Interviews

Phase 3 included interviews for clarification and more information based on the participant's needs. Only three interviews were conducted with individuals at three institutions. In all three interview cases, the meeting was a clarifying discussion about what kinds of information would apply in each part of the survey. These interviews were conducted face-to-face or using Web conferencing technology. They were recorded and later referenced for transcription in the survey. For each interview, the participant job title, office name, and institution name were collected. No participant names were collected.

One downfall of interviews, like surveys, is that they rely on participants to accurately recall and describe information (Blackstone, 2012, p. 243). It can also be time-intensive, for both participants and the researcher.

Phase 4: Follow-up Statements

In Phase 4 (Appendix D), participants were asked to submit a reflection statement based on their survey answers. The reflection idea and prompt stemmed from Erich Jantsch's own request in the 1969 report. This prompt was delivered in the form of a digital survey and the submission was electronic. For each submission, the participant office name and institution name were collected. No participant names were collected. This information helped compose the multicase information reported on each institution.

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Data Analysis and Synthesis

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This section details how the data gathered in the research was managed, organized, and analyzed in order to prepare for writing the case studies. Data analysis methods depend on the purpose of the research and nature of the collected data (Bloomberg & Volpe, 2015, p. 109). All of the data were submitted and collected electronically and saved in a private space not available for public viewing. The survey answers collected were submitted in an electronic form (Google Docs). Individuals were able to share one survey with multiple employees in their office in order to record all of the information needed. Some of the interviews were recorded for later transcription. Transcription took place manually using a private electronic document (Google Docs). A final discussion about the extent to which Erich Jantsch's five crucial innovations can be found in small IHE today concludes the dissertation report. The data collected will be destroyed (permanently deleted) immediately following the dissertation defense.

Discussion about Institutional Leaders and Agency

Though Jantsch (1969) spoke only about institutional leadership in his report, this study also acknowledges and highlights the contributions of individual members of institutions. As the literature review points out, leaders are found at the heart of innovation. In some cases, it is personal ideas that become institutional innovations. For example, Arizona State University and Southern New Hampshire University would not be considered ground-breaking without the application of ideas of their presidents, Michael Crow and Paul LeBlanc. As the conceptual framework reveals, however, leaders can be found at all areas of the institution. 'Intreprenuers' and 'connective leaders' are change makers who are not necessarily found at the top levels of the organization (Lipman-Blumen, 2000). These individuals possess a sense of agency to transform processes and efforts within their domains of the institution. Individual leaders are found at the heart of the stories about innovations.

Ethical Considerations

The risk to human subjects was minimal in this study, though all precautions were taken to ensure transparency and accuracy. All participants read and signed an informed consent letter (Appendix E) to ensure both they and their office staff understood the study topic and reporting process. This study was mainly concerned with the work of a deceased individual, Erich Jantsch, and whether or not his ideas can be found today. Though information is reported on each institution, this multicase study is primarily concerned with discovering to what extent Jantsch's five crucial innovations are present in the innovations of the four small institutions studied. It is essential that participants

understood there was no right or wrong in the reporting and that no institution was depicted as deficient because they did not possess the characteristics being explored.

Issues of Trustworthiness

This section is concerned with how the information being collected and reported upon is believable, accurate, and plausible. In this study, credibility is the largest issue of trustworthiness. Credibility is concerned with how the participants' perceptions are aligned with the researcher's portrayal of them (Bloomberg & Volpe, 2015, p. 112). As someone embedded in the higher education culture, the bias of the dissertation researcher can interfere with the interpretation of descriptions. However, a deeper understanding of the culture of higher education may be beneficial. Absolute caution was taken to verify that the case studies used participant's own terms when describing events, but further clarification was added in some cases for an outside audience. A variety of sources were used to triangulate information. Transferability is also a concern, specifically as to whether it is possible for the findings to be applied in different settings (Bloomberg & Volpe, 2015, p. 112). Therefore, the information described in the case studies was done in a way that is accessible to a variety of audiences with much detail.

Limitations and Delimitations

This section describes the limitations (the conditions that weaken the study) and delimitations (scope of the study) of the study. One limitation in this study is the sample size. Though there are similarities among small IHE, they all have their own circumstances and makeup. Though it is assumed that the institutions selected represent small institutions in the United States in general, there are different characteristics found in every IHE. Similarly, the selection of institutions was made due to accessibility. There

may be other institutions in the United States that possess more applicable innovations worth examining. Second, there is always the question about the reliability and range of the data gathered. Although all necessary precautions were taken to gather different forms of data so that the information could be triangulated, this does not mean that all of the necessary data were reported or that it was reported fully. Some participants were closely linked in certain areas of work which stunted the scope of institutional knowledge in some case studies and limited the available information for each case study. Lastly, because the 1969 report did not feature many examples, there is the limitation of interpretation of Erich Jantsch's five crucial innovations. Jantsch's definitions are being interpreted for today's circumstances and language. Some meaning may have been lost.

Chapter Three Summary

This multicase study explored to what extent, if any, Erich Jantsch's five crucial innovations can be found in the innovations of small institutions of higher education (IHE). This was accomplished through four phases: a qualifying survey, a survey packet, an optional interview, and a follow-up reflection statement. Four small IHE were selected to participate and three offices submitted survey responses. All of the data were submitted and collected electronically and are presented in the form of case studies in the next chapter.

Chapter Four

Results by Case Analysis

The purpose of this multicase study was to explore whether or not Erich Jantsch's

five crucial innovations can be found to some extent in the innovations of four small

institutions of higher education (IHE). A better understanding of innovations in small

institutions may shed light on whether Jantsch's predictions were well-founded. This

chapter presents the key findings through case studies.

Institution #1: State University of New York at Buffalo College

Participating offices:

- Office 1: Educational Pipeline Initiatives

- Office 2: Small Business Development Center and the Office for Research and
  Economic Development

- Office 3: Volunteer and Service-Learning Center

Overview and History of the Institution

The State University College at Buffalo (also known as Buffalo State College) is

a public college in Buffalo, New York that is part of the State University of New York

(SUNY) system. The College was originally founded in 1871 as the Buffalo Normal

School to train teachers. The 2015 National Center for Educational Statistics classifies

this college as a 4-year, public, located in a "City:Large" area, and with an undergraduate

population of 9,187. The College offers both undergraduate and graduate degree

programs, all on-campus.

The five institutional areas of the College include Finance and Management,

Student Affairs, Academic Affairs, Institutional Advancement, and Enrollment,

Marketing and Operations. Two additional officers report to the President, the Chief Diversity Officer and the Director of the Burchfield Penney Art Center. Both of these additional reports illustrate focuses on both diversity and art engagement at the College.

The College's mission statement speaks about a diverse and inclusive college committed to the intellectual, personal, and professional growth of its students, faculty, staff, and alumni through a dedication to excellence in teaching, research, service, scholarship, creative activity, and cultural enrichment. The College also hopes to inspire a lifelong passion for learning in its students.

The current strategic plan, SUNY's Urban Engaged Campus, was approved in 2016. This plan includes four goals: provide an excellent education inside and outside the classroom; continue to create an engaged community; enhance institutional effectiveness; and provide appropriate resources necessary to succeed. The College's spotlight efforts take advantage of their urban location:

- The College is working to address many local needs through educational efforts, opportunities for professionals and entrepreneurs, and engagement in the arts community. Most significantly is the work being done by the Centers for Excellence in Urban and Rural Education, Health and Social Research, the Great Lakes, Development of Human Services, and Small Business Development.

- The College is engaging the community in many ways, including through various committees, boards, and coalitions. The College considers the diversity in campus population a strength and representative of the shift in the local community. Many campus activities are thus shifting to better address and represent this diversity.

- The College is engaged in many service endeavors, with service-learning playing a central role. The College offers many service extra-curricular activities, including opportunities outside of the region and those occurring virtually.

- The efforts mentioned above in the areas of local needs, service, and community engagement all align with the College's planning efforts. The College holds Carnegie Community Engagement Classification and has been named to the President's Higher Education Community Service Honor Roll. It is a member of Anchor Institution Dashboard Learning Cohort and Campus Compact. It has also drafted a Civic Engagement Plan.

Local Needs

The College is located in the city of Buffalo, NY, within the museum district and arts corridor. It is bordered by the emerging West Side neighborhood, which contains high rates of poverty and a large population of New Americans (immigrants and the children of immigrants). The College stewards this neighborhood and engages its population in many ways. One of the largest efforts is education.

- The Center for Excellence in Urban and Rural Education (CEURE) is focused on the enhancement of local high-need urban and rural schools through the recruitment, retention, and continuing education of highly qualified teachers, as well as the support of reform efforts and research about effective schools. It partners with schools, community groups, foundations, and other institutions of higher education across Western New York and offers a variety of programs and services to school partners and campus colleagues. Annually, the Center hosts the

I Am College Bound Program. In 2014/15, teacher candidates worked with 325 students and 16 teachers and had a chance to model their lessons.

- The Community Academic Center (CAC) is a collaborative effort between CEURE and the Volunteer and Service-Learning Center (VSLC). The mission is to provide a site where children and families living in Buffalo's West Side neighborhood can participate in social and educational programs that foster and enhance lifelong learning. Activities and program offerings range from outside-of-school-time enrichment to instruction for newcomer refugee youth and parents. The CAC also has many community partners including organizations (such as Americorps) and local schools. College students can serve 300 hours and receive a financial award to be used toward education expenses.

- The College is currently collaborating with local organizations to create a West Side Promise Neighborhood in the surrounding area that borders the College. Inspired by Harlem Children's Zone, Promise Neighborhoods create communities of opportunity centered around strong schools to wrap children in education, health, and social supports from the cradle to college to career. The project has a dashboard that supports results-focused and data-driven efforts that address education, economic, and social needs. Results include kindergarten readiness, grade transitions, student health and safety, and access to 21st century learning tools. Core team members include members of the community. Parts of this project are already implemented, including an emerging leaders program, advocacy, power analysis, tenant's rights, and asset mapping.

- Areas of the College are looking closely at what they can do to assist with computer skills in the community.

  o Forty girls from local urban middle and high schools were provided the opportunity to gain coding skills and experiences over five months. They were engaged in the areas of science, technology, engineering, and math (STEM) career paths.

  o The Computer Information Systems Department has offered workshops for local math and science teachers through the CS4HS (Computer Science for High School) program.

  o A newly formed Women in Computing Club offered the "Hour of Code for Girls," part of a national initiative sponsored by the nonprofit Code.org.

  o The College is a partner in the community schools effort in the areas which serve as community hubs that link with organizations and bring in outside services to help support students through the schools as well as eliminate obstacles that prevent students from learning. They offer a lineup of services for students and family members, such as legal aid, social workers and mental health counselors as well as nutrition, cultural, and recreation services.

There are many efforts at the College focused on professional development and entrepreneurship.

- PAWS (Partnering Alumni with Students) is an opportunity organized by the Career Development Center and the Alumni Association to provide current

students with opportunities to meet and talk with successful College graduates ("Bengal Alumni Experts") to discuss job search techniques, interviews, and job applications.

- The Small Business Development Center (SBDC) assists small businesses in developing solutions to their problems, which also contributes to the stability and growth of the small business sector in the region. The Center sponsors events for youth, start-ups, and small businesses.
  - KidBiz is a children's entrepreneurship program run by the Center and geared towards teaching children how to open and run a small business.
  - The Center hosts the INC.ubator, which helps students to hatch new business ideas.
  - The Center's Entrepreneurial Effectiveness is a certificate program that includes eight sessions that help individuals become a more effective entrepreneur.
  - Entrepreneurship in the Blue Economy is another Center certificate program for enterprises that share a common emphasis on the responsibility of businesses to their local communities and to the global environment, and on the principle of "doing well by doing good.
  - One College faculty member coordinates the Social Enterprise Center through the SBDC, a project that assists businesses with social enterprise planning and management decisions.
  - The SBDC also co-hosts a "Veteran Small Business Development Workshop" for veteran business owners.

- The Center also hosts the New York State Surety Bond Assistance Program, which provides minority and women business owners and small business contractors with training, technical assistance and credit support to secure surety bonds necessary for state contracts.

- The School of Professions just launched an advanced manufacturing certificate program, thanks to a $230,000 grant from JPMorgan Chase & Co. and a $92,500 grant from the New York Department of Labor.

- The Office of Continuing Professional Studies offers teacher certification seminars, veteran and military services, and wastewater certification courses in partnership with the Great Lakes Center (described below).

- The Center for Development of Human Services has evolved into the largest state-funded social services provider in New York State and offers training solutions and products for human services.

Other efforts by the College are focused on local issues.

- One example is the College-supported Elmwood-Bidwell Farmers Market, a producer-only market. During the Winter months, the market is relocated to the College campus.

- The Great Lakes Center is an institute of researchers and educators dedicated to investigating the ecology of the Great Lakes and their tributaries. The Center sponsors the Partnership for Regional Invasive Species Management (PRISM) office, which serves as a clearinghouse for information on invasive species in WNY. PRISM's mission is to identify, evaluate, and address invasive species priorities in western New York using a coordinated partnership of local

professionals, organizations, and private citizens to improve, restore, and protect local aquatic and terrestrial resources. Students are also provided with opportunities to apply academic knowledge in addressing invasive species issues locally and regionally, through courses and two Great Lakes Ecosystem Master's programs.

- The College is part of a consortium of institutions working towards smart grid technology. The Engineering Technology and Technology Education programs are developing new courses that deal with a smart grid, including smart homes, renewable energy sources, and carbon and environmental concerns, which did not exist when traditional power systems were designed. The U.S. Department of Energy (DOE) provided a $2.5 million grant for curriculum and lab development in a partnership with these other institutions.

Lastly, there is much being done to engage the local arts community.

- Entrepreneurship in the Arts is a certificate program where participants hear from experts in small business, finance, marketing, accounting, and law.

- The Community Arts Academy (CAA) nurtures student creativity, critical thinking, and applied skills through joyful cultural experiences in the arts and humanities through classes and workshops in visual and digital arts, music, dance and creative writing for children, birth through grade 12.

- The Creative Studies program focuses on providing students with skills in creative problem solving. The graduate program in Museum Studies has a high level of involvement with local museums and the Arts Conservation program is one of only four in the country. This program contributes to the restoration with

museums and privately owned museums through their graduates, who can be found around the world at well-known museums.

- Representing college-community partnerships in the arts, the new Burchfield Penney Art Center opened on the College campus in 2008.

Community Engagement

The College believes that Buffalo, NY is an ideal environment to put its values of community engagement, diversity, and service learning into action and it partners with the community in many ways.

- The College Center for Health and Social Research has partnered with many local agencies to form the West Side Youth Development Coalition in response to community requests for assistance in developing effective responses to gang activity and violence on the West Side of Buffalo.

- The advisory board for the Great Lakes Center is composed of campus and community representatives.

- College employees serve on various boards in the local area. The Innovation, Creativity, and Entrepreneurship (ICE) Advisory Council is comprised of a dynamic group of business and community leaders, opinion shapers, and innovators from the Buffalo Niagara region. ICE members are informed of various campus developments and initiatives about which they might be otherwise unaware. Council members, in turn, share news about their own activities and emergent projects. Networks form, partnerships take shape, and goodwill is promoted.

- Campus members from the Volunteer and Service-Learning Center (described in detail below) and CEURE participate in Vision Niagara meetings focused on urban renewal along Niagara Street with the goal of increasing collaboration with businesses, community groups, and residents.

The College has a diverse student population and a wide range of academic programs. In the last five years, the College has moved from an enrollment in Fall 2011 that was approximately 70 percent white to the Fall 2015 enrollment with a 52 percent white population. The College considers the diversity in campus population a strength and representative of the shift in the local community and many campus activities are shifting to better address and represent this diversity.

- The previously mentioned West Side Promise Neighborhood also includes team members from the City of Buffalo and many local diversity-engaged organizations.

- The College is the lead facilitator in West Side Youth Development Coalition, an organization whose focus is on people living in the West Side area who influence youth, such as parents and others who act in that role, including a prevention focus to alcohol and other drugs.

- The Civic Urban Studies Minor emphasizes civic agency, is designed to inform students about public work, public achievement, and community organizing, and encourages active participation through service learning and public achievement models.

Service

Though many of the efforts already mentioned can be seen as service, service-learning is the heart of the College's community engagement efforts. In the 2015-2016 academic year, 1,705 students (15% of the student population) were involved in service-learning courses (a 6% increase over the previous year). These students were enrolled in 96 service-learning courses taught by 48 faculty members and interacted with 131 community partners. The faculty members act as leaders on campus to provide civic and community-engaged learning opportunities while working to address community need in collaboration with the partner organizations. Community members are invited to Volunteer and Service-Learning Center (VSLC) meetings four times per year to share project ideas, volunteer needs, and organizational information with faculty, staff, and students. Service-learning courses are in departments across campus, including dance, theater, communication, hospitality, health, nutrition, and dietetics, and education among others and they contribute to providing services and solutions that address social problems, including access to the arts, engagement with individuals with disabilities, nutrition and health education, and literacy. For example, Creative Studies service-learning courses provide creative problem solving sessions to community partners addressing a variety of issues and topics faced by not-for-profit organizations working to address issues of hunger, homelessness, inequity, and poverty among others. In addition to coordinating service learning, the VSLC is overseeing a region-wide grant from Bringing Theory to Practice to discuss and plan for opportunities to connect student well being and civic engagement. The College offers many service extra-curricular activities that are service related, as well.

- Alternative Break (AB) is a student-led program within the VSLC that prepares students to collaborate with communities experiencing social injustices by learning about, providing direct service for, and reflecting on a specific social issue during College academic breaks. Over thirty students a year partake in experiences during Fall, Winter, February, Spring, and Summer break. Community members ensure that students develop deep understanding of the issue, strategies for addressing it, and the root causes of the issue in the pre-trip meetings, and throughout the experience.

- Bengals Dare to Care Community Service Day engaged 650 students, faculty, and staff with 38 partner organizations provided introductory community engagement experiences over 2,600 service hours throughout the city in the 2015-2016 academic year.

- The Monroe Fordham Regional History Center serves as a physical and virtual resource of teaching materials including newspapers, documentary videos and slide collections for classroom use. This is done in collaboration with community groups and other local archival resources to actively preserve and disseminate historically significant documents of persons and institutions that contributed to western New York history.

- The Anne Frank Project (AFP) is a profound project that uses storytelling as a vehicle for community building, conflict resolution, and identity exploration. AFP works locally, nationally, and internationally by providing performances, workshops, and residencies. Its annual festival is an experiential exchange of ideas with a focus on processing theory into practice. In addition, AFP travels to

Rwanda with university students, community leaders, donors, and professors who care to learn more about human rights, reconciliation, and conflict resolution. APF is housed and sponsored by Buffalo State in partnership with SUNY and The Foundation for Jewish Philanthropies.

- The Center for Southeast Asia Environment and Sustainable Development takes students to Cambodia and Thailand to perform water analysis for the government.

Planning

There are many guiding documents the College has created to steer planning efforts.

- The current strategic plan, SUNY's Urban Engaged Campus, includes the focus area of sustainability. Of mention is reducing the use of paper products, adding efficiency through electronic systems, and incorporating sustainability in all areas of the College. Another focus area is safeguarding physical and human resources on the urban campus. Of mention is incorporating a community-oriented policing philosophy and making campus beautification a priority.

- The College is committed to being an Anchor Institution, a consortium of colleges dedicated to playing a vital and active role in the renewal and revitalization of the community and those they serve. The College uses the Anchor Institution Dashboard to survey community residents and respond to community statistics, such as the local unemployment rate, health index and graduation rates. The College is also a member of Campus Compact and is creating a civic engagement plan to recognize the interplay between service, teaching, and scholarship. Now in draft, the Civic Engagement Plan speaks to four priorities, 1) developing a shared

language and culture, 2) broadening community input and deepening community impact, 3) enhancing faculty, staff, and student voice and support, and 4) coordinating of civic and community engagement.

- The College curriculum is being shifted towards High Impact Practices (HIPs). One participant believed that HIPS are critical for retention and graduation rates because students become actively engaged in the real world setting and in their area of study. So far, community engagement and service learning illustrates a good way to retain students and students feel education is more impactful.

The College's 2016 IMPACT Report boasts the great impact the College has on the community in economic impact, jobs created, renovations, alumni, education, cultural opportunities, and community service. The College has received awards and recognitions over the years for these efforts.

- The College has been named to the President's Higher Education Community Service Honor Roll every year since 2006.

- The College is a Carnegie Engaged Campus (2015), an application process that occurs only every 5 years. The classification is not an award. It is an evidence-based documentation of institutional practice to be used in a process of self-assessment and quality improvement. The documentation submitted is reviewed to determine whether the institution qualifies for recognition as a community engaged institution (now conducted at the Swearer Center at Brown University).

One participant said that the Campus traditionally has not been entrepreneurial. Some means of generating non-tuition revenue have already been mentioned. Other endeavors include the College hosting the "Leader in Me" program, a Franklin Covey

project. Creative Studies offers international consulting that brings in a small revenue. Aside from this, the College continues to rent campus facilities to the public, which also generates a small revenue. One participant believed that many of the efforts listed above are the "next stage in the evolution" of the College. This recognition is new for the campus. One participant said that many of the guiding documents listed above are moving into an institutional focus, helping the College to determine if it is being a good steward of place.

Measurement and Effectiveness

The College measures effectiveness through:

- The Anchor Institution Dashboard, which features 12 indicators that address education, economic, and social needs. It calls for surveying community residents and responding to community statistics, such as local unemployment rate, health index and graduation rates. [Office 1]

- The Promise Neighborhood dashboard, which supports results-focused and data-driven efforts. It features 15 results and indicators that address education, economic and social needs. Results include kindergarten readiness, grade transitions, student health and safety, and access to 21st century learning tools. [Office 1]

- Through a collection of data, such as the Community Academic Center (CAC), which is measuring how many people served, how many people participating, how many enrolled. Between 2011-2015, over 9,000 youth and families served, 650 Buffalo State students participated, 23 Buffalo State faculty participated.

Over 1,500 service-learning students contributed over 14,500 hours to the organizations coordinated by CAC. [Office 1]

- Comprehensive evaluations. The Volunteer and Service-Learning Center performs a comprehensive evaluation where they survey students and community partners. The VSLC has gathered and analyzed significant data linking service-learning and retention, and preliminary analysis demonstrated an approximately 9% higher retention rate for students enrolled in service-learning courses, positively correlating to similar national data linking service-learning with higher rates of student retention. VSLC surveys of community partners indicate that 100% of community partners indicated that service-learning collaborations assisted the organization in one or more ways including generating new ideas, offering new services, or assisting more clients. [Office 3]

- Surveys. The Small Business Development Center surveys all participants and the center continuously reviews that data. They also sent a questionnaire to the entrepreneurs specifically to determine the impact (jobs and funding) of their work. [Office 2]

Participants believed the following innovations to be successful:

- Community Academic Center- an off-campus site dealing with engaging the community at the community level. A great indicator of success are the anecdotal stories in the community because they trust the CAC (i.e. such as when the Earthquake in Nepal happened, refugees approached the CAC to help with a successful fundraiser). [Office 1]

- Middle/Early High School College program- They see that the students are more

fully engaged, but they are waiting on numbers. This year's seniors had a cumulative GPA 2.47 (the highest has been around 2.0 in the past). These are challenging courses, but the tutoring center is revamping orientation and staff is working closely with guidance department. [Office 1]

- Volunteer and service learning center- collaborates with faculty and is focused on learning outcomes. [Office 1]

- West Side Promise Neighborhood- it is a grassroots based organization, it evolved organically, and it continues to strengthen as a network of support. [Office 1]

- "Well-managed best practices" - is considered innovation. Any idea can be innovative, but must be executed well. [Office 1]

- Creating new programs - such as Entrepreneurship in the Blue Economy. [Office 1]

- Combining Covey training with Creative Problem Solving methodology. [Office 1]

- Creating the ICE advisory Council. [Office 1]

- Service learning - Students have demonstrated improvements in important 21st century skills including written and verbal communication, problem solving, team work, analytical, and research skills. [Office 2]

Participants believed there was good ground work that indicates that these projects could see longevity:

- One participant said some will work, "for a while, because it has been an evolution on the campus, the heart has been that it is an "engaged campus", the strategic plan has evolved, that offices and efforts like these are coming together,

the institutional structure is being redesigned to support community engagement".
[Office 1]

- Anytime a grant is written, the question is asked how the effort will be sustained. One participant said, "this is a model of sustainability- from the beginning, driven by faculty/ staff, risen to a level that they are changing policies and procedures to ensure this becomes part of the institutional culture and not just pasted into publications". [Office 1]

- One participant said, "service-learning will continue to be a priority of the institution as is outlined in the 2016-2021 ... strategic plan. The demonstrated impacts on student retention, student skill development, and community impact are noteworthy". [Office 3]

Participants thought of one specific project that had not worked, but remember the reasons why for others.

- One participant said, "in the past, things did not last because they were entirely funding-driven. Hundreds of things that did not last because the champion moved on and the funding source dried up". [Office 1]

- One participant said of one particular recollection, "we came in as the experts, offered fixes, to problems not recognized as problems in the communities, did not work collaboratively in the development and implementation". Now they are, "starting with listening, collaboratively coming up with goals and outcomes, and with a level of reciprocity clearly identified in the partnership or relationship where everyone understood what they and others were getting out of it. The successful innovations measure up to this criterion". [Office 1]

- One participant said, "we tried a program called the Restaurant Institute. It had high "production" costs. Trainers were also very expensive. We had to discontinue. But we are looking at a new way of approaching this". [Office 2]

Participants believed there were many practices in place to ensure these projects would be successful.

- Most of the community engagement projects still have some level of grant funding, so there will be metrics with each one of these. Except for the ANCHOR initiative, because the institution is using the question more broadly and asking how impactful it is being. The dashboard has been updated significantly to adjust for concerns mentioned early on. One participant said, "for example, unemployment should not be the fault of any one institution since ANCHOR is as collaborative effort". [Office 1]

- There are satisfaction surveys of people who attend all programs. In-depth surveys to people who convert into "clients" - where a much longer, involved relationship is developed is a point of focus. [Office 2]

- Over 54,000 student records were analyzed to determine the rate of student retention from one semester to the next during the Spring 2014-Fall 2016 time frame. Students who participated in service-learning classes returned for classes the next semester at approximately a 9% higher rate. [Office 3]

- Service-learning students are periodically surveyed. In 2016, 88% of students agreed or strongly agreed that "the service-learning experience I had helped me to better learn the course content" and 91% of students would encourage other students to take a service-learning course (N=139) [Office 3]

84

- Community partners are surveyed annually. In 2016, 100% of community partners were satisfied with their service-learning partnerships and described various ways in which the organization benefitted including increasing the number of clients served, offering additional services because of service-learning students, and generating new ideas as a result of service-learning projects. [Office 3]

Reflection Statements

The following section includes statements taken word for word from the surveys.

Office 1:

"Alignment ... is central if any institution is going to have a significant impact towards being an effective institution addressing key social, economic and educational needs of the community in which it exists. With such alignment, the results will be at best sporadic and dependent on individuals who work within the institution."

Office 2:

"Each project we engage in has different tasks. But strategically, we begin by considering if a proposed project is a good fit for our economic development mission and/or if it helps to advance our current projects. We also consider if a project can be integrated into our academic mission, and further, if we can handle the project. Academic mission is viewed both specifically and broadly. Broadly, we feel that all of our projects, in some way, educate a particular target market-regardless if such persons are students or not. Other times our work directly aligns with and engages an academic department on campus and their students. We are

particularly interested in work that affects both constituencies, such as Entrepreneurship in the Arts, which attracts and assists artists in the community and students in the arts at Buffalo State. Our Blue Economy work offered training to both external and internal constituents, plus engaged several water based academic units on campus. Structurally, we are extremely flexible. This is further strengthened by our strong sense of optimism.

When setting priorities, we always keep focused upon projects that are funded. Those obligations must be met. Culturally though, our unit is always considering new opportunities, which we are often willing to launch without dedicated funding. One could think of it as experimentation. If we find that such a new idea and/or project has some traction and is having a positive impact, we will then begin efforts to scout out additional funding that will support the particular project. In some cases, the project may never directly attract financial resources, such as KidBiz. In spite of that, we are very committed to making this happen every year. The team takes turns managing the KidBiz market on Saturdays during the Summer.

Some projects are too important to wait for targeted funding. Importantly, none of this creativity and engagement would be possible if not for dedication and enthusiasm of the team. Regarding talent and space. We are very successful in securing both. SUNY Buffalo State has a wide range of space and physical resources that we make use of. We also take advantage of what we call non-academic days - weekends, Spring break, Summer break, etc. to plan workshops/training/events that require more space than would be available when

classes are in session. We also have an exceptionally good relationship with the people on campus who help us with these events/programs, including the leadership in the College catering department, public safety, space management, Research Foundation, and Continuing Professional Studies. Lastly, but very importantly, we feel that our management philosophy greatly affects our creativity and our success. We hire persons who share our enthusiasm and have a passion for advancing our work. That always comes first. From there, we offer our team members the support they need to master particular skills. Ongoing, all members of our unit are encouraged to participate in additional educational opportunities whenever it is possible."

Office 3:

"In Well Being and Higher Education, Andrew Seligsohn argues that educators, administrators, and all involved in higher education are obligated to recognize that it exists to serve the public good through teaching, research and service. Student well being is a term used to describe the education of the whole student as preparation for living meaningfully in the world. Well-being includes a student developing purposefulness, identity, mindfulness, a sense of belonging, mental and physical health, and civic identity. If an institution is to develop the well-being of students, and focus on student and community success, each member of the campus community as a whole must understand it's role in this educational journey. Faculty, staff, and students need clear expectations which involve both curricular and co-curricular commitments and activities. Innovative practice

87

involves both the traditional academic and student affairs programs, departments, and offices as well as the administrative practices of an institution. Interdisciplinary requirements should focus on applied and active learning pedagogies that result in students exploring and grappling with challenging problems and working collaboratively to address those problems through connections to curriculum. Spaces must include creative, place-based opportunities that place students in traditional learning environments, community-based learning environments, technological learning environments, etc. Structures must be both developed and "undeveloped" to create opportunities for collaboration among faculty, staff, students, and community partners; removing the silos that often exist in higher education. Technology can be used to create common workspaces, share resources, and ideas, distribute data and research, and disseminate information across the institution. Community partners which include businesses, not-for-profits, educational institutions, block clubs, and others must be invited to collaborate in an equal partnership to provide meaningful learning experiences for students to apply their learning."

Institution #2: Saint Joseph's College of Maine

Participating offices:

Office 1: Vice President and Chief Learning Officer

Office 2: Community-Based Learning

Office 3: Undergraduate Studies, Online Theology Programs

Overview and Recent History of the Institution

Saint Joseph's College of Maine is a Catholic liberal arts college sponsored by the Institute of the Sisters of Mercy located in Standish, Maine. The College was originally founded by the Sisters of Mercy in 1912 as an institution for women. The 2015 National Center for Educational Statistics classifies this college as a 4-year, private not-for-profit, located in a "Rural:Fringe" area, and with an undergraduate population of 1,719. The College offers both undergraduate and graduate degree programs, both on-campus and online.

In 2012, the College celebrated its centennial anniversary, the same year their current president was hired. The four institutional areas of the College include Finance and Administration, Institutional Advancement, Sponsorship and Mission Integration, and Learning.

In May 2013, the Board of Trustees approved the following vision statement, "Saint Joseph's College will be recognized for its preparation of lifelong learners through innovative course delivery and content that empowers people and communities to meet the challenges of a changing world."

The current strategic plan, Sustaining the Promise: Toward Saint Joseph's College's Second Hundred Years, was approved in 2014. This plan includes seven key initiatives: Stewarding Our Enrollment; Strengthening the Faculty and Staff Community; Enhancing and Diversifying Our Revenue Streams; Developing a 21st Century Educational Program; Preserving and Extending Our Legacy; Stewarding our Campus Environment; Institutionalizing Our Commitment to Excellence. The College's spotlight efforts take advantage of their Catholic mission and location.

- The College aims to be a multi-generation learning community. Most significantly, the College runs a multi-use center that includes a retirement facility and a day-care center.

- Standish, Maine has specific local needs that the College is assisting to treat, including a high rate of poverty, waterways, sustainability needs, and Catholic leadership. The College runs a community garden and food pantry, works with Catholic Charities and Catholic Schools, nearly all students take Environmental Science 300.

- Service is embedded in many areas of the institution, including stewarding the campus environment, local community-based service, service and cultural immersion trips, and campus events.

- The Curriculum is being shifted to incorporate more High Impact Practices (HIPs), sustainability concepts, and community engagement.

- The efforts mentioned above in the areas of multi-generational wellness and lifelong learning, local needs, service, and curriculum all align with the College's planning efforts. The College holds bronze STARS status and Carnegie Community Engagement Classification. It is a member of the Maine Campus Compact and the Green Campus Consortium of Maine. It has also developed an Attainable Sustainable plan.

Multi-Generational Wellness and Lifelong Learning

The second Strategic Plan goal is an aim to be a diverse, multi-generation learning community. The College believes it can be a place "where people come together to learn about the world in all its richness and to learn from one another". There are various

efforts that speak to this goal. Most significantly is the lifelong learning community on campus. Located on the College property, the lifelong learning community's administrative offices share space with the day care/child development center that enrolls the children of members of the College community as well as children whose families live in the surrounding communities. The College also addresses the lifelong learning needs of adult learners and professionals.

- Matricular learning options include online programs offered at the graduate and post-graduate levels. These programs include service-oriented subjects such as education, criminal justice, senior living and long-term care, human services, adult education, and ministry.

- Under the auspices of the Graduate Business Programs, daylong CPA continuing education (CE) workshops are provided to accountants within the region three times per year.

- College faculty and qualified professionals from the community present topics of interest and relevance (technology updates, tax updates, ethics, estate planning, etc.) that meet the continuing education (CE) requirements for maintaining CPA licensure within the state of Maine.

Students can take advantage of the many extracurricular learning opportunities available to them.

- The Forest Foundation's Undergraduate College Fellowship Program offers diverse placements, leadership development, and opportunities at nonprofit agencies for returning undergraduate college students. Through the First-Year

Summer Internship Program, Forest Foundation offers thirty, ten- week paid

Summer non-profit internships in Essex County, Lowell, and Boston.

- Athletic training is offered to all students in cooperation with local health provider.

- A revamped career development office focuses on providing campus and off-campus student and alumni support for internships and career initiatives through increasing connections in the local community.

Local Needs

The College is located 18 miles northwest of Portland, nestled among rural, moderately economically depressed communities. Two key local campus initiatives include Pearson Town Farm and Catherine's Cupboard Food Pantry. The farm is a small non-certified organic farm that is working toward a permacultural design. The Summer's crops are used in the campus dining hall and are donated to Catherine's Cupboard Food Pantry. Pearson Town Farm serves as a hub for classroom activities. Students can also intern on the farm and take part in everything on the farm: planting the seeds, harvesting, and taking care of the livestock. This effort develops an understanding of the lack of access to fresh vegetables and fruits for some individuals and creates meaning for what 'living the mission' look like. The farm also has a growing CSA and engages students from local K-12 schools. Another key effort is to reintegrate Catherine's Cupboard into the Division of Campus Life to educate students on social justice and to encourage civic engagement.

The College is a Carnegie Engaged Campus (2015), an application process that occurs only every 5 years. The classification is not an award. It is an evidence-based

documentation of institutional practice to be used in a process of self-assessment and quality improvement. The documentation submitted is reviewed to determine whether the institution qualifies for recognition as a community engaged institution (now conducted at the Swearer Center at Brown University). Many of the community engagement efforts are highlighted in this application.

- The College partners with Partners in Development to provide services abroad and with Catholic Charities in Portland (Maine) to meet the needs of the immigrant population, particularly students for whom English is a second language.

- The SPArC (Speakers, Performers, Artists, and Cultural) lecture series, hosted by the art department, stimulates artistic discourse in the Lakes Region by creating an interdisciplinary platform that brings creative professionals to campus to share their work and lead discussions. All SPArC events are free and open to the public. The campus library's circulating items can be requested online by Maine library patrons throughout the State.

- The library offers free library cards to residents of Standish and Windham. Walk-in visitors are welcome to use items in the physical collections in-house. Use of library computers is available to visitors, as well.

The College is the only Catholic college in Maine and plays both a Catholic and education leadership role in the community.

- For two Summers in a row, the College President has convened a meeting of the Catholic Schools/Principals Association. Faculty in Education at the College have

conducted professional development sessions with teachers at McAuley High
School.

- A partnership has been formed with Saint Dominic's Academy to assist them in
offering some of their theology courses online.

- The College has partnered with Riverton Elementary School in Portland for over
6 years. The school struggles with a high rate of student mobility, increasing
numbers of English Language Learners, and low socioeconomic status. Though
this ongoing project, Riverton teachers and administrators are given the support
they desperately need, while allowing college students the opportunity to work
with a culturally diverse population in need. This partnership continues to build
cohesiveness among college students engaged in community-based learning by
establishing a mentoring model and expanding the community-based learning
experience from one semester to the next. In 2015, thirty-six student participants
were involved, 864 student hours were served, 60 faculty hours were served, and
20 estimated individuals were served.

Besides being located in a rural area, the College is also located on Sebago Lake,
the deepest and second largest lake in Maine. The College continues to expand the
conversation about sustainable agriculture and faculty, staff, students, and members of
the community are coming together to discuss what this looks like in Maine.

- The College has a relationship with the town of Windham, Maine, to provide
support and community-based projects. The College benefits the state of Maine
through local work with the town of Windham. In particular, Maine has a long

history of paper mills which produced damaging byproducts for waterways. Much faculty research and many community-based projects are focused on this issue.

- Additionally, nearly all students at the College take Environmental Science 300, which is a strong commitment to high impact practices (HIP's, below), sustainability, climate change, and individual environmental impact. The primary motivation was to offer a high impact practice in a real-world way. In Fall of 2014, the Environmental Sciences program initiated ESS, the Environmental Science Semester. This HIP offers the opportunity for students to spend a semester in the field taking courses and being immersed in fieldwork related to the courses they are taking as part of the environmental science major.

- The College is embarking on its second year of the Sustainable Communities Initiative (SCI), based on University of Oregon's Sustainable Cities program. Founded on the idea that colleges and communities can work together to improve health and vitality in their region, this program leverages the skills, knowledge, and capacity of students and faculty through classes, courses, and research to address sustainability issues for organizations that reside in the surrounding community. From environmental action to economic viability and social integrity, this partnership allows students to engage with real-world problem solving to gain practical skills themselves while also providing needed support to nearby communities.

Many faculty members have made it their mission to focus their research and work locally and in the state of Maine.

- A marine science professor researches the growing acidity levels found in the ocean and in other bodies of water, otherwise known as "ocean acidification". He has given presentations on the issue, has written many publications, and has been interviewed by many journalists. He was also featured in a Nova special and presented to members of the U.S. House and Congress. He also teaches MS360 Aquaculture, a class focused on finding solutions to overfishing. Students grow tilapia and hydroponics in controlled tank environments.

- A chemistry professor and environmental geochemist met with officials from the Maine departments of Environmental Protection and of Education, representatives from water utilities, and public school representatives to continue working on the problem of lead contamination in school drinking fountain water.

- A criminal justice professor studies law enforcement and corrections in Maine. He is often asked to comment in the news about hot button topics like gun control and Second Amendment rights.

- A marine science professor and his students conducted traditional plankton sampling methods to assess growth of Alexandrium, the algae that causes red tide, and the ocean conditions coinciding with its growth. They used a near-shore (as opposed to an open water) buoy to develop a set of environmental indicators that would signal an imminent red tide because of the significance for shell fishers, who are the most economically impacted group in Maine during a red tide contamination.

- A Science Methods class has traveled to Riverton Elementary for the purpose of teaching science lessons. They provided classroom teachers with Picture-Perfect Series textbooks and more than 30 science kits with matching picture books.

- Another professor worked with five 7th grade math and science teachers at Windham Middle School to purchase and install meters and control devices for measuring electricity use. The teachers connected their students (roughly 225) with ES300 students (270) to gather and analyze data. The project aimed to reduce energy consumption at both institutions by changing behaviors and practices while learning civic responsibility.

Service

The core values of the College include community, respect, compassion, and justice. The College mission statement speaks of the College developing student awareness of human dignity and advocating for justice and peace, particularly to enhance students' awareness of human dignity and the meaning of life and to advocate for justice and peace in recognition of each person's responsibility for the welfare of both humankind and the environment.

- In the Strategic Plan, Initiative #5 focuses on Stewarding the Campus Environment. The College believes they have a responsibility to steward the beautiful location they are a part of, as well as to help develop their community and to maintain their own campus.

- The College is also part of the Maine Campus Compact. The 2015 Maine Campus Compact Survey Results revealed that 816 students were engaged in curricular community engagement, 250 students were engaged in co-curricular community

engagement. That year, the institution offered 74 community-based learning courses and 25% of faculty taught such a course.

- The president, a big advocate for community engagement, hosts a service conference, participates in campus service/community engagement activities, provides fiscal support, publically promotes service engagement, writes publically on service engagement, speaks to alumni and trustees about engagement, serves on community boards, and meets regularly with community partners.

- The College recognizes faculty community-engaged research, teaching and service; also gives awards for faculty engaged and public scholarship, and allows sabbaticals for community-based research/scholarship/program development.

Community-Based Learning (CBL) has a core role in the service College undergraduate and graduate students partake in. These efforts are also recognized in the Carnegie Engaged Campus Classification application (2015). The campus location offers a diverse pool of possible learning opportunities; because there is a large immigrant population in the Portland area and problems ranging from high unemployment to food insecurity in the rural communities, both urban and rural issues can be addressed. Each year, students, faculty, and staff contribute over 30,000 hours of service to more than 50 schools, hospitals, nonprofits, municipalities, and agencies in Maine, other states, and abroad. The Community-Based Learning office works directly with faculty, students, and community partners to design and implement community projects and experiences in as many courses as possible. As part of this initiative the CASE (Community and Sustainability Engaged) scholars program provides an opportunity for students to focus on CBL as part of their studies at the College. For example, a community-based learning

course, one business class is working with Windham, Maine on resurrecting their Farmers Market. During the 2014-2015 academic year, 103 courses had CBL components with 821 students serving communities in need in various capacities.

Some students are traveling beyond the campus (either on service and cultural immersion trips sponsored by the Mercy Center), engaging in community-based learning in the greater Portland and Lake regions, or spending a semester or year studying in a different city or a foreign country. These experiences give graduates a greater global awareness, which is one of the institutional learning outcomes. Many of these trips connect the curriculum to service, where students have a chance to serve and learn at the same time.

- The annual service trips to Haiti and Guatemala are sponsored by the College in cooperation with Partners in Development (PID) of Ipswich, Massachusetts. Every year, students and other members of the College community travel to Central America and volunteer their time to help those who need it most. Some College individuals have volunteered in small Mayan villages in Guatemala. They provide medical aid, help to build basic cinder-block homes, distribute hundreds of pounds of donated items, and spent time simply relaxing and interacting with local families.

- Some College individuals complete a week-long service trip to Haiti where they also construct new houses, volunteer in a health clinic, and assist with children's programs. Recently, one faculty member worked on an organizational handbook for the field director of the Haitian operation, designing training for employees and volunteers, as well as creating job descriptions for the Haitian directors. The

Community Health Nursing class also supports a clinic and school, and a small business initiative helps local women transform the lives of their children and families is now flourishing. Thirty-four students have been involved, 1360 student hours have been served, 240 faculty hours have been served, and 600 estimated individuals have been served thus far.

- The College also supports 3 annual weeklong service immersion trips to areas of widespread poverty, including the major urban areas of New York and Philadelphia, as well as isolated rural regions of Appalachia and Native American reservations. During these experiences, students get to know the people they are working with in a cooperative spirit and learn about the social and political structures that have failed, while working with them to create local solutions.

The College takes part in the annual Midnight Run, a consortium of churches, colleges, and civic groups that distribute food, clothes, and other necessities to homeless people in New York City. The dining staff makes sandwiches, the Sisters of Mercy donate clothes from their second-hand shop in Portland, and Campus Ministry pours shampoo into bottles to distribute. Students pack up the goods, drive to New York City, distribute the food and toiletries to those in need, and return to campus--all within a 24-hour period. One respondent said, "Midnight Run is an exhausting, but thoroughly exhilarating, yearly expedition that helps build a bridge between homeless and sheltered communities by reinforcing the human connection".

For 25 years, the College's Spring Break Workfest has offered students an alternative to the usual beach vacation. Participants trade bathing suits for work gloves, servicing various low-income communities across the county--and learning a great deal

about themselves in the process. On a typical day at a Workfest site, students are up and out early, putting in a full day to help abused, homeless children with homework; organizing clothing donations; serving in food kitchens; cleaning up building lots; painting rooms at a resource center for homeless teenagers; or staffing a Habitat for Humanity retail store.

National Hunger and Homelessness Awareness Week is a yearly awareness campaign co-sponsored by the National Coalition for the Homeless and the National Student Campaign Against Hunger and Homelessness. Students, faculty and staff orchestrate a series of events to raise awareness across campus for these social and economic plights.

Curriculum

In Spring 2015, the Faculty Senate approved a new set of five Institutional Learning Outcomes: 1) Identify and apply the ethical and moral dimensions of students' particular field of study. 2) Demonstrate effective communication skills in both written and oral formats. 3) Demonstrate competency in programmatic content and career preparation through applied and/or experiential learning opportunities. 4) Engage in responsible citizenship, social justice, and environmental stewardship. 5) Demonstrate critical thinking skills and the ability to analyze and evaluate information from diverse sources and perspectives. The new Core Curriculum was approved in April 2016, to be implemented in 2017-18. The new Core Curriculum includes the following attributes: 1) Foundations for College Level Thinking, 2) The Human Condition and the Human Story, 3) Nature and Society, and 4) Art, Creativity and Self-Knowledge. All undergraduate

students take courses in each attribute. Each attribute aligns with one or more of the five Institutional Learning Outcomes.

The College is working on strengthening and enhancing many areas of the curriculum. First, the College is pursuing many accreditations, including CAHIM (Commission on Accreditation for Health Informatics and Information Management Education) for Health Information Management program, CAHME (Commission on Accreditation for Healthcare Management Education) for Health Administration programs, and ACBSP (Accreditation Council for Business Schools and Programs) for Business programs. These accreditation efforts are part of a strategy to both increase enrollment in these programs and increase program coherence and integrity. Second, a key focus for the College is to incorporate more "high-impact practices" (HIP's) mainly through internships and fieldwork, which can be found in many programs.

Strategic Plan Objective 4.4 says that the College will offer multi-disciplinary master's programs focused on emerging challenges and issues in the contemporary world in addition to professional programs. There are many curriculum changes underway to help meet this objective. Several new certificates in Theology, IT, and C.A.G.S (certificate of advanced graduate study) in other online program areas, have been created. While these are for-credit programs, they are not traditional degrees. In addition, the College offers the APSI program and the CPA series (mentioned previously). The B.S. in Interdisciplinary Studies includes two Community-Based Learning courses that focus on practical application of knowledge through interdisciplinary study.

Maine has the oldest population in the country. Aging and aging wellness is a focus, as was previously mentioned. Attracting healthcare professionals to Maine is a

challenge, however. The College is taking part in attracting healthcare workers who will live and work in Maine. One respondent said that the College is pursuing tough questions like, "what does aging mean?" and "what does aging well look like?" It is hosting those conversations with the community and answering through academics and centers. Part of the spiritual mission of the College is "care for humans". The College is also pursuing the tough question, "what does sustaining well look like?", said the same respondent. Wellness, they see, is the human version of sustainability. This has to include the basics (eating well, exercising, etc.), but it also has to include spirituality, and asking the question, "how are the spiritual needs being met" for the individual. The College continues to broaden and diversify the theology programs to advance these efforts. They continue to expand spiritual development and professional/living development. They believe the whole person matters.

One of the College's greatest answers to the questions posed in the previous paragraph is the Attainable Sustainable plan, developed in 2015. This plan points to many of the sustainability efforts already included in the curriculum.

- As was previously mentioned, nearly all students are required to take Ecology and the Environmental Challenge (ES300). Students explore how natural systems work, food systems and agricultural practices, energy processes, everyday activities, the social dimensions of population, global cooperation and solutions, behavior change, and systems-level problem solving. Projects range from energy usage monitoring and recommendations to sustainable agricultural practices.

- Sustainability Studies, an interdisciplinary minor, was established in 2013. This minor has the most prominent example of course-required community engagement.

- As stated above, the core course ES300 contains a deeply embedded CBL aspect, as does the online offering of SO301 Social Problems, but even more notable is the fact that many electives in the minor have been intentionally developed as community-based learning courses.

- With the help of an Environmental Protection Agency (EPA) subgrant administered through the Maine Campus Compact (mentioned above), the College was able to develop and sustain environmentally focused interdisciplinary community-based learning courses. Through workshops, faculty members developed community engagement components for existing courses that related to water, air quality, climate change, and more.

- Due to the College's rural, agricultural location on Sebago Lake, the College considers its faculty and students as valuable resources. Some examples of student research include the effects of logging and tree clearing on runoff into streams; a collaboration with local farms and an agricultural organization to determine parasitic infestation in sheep; the relationship between bacterial growth on human hands and exposure to animals; and research on the feasibility of starting a CSA (Community-Supported Agriculture) at Pearson's Town Farm.

One interesting endeavor is the international graduate certificate in sustainability ("Integrative Ecology"). The Online Theology Programs have partnered with the Archdiocese of Granada and its Laudato Si Institute and leading environmental scientists

in Spain to offer a Graduate Certificate on sustaining the environment through an "integral ecology." The experience includes a one-week Summer immersion course on Spanish culture and history.

Due to the College's rural, agricultural location in the Sebago Lake watershed and proximity to the ocean, many research opportunities for all majors exist and local businesses, organizations, and agencies consider our faculty and students valuable resources. Besides what was mentioned above, some examples of student research include:

- Nearly a decade ago, the Communications Department designated the required Senior Capstone as a Service Learning Practicum. Projects range from a public awareness campaign for Hepatitis C to a video oral history for the local historical society. The Philosophy Capstone is now doing the same, with a significant portion of coursework dedicated to community projects involving food security.

- The sociology/criminal justice department has a longstanding history of community engagement in required coursework. Every semester, students in both majors perform service, do research, and complete projects for social service agencies, schools, and police and fire departments.

Planning

As many colleges around the country are questioning old practices and attitudes with the increasing loss of enrollment, the College highlighted in this case study sees this as an opportunity to take a leadership role in reimagining what higher education will look like in the future. The College is focusing on balancing core values and commitments with innovation and entrepreneurial activity in the areas of educational program design

and delivery, learner-centered education, and contextualized learning. They embrace their Catholic identity, their liberal arts orientation, and their Sisters of Mercy heritage and tradition, which they believe allows them to become an institution of distinction. Planning, no doubt, plays a role in this reimagining. A ten-year budget forecast is embedded in the Strategic Plan, and will be updated each year with "realistic revisions". The efforts mentioned above in the areas of multi-generational wellness and lifelong learning, local needs, service, and curriculum all align with the College's planning efforts.

The College's strategic plan points out many areas of focus. First, Initiative #3 focuses on diversifying revenue streams. For the College to be healthy, the College believes it needs to balance the need for increased revenue with the awareness that their current level of dependence on student revenue is not sustainable. Therefor, the College is working to increase revenue from other existing sources (philanthropy, grants, and auxiliary income) and develop additional revenue streams through creative and entrepreneurial activities. These efforts include the Mission Aligned Business initiative, which includes underway projects such as the creation of a tented lakefront and renovation of the stone barn as event spaces. These enhanced facilities will generate non-student revenue through event-space rental to groups from outside the College. Another mission-aligned venture is a new hotel and event center, which will create opportunities for the development of new academic programs in such areas as hospitality and eco-tourism, as well as providing another venue where students can earn and learn. The lakefront is being developed in conjunction with the hotel and conference center, and will support a four-season recreation program for students, faculty, staff, and visitors. The

Stone Barn renovation and the lake-side improvements are also part of the Mission-Aligned Business cluster focusing on sustainable hospitality. Also part of the Mission Aligned Business initiative are two other clusters that the College is developing, "sustainable agriculture" and "aging and wellness." Each of the clusters has three goals in common: 1) they address real economic needs in the state of Maine; 2) they provide experiential learning opportunities and student employment ("earn and learn"); and 3) they generate non-student revenue to support the overall financial health of the College and to address the important issue of affordability.

In addition to the many other memberships and awards the College has received and applied for, the College also currently holds bronze STARS (Sustainability Tracking, Assessment & Rating System- a program of the Association for the Advancement of Sustainability in Higher Education) status and they have aims to reapply for silver status. The College is also part of the Green Campus Consortium of Maine. As has been mentioned previously, the Attainable Sustainable plan aims to further institutionalize the College's commitment to carbon neutrality and sustainability with clear targets, strategies, and timelines for achieving its goals and objectives. The College believes the campus community has a moral obligation to steward its resources, which includes the physical and natural environment as well as our human and economic resources. The College embraces the intersection between sustainability and the Catholic values of faith, integrity, community, respect, and compassion. As a signatory of the American College and University Presidents' Carbon Commitment, the College takes this commitment seriously. The Plan was co-created by a multi-stakeholder group appointed by the President with input from diverse community members. The Task Force's and Plan's

creation was supported by EcoMotion, Inc. There are ten domains included in the

Attainable Sustainable plan.

1. Energy focuses on building heating, building cooling, lighting, appliances and plug loads, transportation fuels, and smart energy management.

2. Waste Diversion and Recycling focuses on reducing hauled waste, making zero waste a goal in all dining locations, decreasing fleet fuel consumption, processing compost on campus, creating vendor code of conduct, and instituting an e-waste recycling program.

3. Water focuses on indoor-water usage reductions, outdoor irrigation reductions, pool management, and reducing potable water consumption.

4. Food and Dining is focusing on making more food and dining expenditures locally and community-based sourced, developing and adopting a food purchasing policy, reducing conventionally produced animal products, achieving green restaurant association certification, and reducing use of disposable products.

5. Land Use focuses on the event center, certifying the existing organic processes at Pearson's Town Farm, developing a sustainable forest management program with the help of a grant by the U.S. Department of Agriculture's Natural Resources Conservation Services (NRCS), piloting a wildflower meadow plot by 2018, and developing a plan for measuring carbon sequestration by forested land by FY 2020.

6. Supply Chain Management focuses on developing a campus-wide sustainable purchasing policy by FY 2017, developing Vendor Code of Conduct or Guideline

for Business Partners, and developing campus-wide standard sustainability expectations and requirements.

7. Governance and Investment focuses on student Eco-Reps, improving recycling in the Residence Halls under the "Attainable Sustainable" brand, increasing participation of community members in sustainability governance, decision-making, and accountability of Climate Action and Sustainability Plan, and increasing participation and awareness of faculty and students, and Board members, and staff.

8. Academics and Research focuses on infusing sustainability in all academic programs, specifically including the existing Environmental Studies program, developing a Sustainability Certificate Program, and exploring the creation of a Sustainable Agriculture Certificate.

9. Community Engagement focuses on sustainability being integrated into job descriptions, encouraging the partnership with Portland's Riverton School, being part of the Green Campus Consortium, supporting the Pearson Town Farm which provides food to Catherine's Cupboard, and increasing awareness and engagement amongst community members through communications and events.

10. Health and Wellness is approached holistically and includes spiritual, emotional, intellectual, physical, social, environmental, and financial health.

The College formally recognizes community engagement through campus-wide awards and celebrations. The Exceptional Achievement in Academic Community-Based Learning Award celebrates a student who demonstrates outstanding participation, commitment, and academic performance in community-based learning projects,

particularly as they relate to personal and professional goals, perspectives, and values.

The Spirit of Mercy Award is given to a student who upholds and embodies the values of

the College, including Compassion, Respect, and Service. The Instructional Innovation in

Community-Based Learning Award recognizes innovative contribution to service and

community-based learning curriculum development and community outreach. Finally, the

College hosts an Annual Community Recognition Dinner and focus group to celebrate

community connections. Current community partners, faculty, and administration attend.

Measurement and Effectiveness

The College measures effectiveness through:

- Gross levels of measurement, including numbers of participants (meals provided, numbers of meetings, visitors, dollars brought in, grants and gifts), at Pearson Farm and Catherine's Cupboard. [Office 1]

- Publications, which are measured (interviews, events, speaking engagements, district engagement) in end of the year reporting. [Office 1]

- Numerical advancements, such as events and research dollars. [Office 1]

- Keeping records of how many students and faculty involved, how many hours served, and how many individuals impacted. [Office 2]

- Creating plans, such as the Climate Action and Sustainability Plan, which they believe is a testament to the College's commitment to sustainability, a road map to carbon neutrality, and fulfilling the President's Carbon Commitment. [Office 2]

- Applications, to The Carnegie Foundation for the Advancement of Teaching Elective Community Engagement Classification (2015), for example. [Office 2]

Participants believed the following innovations to be successful:

- The environmental science semester which started with eight participants two years ago and now has 12 participants. [Office 1]

- The Pearson Farm can be considered an innovation. It is in various stages to get it organically certified and is connecting to the community and to Catherine's Cupboard. [Office 1]

- The way in which the College takes advantage of their location. It is sitting on Maine's second body of freshwater and organizes more academics and research toward this point. Sustainable drinking water, species. They make the most of their location and abilities. [Office 1]

Participants believe the groundwork is laid for the longevity of these projects:

- They are doing a good job to do these things and institutionalize them. The community has bought into this plan and vision in such a way that it would continue. Momentum is on their side. [Office 1]

- They are building for the College's next one hundred years and they see these efforts as elements to help continue that. [Office 1]

Participants could not think of specific projects that had not worked.

Participants believed it was too early to tell if many of these projects would be successful.

Reflection Statements

The following section includes statements taken word for word from the surveys.

Office 1:

"Perhaps our best indicator is our commitment to Community-Based Learning (CBL). CBL integrates our curriculum with service to the community in formal way. Almost one-third of our courses have been designated as CBL and students

111

who participate in CBL courses receive recognition for this on their transcript.

The College has been recognized by Carnegie with the Community Engagement designation.

In our strategic plan, there is provision for three mission-aligned business clusters focusing on agriculture, hospitality, and aging. Agriculture, and Tourism/hospitality are Maine's two largest industries. Maine also has the oldest population in the country. Each of these mission-aligned businesses are under development and will be organized around achieving three goals:

1) curricular integration that will provide "earn and learn" opportunities for students and engagement for faculty;

2) activity that addresses needs in the state of Maine, and

3) revenue generation for the College.

To complement this effort the strategic plan has provision for two "Centers": one focused on Spirituality and the other on Human Sustainability.

Our Science students have an opportunity for a semester long, interdisciplinary, field-based study called the Environmental Science Semester (ESS). Students who participate in this experience spend almost a full semester studying various scientific and environmental courses/topics in the field in the Northeastern U.S. on land, sea, and lake.

In addition, as part of our CORE curriculum nearly all students are required to take ES 300 which is a course designed to engage students in the larger conversation about the environment, sustainability and climate change. This is

part of the College's institutionalized commitment to sustainability in all its forms.

We believe that engagement with the community is a vital ingredient to what will make Saint Joseph's College thrive in the future."

Office 2:

"With the rapidly changing workforce requirements emphasizing cutting edge communication and technology abilities, and the increasing emphasis on creative thinking and soft skills, we are greatly challenged as an institution to envision new ways to remain relevant. In order to better serve this new world (and indeed the aging population that is our local community of Maine), we will need to recognize that interdisciplinarity is critical in all institutional systems, from academic to administrative."

Office 3:

"Tasks are sets of activities that must be undertaken to reach goals. Tasks are variable and can change as more effective means of reaching goals are discovered.

Institutional Structures have an affinity with tasks, as they are vehicles to accomplish goals and plans, and, beyond that, to provide the structure to facilitate and empower employees to set and reach goals.

Interdisciplinary requirements--here, I am at a loss as to how to respond to this one. All I can say is that universities should be interdisciplinary communities on every level, not just with academic programs. Critical and strategic thinking are interdisciplinary endeavors.

Curriculum development ought to be data informed, which means research is a key component; however, "current" and "state of the art" should not be the only factor. The institution's heritage, mission, and values must be taken into account. However, even if these are not state of the art and fly in the face of what is "current," up-to-date methodologies and pedagogies can be applied to enhance curriculum and learning.

Talent is key, and it should be cultivated in a broad sense. Complementarity of talents works best to advance an institution's health, stability, and growth. The institutional structures should foster talent and as important as talent is would be people's dispositions."

Institution #3: Loyola University Maryland

Participating offices:

Office 1: Center for Community Service and Justice

Office 2: Educational Technology

Office 3: Technology Services

Overview and Recent History of the Institution

Loyola University Maryland is a Catholic, Jesuit liberal arts college committed to the educational and spiritual traditions of the Society of Jesus and the development of the whole person, with the main campus located in Baltimore, Maryland. In addition to the main campus, the College also has two graduate centers, in Columbia and Timonium, Maryland. The College was originally founded by a group of Jesuit priests in 1852 as an institution for young men. The 2015 National Center for Educational Statistics classifies this college as a 4-year, private not-for-profit, located in a "City:Large" area, and with an

undergraduate population of 4,068. The College offers both undergraduate and graduate degree programs, both on-campus and online.

There are six major institutional areas of the College, all of which report to an executive vice president: administration; mission integration; student development; advancement; finance and treasurer; and academic affairs (which includes enrollment, academic services, and the 3 main college units).

Their current vision statement reflects their commitment to place and tradition, "Loyola University Maryland, anchored in Baltimore, will be a leading national liberal arts university in the Jesuit, Catholic tradition".

The current strategic plan, the *Ignatian Compass*, was approved for years 2017-2022. This plan includes four key initiatives: Citizenship, Educational Innovation, Engagement, and Vitality & Sustainability. The College's spotlight efforts take advantage of their Jesuit mission and location.

- The strategic plan initiative of 'Ignatian Citizenship' is guiding the institution to respond to the needs in their local Baltimore. Key initiatives include participation in the York Road Initiative (including a farmers market and the Fresh Crate program) and participating in corridor development in public spaces that border the campus. Many faculty members are also performing research work for a better community.

- The College promotes 'engaged learning' experiences, such as guest speakers from the community, service learning experiences, and field trips into the community. Academic programs that focus on human services further allow students to "learn, lead, and serve in a diverse and changing world".

- Jesuit Education includes six characteristics, one of which is men and women for others. Many of the College's service efforts speak to this issue, including three clinical centers that provide sliding-scale direct services to community members in literacy, speech pathology, counseling, and pastoral counseling. There are many community service efforts mostly coordinated by the Center for Community Service and Justice (CCSJ).

- Some planning efforts are occurring outside of the strategic plan, including moving more toward partnerships and grant funding, as well as a sustainability initiative.

Local Needs

The new strategic plan, the *Ignatian Compass*, says that the College is, "anchored in Baltimore, will be a leading national liberal arts university in the Jesuit, Catholic tradition". One participant commented that "the phrase 'anchored in Baltimore' marks a very significant shift in how the university sees itself as being an engaged neighbor using its resources to support the local communities and the city". The first priority of the strategic plan is Ignatian Citizenship. The College aims to promote being part of something larger, sharing a responsibility for the betterment of the world, and acting for the rights of others. There are several campus initiatives that measure up to this goal and many of them are focused on York Road, a main street blocks from the College.

1. The first is the York Road Initiative, a community development strategy focused in the Greater Govans and York Road corridor communities of Baltimore. Members of the York Road Partnership collaborate with members of the College on its many projects, including a farmers market and the Fresh Crate program to

increase healthy food and produce access for local neighbors. One participant commented that this program, "is triggering a huge perspective change, encouraging a focus of student volunteer service resources on projects where we hope to make social impact".

2. Another participant also discussed the York Road corridor commercial plan, which would serve as a physical space for the College and the community. This would involve a redevelopment of some of the College's property into a mixed-use space that includes residence halls, classroom space, shops, and restaurants.

3. The Center for Community Service and Justice collaborates with 16 partners in the Govens and York roads neighborhood to offer community service opportunities in this area for students. One participant reported that these opportunities for service include meal programs, adult education centers, immigration programs, and schools, especially in the local public schools.

4. College students, faculty, and staff take part in the York Road Partnership, a community organization engaged in change-making, including education advocacy for City Schools funding with the Baltimore Education Coalition. Many faculty members are performing research work for a better community.

   • One faculty member in Teacher Education does program evaluation with Maryland New Directions, a workforce development agency.

   • A communications professor is regularly featured on the local NPR station, WYPR, discussing issues of race, racism, and police brutality.

- Another professor of writing, is doing research on the development and implementation of online job search resources geared toward community members working with a community partner agency.

Curriculum

The College's mission speaks to inspiring students to, "learn, lead, and serve in a diverse and changing world". There is much going on in the curriculum to support this point.

- Participants commented that the College promotes 'engaged learning' experiences, such as guest speakers from the community and field trips into the community. Other engaged experiences include academic internships, which are created by departments to develop professional skills and knowledge of the field while drawing on curricular learning.

- One participant spoke to the courses structured in ways to confront social issues through a Jesuit contextual lens, such as gender or racial inequality. Many of these courses allow students enough free enterprise to pursue research in a particular societal area. One example of this are courses offered in ethical leadership, such as courses in leading and managing change and business ethics.

- The Messina is a program that organizes first-year students in cohorts and introduces them to real-world societal issues through first-year seminar courses. Finally, the Career Center is aligning career development throughout the undergrad and grad experience with principles of vocational discernment and lifelong process of discovery.

Academic programs are also aligned with the College mission point listed above.

- The human services programs of psychology, education, and pastoral counseling prepare students to work in these challenging fields through instilling the value of reflection, understanding of privilege, and pursuit of social justice within these fields. The Master's in Psychology and PsyD programs focus on pragmatic skills for counseling and clinical work with individuals experiencing mental health issues, including curricular insights from a number of faculty who work in cross-cultural counseling, intersecting issues of race and poverty. The Pastoral Counseling program aims to train counselors to value clients as whole people, including their spirituality.

- The School of Education houses the Center for Innovation in Urban Education which focuses on the teaching challenges unique to urban environments (and, for many students of privilege, particularly important to explicitly learn about) and offers programming for the teacher education program. The School of Education also has some innovative programs such as cohort models for masters in teaching degrees, which are done in collaboration with groups of in-service teachers in several neighboring districts. The Center for Innovation in Urban Education also has a large grant which allows them to work with the Archdiocese of Baltimore to develop and evaluate STEAM (sciences, technology, engineering, arts, and math) programming in four archdiocesan community schools.

- The Global Studies program is an interdisciplinary major based in four disciplines: economics, history, political science and sociology. The major provides students with a social science-based framework from which to analyze

globalizing processes that transcend national and disciplinary boundaries. It also has a real-world solution-focused capstone course.

Service

Jesuit Education includes six characteristics, one of which is men and women for others. Many of the College's service efforts speak to this issue. The College has three clinical centers that provide sliding-scale direct services to community members in literacy, speech pathology, counseling, and pastoral counseling. A key component of the Loyola Clinical Centers (LCC) mission is engagement with the Baltimore and Washington, D.C. community through partnerships with a number of service organizations throughout the region. Students are able to learn in an interprofessional environment that provides comprehensive, evidence-based clinical training and hands-on experience.

Community service efforts are mostly coordinated by the Center for Community Service and Justice (CCSJ). The College looks at community service as an additional textbook in the class. Service-learning courses use community service as a pedagogy for exploring course material, shifting it toward community agency perspectives and at the same time, contributing to meet the needs of community agencies and people (about 20 hours of service/student over the course of the semester). One participant said, "structured reflection helps harvest meaning from service experiences". CCSJ partners with more than 70 local community agencies and hosts a variety of on-campus social justice events. Co-curricular service partnerships include a tax prep partnership where students help neighbors with taxes and a design partnership, in which CCSJ students develop graphic logos and web designs for local neighborhood associations. In current

service-learning courses, students will apply their information systems and operations management skills to the needs of local community agencies. One participant reported that, recently, a new part-time Faculty Director for Community-Engaged Learning and Scholarship, was hired to replace a full-time administrator Director of Service-Learning in the hopes that having a faculty member in this role will engage faculty more effectively and that redefining the role will broaden the continuum of faculty-community engagement we can support.

There is some service work being done in the community as well.

- The CCSJ and the Sellinger Business school host a crowdfunding workshop for faculty, neighbors, and community partner agencies.

- Partners often initiate relationships with the College by asking for volunteer support. The College often invites community members to lectures and discussions related to social issues, such as the MLK Lecture that recently featured TaNahisi Coates and Claudia Rankine.

- The Baltimore Sustainability Film series, with six films a year, is open to the community and provides a forum for discussion on sustainability issues.

Planning

Some planning efforts are occurring outside of the strategic plan. In terms of funding, one participant said that their office is moving more toward partnerships and grant funding for work done in partnership with other institutions and community agencies. Their future and needs are interconnected with partners, so they are finding new ways of proceeding forward together. Another participant said that the College relies greatly on major gifts from alumni and other donors and the College is aiming to increase

121

their culture of philanthropy among the larger pool of our students and alumni. The College also has a sustainability effort that features the Green Office Program, a voluntary certification program and support network created to help offices live out the Jesuit mission through sustainable initiatives in their workplace. Other efforts that are part of this sustainability effort include a community garden and "Loyola Unplugged", an annual energy reduction competition hosted through Campus Conservation Nationals.

Measurement and Effectiveness

The College measures effectiveness through:

- Collecting good data showing student learning outcomes related to active citizenship, understanding of Jesuit values, interest in future service and civic engagement, increased job skills, critical thinking, and spiritual development. Data also shows that students were well prepared and helped meet the needs of the agencies. [Office 1]

- Dollars, such as the YRI Govanstowne Farmers Market, which measures dollars accessed by people with SNAP benefits. [Office 1]

Participants believed the following innovations to be successful:

- The additional volunteer labor in local schools will help meet needs at literacy services and tutoring. These initiatives are new enough that we do not yet have metrics. [Office 1]

Participants believed the longevity of these projects had yet to be seen:

- The projects discussed above are too far-ranging to answer this well. [Office 1]

Participants mentioned the following specific projects that had not worked:

- The College had a partnership with a local recreation center in the past, which was unsuccessful because the parties involved could not reach agreement on common goals and shared process. [Office 1]

- Individual project-based partnerships between partners and classes have sometimes not worked out well when faculty and partners fail to be detailed enough in agreeing on scope of project, a clear timeline, and a process for feedback to ensure that students are completing the project well. Students sometimes produce projects that do not meet the needs of partners. [Office 1]

Participants believed it was too early to tell if many of these projects would be successful.

Reflection Statements

The following section includes statements taken word for word from the surveys.

Office 1:

"Our institution seems to be moving toward collaboration, both internally and externally. This is driven by the necessity of scarce resources and by ever-modernized looks at our own mission. Our social justice mission requires experiential learning opportunities for students, deep partnerships with other institutions, and meaningful institution-level investment in aligning our goals with those of our neighbors. Our Center's work is shifting to become more transformational and less transactional in working with neighbors and fellow institutions. Internally, also, we are finding the need to work across offices and departments to create more unified and reality-based educational experiences for students. We need interdisciplinary studies, internships, service-learning, and capstone experiences or signature work because they streamline the use of

resources to serve our education and justice goals, so that students are more ready

for the world when they leave us."

Office 2:

"I think in terms of different avenues the university could take in order to create

and sustain more Community Partnerships, I would probably start with some type

of incubator program, where in you could have different Community organization

that had an interest in either working with students or providing some sort of

learning or professional experience, and from there, they could work within that

incubator has kind of a beta program to see what kind of fit they would be as a

community partner. There are similar programs existing already through CCSJ,

but most of those Partnerships are established directly by The Faculty members,

and CCSJ it's simply there in a supporting role.

This would inverse the previous structure a little bit, because it would let faculty

and administrators know that there's already an existing pool of organizations

willing to enhance those Community connections, and based on their individual

needs or program conditions, they can create those partnerships directly. I think

this inverted model could have a drastic effect on the ability innovative faculty, as

it would lower the barrier to creating partnership opportunities, as well as linking

administrators and faculty with the community at large to a greater degree."

Office 3:

"Just as solid public companies do, non-profit organizations including universities

should set solid goals, which are led by a strategic plan. Such plans and should be

ever changing based on the current social and economic environment. Within the

plan would be goals with specific tasks and action items. I think at times we are

too general in our thinking and do not get down to the specifics of exactly what

should be done and when. Again, based on the environment of the day the

university structure may need to be altered to fulfill the goals. Goals for the

university's growth and development should be based on current trends in

curriculum development, from proven data of existing teaching methodology, and

with a eye on technology trends. The knowledge gained and action taken should

be incorporated with the community's needs. Giving students the opportunity to

see the impact of their education and newly developed skills on their immediate

circle, their overall community and throughout the globe is critical. Oftentimes

this realization does not occur until later in life as they develop mentally and have

more life experiences."

Institution #4: Springfield College

Participating offices:

Office 1: Inclusion and Community Engagement

Office 2: Department of Physical Therapy

Office 3: East Campus Outdoor Learning Center

Overview and Recent History of the Institution

Springfield College is a private, liberal arts college committed to a Humanics

philosophy, which calls for the education of the whole person—in spirit, mind, and

body—for leadership in service to others. The College is located in Springfield,

Massachusetts. The College was originally founded in 1885 as two-year institution for

young men preparing to become General Secretaries of YMCA programs. The 2015

National Center for Educational Statistics classifies this college as a 4-year, private not-

for-profit, located in a "City:Midsize" area, and with an undergraduate population of 2,147. The College offers undergraduate, graduate, and doctoral degree programs, both on-campus and hybrid.

There are nine major institutional areas of the College: Academic Affairs; Student Affairs; Inclusion and Community Engagement; Finance and Administration; Development and Alumni Relations; General Counsel; Athletics; Enrollment Management; and Communications.

Their current mission statement reflects their commitment to their philosophy, "to educate students in spirit, mind, and body for leadership in service to humanity." The College's spotlight efforts take advantage of their Humanics mission and location.

1) The College lives out its mission to educate the whole person, in spirit, mind, and body through a variety of efforts through events, partnerships, the curriculum, and professional development.

2) The College is engaged in the community through leadership roles, partnerships, and campus spaces.

Care for People

The College is committed to a Humanics philosophy, the age-old Greek ideal of the balanced individual. The College believes that a person's emotional, intellectual, and physical lives are interconnected. They try to live out their mission to educate the whole person, in spirit, mind, and body through a variety of efforts through campus events and partnerships.

- Humanics in Action Day is a day that brings together the entire Springfield College Community in the spirit of the mission to serve humanity.

126

- The College recently sponsored a showing of the documentary "Three to Infinity" to increase awareness of LGBTQA community as well as explore the world of those who have redefined gender.

- The College also hosted a Brown Bag Lunch Series on the topic of memory loss, dementia, and Alzheimer's disease and the impact of these conditions.

- The College also hosts a Learning in Later Life program, which offers Spring and Fall semester courses in current affairs, film, books, and a variety of other subjects of interest. The program offers social events to encourage an atmosphere of camaraderie and companionship, while learning about topics of relevance for those who are 55 and older.

- Partnerships with local hospitals and entities include training the next generation of healthcare and educators and, as one participant commented, could not be successful without those partners. Partners see students as the next generation of employees.

- Another partnership is Deaf Community Home and Access, a partnership between Center for Human Development and the College to host long-term housing for individuals who are Deaf and have intellectual disabilities.

The College mission encourages students to look at the mind, body and spirit. As they do so, they look at larger societal issues. There are examples of this point found on campus, as well.

- The Adapted Physical Education concentration is focused on teaching physical education for those with disabilities.

- The Special Olympics Student Club has partnered with the Special Olympics of Massachusetts to make the campus more inclusive as well as provide social and educational benefits for both students and Special Olympic Athletes.

- The research of a faculty member in the Department of Exercise Science and Sport Studies, explores the sedentary lifestyle as a result of working at a desk or at a computer every day.

- Faculty members associated with the East Campus Outdoor Learning Center (ECOLC) present and conduct research regionally and nationally on the development of innovative practice and research, such as on the development of community youth development through sport and physical activity and the development of the positive youth development relationship survey.

- One participant commented that one critique of the explosion of technology has been that youth are becoming "information rich and experience poor". Experiential learning programs and initiatives such as new Learning Commons have responded with intentionally designed learning to teach for social and emotional intelligence (SEI), critical thinking, group work and other process oriented learning skills.

- One technology initiative involves iPads, enhancing class engagement and strengthening technology abilities for faculty and students. At the same time, the iPad Initiative helps faculty members and students improve their productivity and enhance the classroom learning.

Faculty are using the Humanics philosophy to mold students to become change agents and leaders. One participant commented that the College regards their student

population as their greatest resource and they believe in the fact that one student can impact the many lives of others throughout their lifetime, though one interaction at a time. Many examples can be found in the curriculum, as a result.

- First year seminar students are engaged in community-service work in the community.

- There is a social justice requirement, which requires that all students have a presence in the community, volunteering or getting engaged with food pantries in order to see how issues of social justice are impacting people.

- Students in the Art Therapy program are working in community homes, which form a learning laboratory.

- The Physical and Health Education programs challenge students to understand the challenge that surrounds physical education in urban communities (such as access to playgrounds) and to develop and apply alternatives in the local community.

- One participant commented on encouraging students to engage differences, especially in the hospital or clinical settings where they are interacting with people who are different than them. Students are able to take the academic experience and use it in a purposeful way.

- The Physical Therapy Program hosts a stroke exercise group that meets weekly and the Occupational Therapy Program hosts a support group for people and their caregivers that also meets weekly. The purpose of these meetings is to fill that gap after insurance stops covering rehabilitative services for people living with the effects of chronic stroke. These two programs also provide gross and fine motor

screenings for children in urban pre-schools who would otherwise not be screened due to budgetary issues.

Lastly, some efforts on campus are focused on professional development. The School of Professional and Continuing Studies, to note, is the adult education wing and includes programming for adults on weekends. The programs of criminal justice and human services perform work within the community and the capstone project is a community-based research project. One participant commented that this includes both academic learning experiences and real-world knowledge to create such a project. The School of Social Work also offers a weekend program in either the Springfield Campus or at Saint Vincent Hospital, Worcester, MA.

Community Engagement

Members of the College are taking on leadership roles in the community. First, the Center for Leadership and Civic Engagement is taking steps to be a meeting place that will be used by members of a community for social, cultural, or recreational purposes. The current Vice-President involved with the center is very active, serving on committees for the YMCA, Black Hall Committee of Springfield Art Museum, MLK Family Services, and Community Music School. Second, the Health Science major publicly discusses and translates the impact of science and technology advancements on social systems. Third, some faculty members serve on community boards and professional organization boards, and others are advisors to student organizations that focus on policy/professional issues. In particular, two faculty members from the College serve on the board of the Senior Olympics in Massachusetts and organize the Senior Olympics to take place at Springfield College each year in June.

The College has numerous partnerships.

- An affiliation with the Basketball Hall of Fame (the current College President in on their board and the President of the Basketball Hall of Fame is on the College's board).

- The College is integrating residents in the campus through a partnership with the Center for Human Development.

- The College collaborates with the two councils of Springfield to make sure it is responding to community needs.

- The Physical Therapy and Occupational Therapy programs have partnerships with regional hospitals and medical centers for practicums and internships.

- There is a partnership with China that facilitates student exchange opportunities.

One engagement activity, to note, is the East Campus Outdoor Learning Center (ECOLC), an outdoor learning laboratory where faculty, students, staff and vested community partners gather to design, plan, implement and evaluate programs that meet societal needs associated with health, wellness and physical education through predominantly experiential learning. One participant said that this effort is successful because of the meaningful relationships with community partners. Some of these partners also provide funding. All programming and courses at the ECOLC are guided by the philosophies associated with experiential education and the mission of "leadership in service to others." Some of the efforts include Camp Massasoit (a Summer day camp that provides outdoor and adventure programming for youth ages 5-16), professional development workshops for K12 teachers (topics include experiential learning, adventure education, environmental education, team building and others), professional development

programs for corporate professionals and organizations, youth programming (created

with intentional design, experiences for organizations and schools that include social and

emotional Intelligence programs for public schools, outdoor education programs,

adventure education programs and others). One byproduct of the provision of these

learning experiences has been the creation of revenue. One participant said that this

center is noteworthy because of the integration across these settings (in school, after-

school and Summer learning contexts) are all part of a larger community-based

curriculum model that has been developed by faculty members associated with the

ECOLC and is founded on positive youth development and experiential education.

Faculty associated with the ECOLC have created, tested, and disseminated the

Community Youth Development through Sport and Physical Activity framework and

have developed a quantitative measure to assess the quality of a positive youth

development relationship between a mentor and youth.

Measurement and Effectiveness

Participants did not comment on how the College measures effectiveness.

Participants believed the following innovations to be successful:

- Partnerships with local hospitals and entities- training the next generation of

  healthcare and educators could not be successful without those partners. Partners

  see students as the next generation employees. [Office 1]

- Student population is regarded as their greatest resource- to live out the mission of

  "to educate students in spirit, mind, and body to the service of others" (look above

  at mission), thinking that one student can impact the many lives of others

  throughout their lifetime - one interaction at a time. [Office 1]

Participants did not comment on the longevity of these projects.

Participants mentioned one specific project that had not worked.

1. Development of an interprofessional health clinic for individuals who are underinsured. The institution was not willing to commit to the cost. [Office 2]

Participants did not comment on whether these projects would be successful.

Reflection Statements

Office 1:

"As an educational institution, we are here to educate individuals. Our primary task is to take a student, as they come in as a first-year student, and provide them with both the academic and personal/social skills to be a wonderful professional. Our different schools, departments such as Student Affairs and Spiritual Life, and areas of study to give students various foundations. Our students take a host of general education requirements that help them to determine what fields they might be interested in studying and what professions they might be interested in working in. These interdisciplinary requirements, which include community work, also help them to work alongside, see and hear from other people. Our faculty bring their expertise as people who are thought leaders in their fields to the classroom to create transformational learning experiences for the students. Faculty help to bridge the gap between academics and real-world experiences in various partnership and community locations. Our biggest asset is our student population, and our second biggest asset are those who educate our students."

Office 2:

"The tasks to accomplish all of the activities listed in my interview rely heavily on the dedication of a few individuals who are invested not only in furthering their individual professional goals but also in furthering the mission of the institution. I often find that in any given department (size ranges from 6-10 faculty members) only 3 people are invested enough to take on the tasks even if those tasks are not embedded in their workload. The structure and division of the institution into schools, departments and even programs does not always foster sufficiently interdisciplinary activities. In the school in which I am Dean we have worked to overcome the limits of structure but even with the work we are doing there are the limits of the faculty who do not want to change from "status quo" to newer ideas of education. This same faculty limit, often among those who have been teaching the longest, or among those who value most highly the methods that were used to teach them, can limit the movement to state-of-the methodology and curriculum development. Often a department needs one visionary to give a push and move things forward, best is if that visionary is the chair. Better still is if all the chairs are visionaries and they create and hire the talent so that the school moves from departments that function individually to departments that collaborate on teaching, service and scholarship. It is happening but it is limited to the instances I pointed out in the interview as opposed to being the norm among all faculty, all departments and even all schools."

Office 3:

"Funding and coordination. With the numerous moving parts of an institution there is always overlap and duplication of program intentions. Interdisciplinary

curriculums require a clear understanding of the inner workings of numerous

departments, identification of overlap and the ability to reallocate funding to

support the consolidation of synergist groups. These groups can streamline the

coming together of ideas and intention of programs."

Chapter Four Summary

Whereas this chapter presented the data collected in case studies, Chapter 5 will

address the findings of the research questions.

Chapter Five

Analysis, Interpretation and Synthesis of Findings

This research used a qualitative approach to create case studies on each institution. Participants in the study included four small institutions on the East Coast of the United States. The categories found in each case study were derived from the unique themes found in the data collected on each institution. To explore the problem, the following research questions were addressed:

- To what extent are Erich Jantsch's five crucial innovations found in the innovations of small institutions today?

- What role has leadership played in these innovations?

- In what ways do the innovations today respond to present-day disruptive forces?

- In what ways are these innovations helping institutions to evolve?

- In what ways are institutions integrating innovation in their institutional planning processes?

Multicase studies provided an opportunity to explore the research questions and to discover themes. The first section in this chapter includes the analysis. This multicase analysis involved determining the themes present in the case studies that speak to the research questions. This analysis was not a comparison of the colleges involved, and instead looked at to what extent there were answers to the research questions found in the data. This varied from school to school, with each college's contribution to see if Erich Jantsch's five crucial innovations can be found in the innovations of small institutions today.

The second section of this chapter provides interpretive insights into the case studies by mapping data to the research questions. This section is intended to further examine whether Erich Jantsch's five crucial innovations can be found to some extent in these innovations of four small institutions of higher education (IHE). The chapter concludes with a reexamination of the assumptions, which were identified in the first chapter, and a summary that incorporates a note regarding the effect of possible researcher bias in interpreting the findings.

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Analysis

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The Presence of Erich Jantsch's Five Crucial Innovations

The overriding finding in this study revealed that Erich Jantsch's five crucial innovations can be found to some extent in these innovations of four small institutions of higher education (IHE).

Innovation #1: new purpose of the university.

All of the colleges and their members are taking an active role in the community, participating in community development, and setting goals for the community's future. Institution #1 is working to address many local needs through educational efforts, opportunities for professionals and entrepreneurs, and engagement in the arts community. Institution #2 is working to address many local needs that include a high rate of poverty, the aging population, waterways and other sustainability needs, and Catholic leadership. Institution #3 partners with the community to address community issues through events and is focusing on the areas that border the campus and community, to see how spaces can be better utilized and shared. Institution #4 hosts events open to the public and collaborates with organization partners to increase awareness about health, wellness and

physical education, as well as increase awareness about issues having to do with diversity.

In most cases, this leadership permeates institutional mission, academics, research, and service. These new community-driven missions and visions incorporate the general ideal of creating experiences that encourage students to care for others. Institution #1 encourages service in its mission, institution #2 calls on students to meet the challenges of today's world, institution #3 develops students to be men and women for others, and institution #4 is dedicated to a Humanics philosophy. These missions and visions seep into the three structural units of each college. Institution #1 features academics and research linked to the centers focused on service, including of Excellence in Urban and Rural Education, Health and Social Research, the Great Lakes, Development of Human Services, and Small Business Development. Institution #2 features academics and research linked to the service of the multi-use center that includes a retirement facility and a daycare center, as well as the community garden and food pantry. Institution #3 also partners in a community garden and crate program, as well as collaborates on corridor development in public spaces that border the campus. Institution #4 lives out their mission through events open to the public and partnerships with local organizations, efforts focused on health and wellness such as the East Campus Outdoor Learning Center, and professional studies. All four schools feature strong service learning efforts.

Innovation #2: the principal orientation of the activities is toward socio-technological system engineering.

All of the colleges and their members are taking steps to align mission, academics, research, and service with the needs of the future and not of the present. At institution #1, academics and research are being aligned to assist the service areas of the Community Academic Center (CAC), West Side Promise Neighborhood, computing efforts (CS4HS and Hour of Code for Girls), and entrepreneurship events sponsored by the Small Business Development Center (SBDC), which are all helping to address the digital divide in the community, encouraging lifelong learning, and supporting the startup and small business economies. The Great Lakes Center, with its focus on Buffalo's waterways, and the Smart Grid project, with its focus on updating old power technology, are both focused on physical issues the local area faces.

Institutions #1 (through the Small Business Development Center), #2 (through Graduate Business Programs), and #4 (through the School of Professional and Continuing Studies) offer efforts for community professionals. Institution #2 has created a lifelong learning community and aims to create a multi-generation campus. With a focus on sustainability, institution #2 requires most students to take Environmental Studies 300, offers an Environmental Science Semester, engages students through community-based projects focused on solutions for waterway issues, and the entire college is working to implement the Attainable Sustainable plan for greater campus sustainability. The Center for Innovation in Urban Education at institution #3 focuses on the teaching challenges unique to urban environments. At institution #4, the curriculum at East Campus Outdoor

Learning Center allows for academic programs and students to work collaboratively to address larger societal issues from an intentionally design community-based curriculum.

Innovation #3: the basic structure includes interaction among three structural units (education, research and service).

All of the colleges feature spaces and academic work where faculty, students, staff and members in the community (government, professionals or community members) are working to address the current and future needs of society. These spaces feature participation by students who become interested in the needs and welfare of society. (Examples given include the world food problem, ecological systems, information, communication, transportation, education, technology, or urban living and the overlap that happens between issues.) These institutions are contributing back to society and are providing policy planning, technology guidance, and standards.

Institution #1 holds Carnegie Community Engagement Classification and has been named to the President's Higher Education Community Service Honor Roll. It is a member of Anchor Institution Dashboard Learning Cohort and Campus Compact. It has also drafted a Civic Engagement Plan. The College is engaging the community through a variety of centers, such as the Center for Excellence in Urban and Rural Education, the Community Academic Center, the Center for Health and Social Research, the Volunteer and Service-Learning Center, the Small Business Development Center, and the Great Lakes Center, and efforts, such as the West Side Promise Neighborhood, the Innovation, Creativity, and Entrepreneurship (ICE) Advisory Council, PRISM program, KidBiz, and Vision Niagara. Students and faculty are involved in many of these efforts and some of these efforts are generating a small, non-tuition revenue.

Students, faculty, and staff at institution #2 are collaborating with community members on the Pearson Town Farm and Catherine's Cupboard Food Pantry to create access to fresh food and to combat poverty. There are community partnerships with Partners in Development (to meet the needs of the immigrant population) and with local schools (to provide mentorship and support). The Community-Based Learning office works directly with faculty, students, and community partners to design and implement community projects and experiences in as many courses as possible. The Mission Aligned Business initiative includes the creation of a tented lakefront and renovation of the stone barn as event spaces. Students and faculty are involved in many of these efforts and some of these efforts are generating a small, non-tuition revenue.

At institution #3, the weekly Summer farmers market has become a prime location for community/university intersections and the York Road Partnership includes students and administrators in monthly meetings. The Messina First-Year Program helps new students adapt to real-world societal issues by having cohorts of students move together through their academic career. Parts of the curriculum are focused on real-world and societal issues, including Psychology, Pastoral Counseling, and Global Studies.

At institution #4, the Deaf Community Home partnership with the Center for Human Development (CHD) has been an evolving resource for the academic department and students interested in the human service and rehabilitation fields. The Special Olympics of Massachusetts and Special Olympics Student Club partnership is student driven. The club works to make the campus more inclusive as well as provide social and educational benefits for both our students and Special Olympic Athletes. The East Campus Outdoor Learning Center has historically provided services to students, faculty

and community partners to learn experientially in an outdoor adventure setting and one byproduct has been the creation of revenue.

Innovation #4: the three structural units have evolved for systematic emphasis.

All of the colleges feature systemic emphasis in some way. In the education function, students have a chance to learn about design principles, systems thinking, and human organization in different disciplines. Research is focused on the issues society faces today, the effects of different actions, and the needs of the future. These issues might include health care, efficient transportation, mail delivery, controlling crime, and education. The service function includes an active role in national or local policy. There is unity among these three functions.

Institution #1 reported that the education and the arts programs have shifted from training to purposeful work in the community. Adult and alternative students can engage in opportunities through online learning, graduate programs, continuing and professional studies, and the Small Business Development Center. The College addresses meeting the needs of society and societal concerns through planning and tracking processes that include the ANCHOR Institution Dashboard and the Promise Neighborhood dashboard.

Pearson Town Farm at institution #2 serves as a hub for classroom activities which creates meaning for what 'living the mission' looks like. The education partnerships provide College students with the opportunity to work with a culturally diverse population in need. Many faculty members have made it their mission to focus their research and work locally and in the state of Maine, such as in the areas of ocean acidification, lead contamination, and law enforcement and corrections. Finally, the

College is part of the Maine Campus Compact and the Green Campus Consortium of Maine.

The School of Education at institution #3 has programs such as cohort models for masters in teaching degrees, which are done with groups of in-service teachers in several neighboring districts. There are also online and hybrid courses, with some in-person courses meeting in the cohorts' districts and at schools in their districts. Faculty research is focusing on doing research on the development and implementation of online job search resources, workforce development, and evaluating the STEAM (sciences, technology, engineering, arts, and math) programming in four archdiocesan community schools. The strategic plan features a section on developing Ignatian Citizenship.

Institution #4 features many professional-focused programs, including Physician's Assistant and Physical Therapy, offered by the School of Professional and Continuing Studies and the School of Social Work. There is also a Physical Education / Health Education program focused on urban communities for student teachers to better understand this aspect and to help them to develop alternatives in the local community. The Strategic Plan features a point about Diversity and Inclusion.

Innovation #5: an active relationship between the university and society.

All of the colleges are participating in city and societal planning and decision-making through their three functions. Institution #1 is stewarding the West Side neighborhood of Buffalo, NY through many initiatives, including the West Side Promise Neighborhood, being an ANCHOR institution, Community Academic Center, being a partner in the community schools, sponsoring events for startups and small businesses, through the ICE Council, through the Great Lakes Center and sponsoring a regional

Partnership for Regional Invasive Species Management (PRISM) office, and by participating in Vision Niagara.

Institution #2 is creating a multi-generation learning community, runs Pearson Town Farm and Catherine's Cupboard Food Pantry, and continues to expand the conversation about sustainable agriculture with members of the community and campus who are coming together to discuss what this looks like in Maine.

Institution #3 is engaged in the York Road Initiative, where staff members make up some of the few people paid to help implement some of the work, including education advocacy, food access, and community and university communications related to the initiative. Student volunteers are working to meet community needs as expressed by community partners, including service with meal programs, adult education centers, immigration programs, and schools. The College partners in Light City Baltimore, a yearly collaboration of innovators and conferences and thinkers and entities across the city. Some offices are moving more toward partnerships and grant funding for work done in partnership with other institutions and community agencies.

The Center for Leadership and Civic Engagement at institution #4 is working to bridge the divide between the community and the institution. The College also has a downtown office space that allows for student interns to have an office space downtown. The East Campus Outdoor Learning Center collaborates on numerous community-based initiatives with school and organizations, including a Summer camp, teacher and corporate professional development, and youth programming. Members of the College are taking on leadership roles in the community.

The Role of Leadership in Innovation Development

As Erich Jantsch (1972) said, this new purpose of the institution should be expressed "of the institution itself, not of its members" (p. 228). A certain alignment of efforts is needed to create an institution that enhances "society's capability for continuous self-renewal" (p. 228). The institutions are taking on a leadership role in their surrounding communities through two distinct paths. The first is through compacts, awards, and recognitions. Institution #1 holds Carnegie Community Engagement Classification and has been named to the President's Higher Education Community Service Honor Roll. It is also a member of Anchor Institution Dashboard Learning Cohort and Campus Compact. Institution #2 holds bronze STARS status and Carnegie Community Engagement Classification. It is a member of the Maine Campus Compact and the Green Campus Consortium of Maine. Though not mentioned in their survey, institution #4 also holds Carnegie Community Engagement Classification and has been named to the President's Higher Education Community Service Honor Roll. All of the institutions are a member of Campus Compact, a coalition of colleges dedicated solely to campus-based civic engagement. The second is through planning. Institution #1 not only has a strategic plan, but has drafted the Civic Engagement Plan. Institution #2 also recently developed a new strategic plan, but has also developed the Attainable Sustainable plan to guide its commitment to sustainability. Institution #3 has a new strategic plan that features a section on developing Ignatian Citizenship.

If there is one theme that has emerged about leadership in this study, it is that of resourcefulness. Though there is much research that focuses on leaders at the highest levels (Christensen & Eyring, 2011; Crow & Dabars, 2015; Selingo, 2013; Thorpe &

Goldstein, 2010), this study highlights the ingenuity of those on the inside. For example, the significant work being performed by the Centers for Excellence in Urban and Rural Education, Health and Social Research, the Great Lakes, Development of Human Services, and Small Business Development at institution #1 exemplifies the kind of "intreprenuer" Lipman-Blumen (2000) discussed. All of these centers are grappling with large scale problems. The Centers for Excellence in Urban and Rural Education, Small Business Development, and Volunteer and Service Learning, they have seen a great level of success because they each feature intreprenuers who have been successful at converting ideas into solutions. Lipman-Blumen (2000) also believes that connective leaders commit themselves to the long term and have an eye out for the impact down the line. The study of institution #2 highlighted the efforts that connect the campus with the community in an integrative and supporting way, including aiming to be a multi-generation learning community, the Pearson Town Farm and Catherine's Cupboard Food Pantry, serving as a Catholic leader in Maine, the Community-Based Learning efforts, and the many faculty members who focus their research on local issues - all efforts that will produce rewards in the long term.

Zolli and Healy (2012) say that 'relational leaders' work "up and down and across various organizational hierarchies, connecting with groups who might otherwise be excluded, and translating between constituencies" (Zolli & Healy, 2012, pp. 139-140). These leaders possess "an uncanny ability to knit together different constituencies and institutions" (Zolli & Healy, 2012, p. 239). All parts of the system they work in become "invested, linked, and can talk to one another" (Zolli & Healy, 2012, p. 255). At Institution #3, relational leaders can be found throughout the York Road Initiative, where

staff members make up some of the few people paid to help implement the work of the York Road Partnership and there is also a community organizer whose office is located in a building on campus. There is a relational leader (director) of the East Campus Outdoor Learning Center (ECOLC) at institution #4 that creates meaningful relationships among College and community partners and there are a variety of relational leaders associated with inclusion and community engagement, including a vice president and community liaison.

Innovations as Response to Disruptive Forces

Erich Jantsch said in 1969 that the current approach to education may no longer be relevant, there is no planning when it comes to technology's impact on humans and the environment, and there is a lack of systems and futures thinking (p. 7). Disruptive forces are still visible in higher education today and we do see some institutions moving in a direction that addresses disruptions. For example, some institutions have turned to approaches to learning that connect students directly with real-world issues. Institution #1 is connecting education curriculum to education initiatives in the West Side neighborhood, responding to the new start-up and small business economy by offering entrepreneur-focused opportunities for students, focusing graduate programs on the work done in the Great Lakes Center and with the smart grid, and shifting the curriculum to introduce more High Impact Practices that incorporate service-learning in most cases. Institution #2 is also introducing more High Impact Practices- mainly through required internships found in many programs, addressing the aging population needs in Maine with healthcare and wellness-focused programs and opportunities, and, as part of the focus on sustainability, requiring most students to take ES300. A key component of the

Loyola Clinical Centers (LCC) are institution #3 students who are able to learn in an interprofessional environment that provides comprehensive, evidence-based clinical training and hands-on experience to help those in need in the community. At institution #4, the Adapted Physical Education concentration is focused on teaching physical education to those with disabilities.

Institutions are also addressing technology's impact on the environment in some ways. Institution #1 is supporting the work in the Great Lakes Center and with the smart grid. Institution #2 has developed an Attainable Sustainable plan and further addresses their concern for sustainability through STARS and Green Campus Consortium of Maine requirements, as well as their encouragement of environment-focused research and student work. At institution #3, Center for Community Service and Justice students develop graphic logos and web designs for local neighborhood associations. In current service-learning courses, students will apply their information systems and operations management skills to the needs of local community agencies. At institution #4, experiential learning programs and initiatives such as new Learning Commons have responded with intentionally designed learning to teach for social and emotional intelligence (SEI), critical thinking, group work and other process oriented learning skills.

Finally, institutions are also incorporating long-range planning techniques. Institution #1 developed a strategic plan that is focused on urban-engagement and has drafted a Civic Engagement Plan. It is also using certain guides to help them plan for the future, such as the Anchor Institution Dashboard and Campus Compact dashboard, Carnegie Community Engaged campus requirements, and the President's Higher Education Community Service Honor Roll requirements. Institution #2 is balancing

traditional tuition-based revenue with planning for diversified revenue streams. It has also incorporated many of the requirements above to help them plan for a more sustainable campus and surrounding environment. Institution #3 has a sustainability effort that features the Green Office Program, a voluntary certification program and support network created to help offices live out the Jesuit mission through sustainable initiatives in their workplace.

Innovations Helping Institutions to Evolve

Pressures for change surround higher education. As was discussed in the literature review, these pressures include reexamining roles and requirements, increasing productivity while decreasing costs, and finding the middle ground between enriching minds and applied work. Because of the range of pressures for change in higher education, evolution in this context must be specifically defined. This study used the five crucial innovations to identify evolution. Jantsch (1969) was particularly concerned with how institutions could evolve in a way that allows them to better respond to societal needs. The data collected on these four institutions have suggested that there are many ongoing response efforts. While institution #1 is focusing on the education needs of the local West Side neighborhood, institution #2 is focusing on environmental sustainability and meeting the needs of the local aging population. Institution #3 is employing the goals of Ignatian Citizenship to collaborate on shared physical spaces with the local community. Institution #4 is partnering with local hospitals and medical entities on training the next generation of healthcare providers. All of these colleges are combining education, research, and service to develop solutions to societal challenges.

Innovation Integration in Institutional Planning Processes

Most of the institutional efforts mentioned above align with planning efforts. The main point of planning at most colleges is the strategic plan. Most of the campuses cited strategic plans that correspond to their efforts. The strategic plan at institution #1 is named SUNY's Urban Engaged Campus, a title that matches their urban West Side-engaged efforts. The strategic plan at institution #2 is named Sustaining the Promise, a title that matches their major focus on sustainability at this time. The strategic plan at institution #3, titled The Compass, points the way towards Ignatian Citizenship.

Besides strategic planning, many of the campuses have other plans that are helping them to realize some of their strategic plan goals. For example, institution #1 has drafted the Civic Engagement Plan and institution #2 has developed the Attainable Sustainable plan. Institution #3 also has a sustainability effort that features the Green Office Program, a community garden and an annual energy reduction competition hosted through Campus Conservation Nationals.

These plans are helping each institution to align education, research, and service toward societal needs, a major concern of Erich Jantsch (1969).

Integration of the Findings from a Systems Perspective

In 1969, Erich Jantsch was asked to serve as a research associate at MIT following faculty-led conversations about the future of the university. Though originally asked to discuss technological forecasting, he realized that forecasting is meaningless if pursued in isolated disciplines (p. 1). His research and thoughts about the futures of MIT and American universities resulted in the publication of the report, "Integrative Planning for 'Joint Systems' of Society and Technology- The Emerging Role of the University".

Jantsch was particularly concerned about the lack of systems and futures thinking in society (p. 7) when he wrote his 1969 report. In addition, he was concerned that university members could not see an "alternative to individual and group action" (p. 2). They did not imagine a new role for the university, one which serves as a leader in society.

Erich Jantsch might have been be encouraged by the parts of institutions that are taking on leadership roles in order to respond to needs that are specific to their surrounding communities. He also might have felt hopeful to see the planning efforts that are intended to address disruptive forces and create more opportunities for self-renewal. It is unclear whether Jantsch would regard some of these efforts as "piecemeal and passive" (p. 7), one of his concerns. Though Jantsch provides a framework for this new role, it has only allowed this research to study what is present (and because of the limited scope of the study, the perceptions of three offices at each institution). Thinking in systems involves looking at a whole system and the interacting parts of it (Ollhoff & Walcheski, 2002, p. 16). Jantsch's five crucial innovations is only the first step in studying institutional innovation.

Revisiting Assumptions from Chapter One

The five assumptions stated in chapter 1 were based on the dissertation researcher's background and professional experience. The first assumption was that Erich Jantsch's five crucial innovations could be found to some extent in some institutions today. There are similarities found among the disruptive forces of 1969 and today, Jantsch's predicted five crucial innovations, and the endeavors found in some institutions today. This assumption held true. Current disruptive forces are influencing the kind of

151

innovation needed to take place in institutions today, so it is also assumed that innovations will vary per institution, and they do.

A second assumption was that the discovery of the five crucial innovations is important to Jantsch's legacy, the fields of systems and futures thinking, as well as to research on innovation in higher education. While Jantsch is oftentimes cited, he is rarely the focus of dissertations and scholarly work. His work forms the roots to several scholarly fields and this study puts his work in the forefront. The information gathered is also of interest to other small institutions considering innovation and may suggest alternative innovative approaches or ignite an interest in looking at other fields for innovation inspiration. Other institutions can easily be inspired to create their own sustainability or civic engagement plan after reading about the many efforts at each of these institutions.

Third, while it is acknowledged that every institution is different, the institutions selected are similar in size, resources, and location (East Coast). Their limitations, as compared to large research institutions, make them an interesting study because of how they have approached their evolution. A common theme of service and meeting the needs of their communities is a focused one at each institution studied.

Fourth, it was assumed that participants would present all of the relevant information needed for the study. Also, the information provided is subjective and multiple. Hopefully, relying on a variety of sources helped to triangulate the information provided. This assumption cannot be said for certain and it is even known that some participating offices reported to the same units in some colleges. An effort was made to gather sources in different areas of each college.

Finally, using a qualitative approach to the study provided complementary methods of data collection and analysis. This approach was selected in order to produce a wide variety and amount of information for each case study. This assumption held true and the qualitative methodology was an effective method to gather a wide variety of information for the development of thorough case studies on each institution.

Chapter Five Summary

This chapter provided an analysis, interpretation and synthesis of the findings. The previous discussion illustrated ways in which Erich Jantsch's five crucial innovations could be found to some extent in some institutions today. The discussion reveals that institutions appear to be evolving to some extent according to this framework. Analyzing the findings helped to produce an integrated synthesis. The challenge throughout the data collection and analysis was to make sense of the information, streamline the volume of information, and to identify patterns.

Presenting such an analysis warranted a degree of caution. First, the research sample at each institution was small; the entire institution was not involved in the study. Second, the research sample as a whole was small; not every small institution in the United States was studied. Third, the focus of this study was specifically on whether Jantsch's five crucial innovations could be found to some extent in some institutions today. These findings could indicate evolution using Jantsch's ideas, but other forms of evolution could have been left out of the study simply because Jantsch's framework did not include it. For these reasons, it must be stressed that the implications and conclusions drawn from are specific to this study, including the offices within the institutions studied, and cannot represent all small institutions in the United States.

Aside from potential biases involved in researcher-as-instrument, as is typical of qualitative research, the researcher acknowledges possible additional bias in analyzing the findings because she works for a small institution of higher education (though one not studied), she knew individuals involved in the study, and she is a graduate of one of the institutions studied. To help minimize this limitation, the researcher used various forms of data collection and had individuals collaborate on data gathering and reviewing their own pieces of the research. Chapter six will conclude the dissertation and provide recommendations for further research.

Chapter Six

Conclusion and Recommendations

The purpose of this multicase study was to explore whether or not Erich Jantsch's five crucial innovations can be found to some extent in the innovations of four small institutions of higher education (IHE). The conclusions from this study follow the research questions and the findings and therefore address five areas: a) to what extent Erich Jantsch's five crucial innovations can be found in the innovations of small institutions today; b) the role leadership has played in these innovations; c) responsiveness to present-day disruptive forces, d) innovations helping institutions to evolve; and e) integrating innovation in their institutional planning processes. The conclusions are followed by the researcher's recommendations and a final reflection on this study.

Conclusions

Small colleges are taking on a leadership role in their surrounding communities.

According to the findings, small institutions of higher education are taking on a leadership role in their surrounding communities. The connections between colleges and their communities is not new. Many local colleges formed ties with their local communities as they were inspired by the German-born Humboldtian model in the twentieth century. Innovation can be seen in how these ties have evolved and how colleges are responding to the changing needs in their surrounding communities. Each institution studied featured areas of research, education, and service that were adapting to meet needs in their particular community.

Small colleges can respond to disruptive forces.

The kind of disruptive forces Erich Jantsch discussed in his 1969 report are still visible in higher education today. We do see some institutions moving in a direction that addresses these disruptions. The institutions studied are connecting students directly with real-world issues, are addressing technology's impact on the environment in some ways, and are incorporating long-range planning techniques that will help them to co-create the future with their communities.

Innovations are helping institutions to evolve.

This study used the five crucial innovations to identify evolution. Erich Jantsch (1969) was particularly concerned with how institutions could evolve in a way that allows them to be responsive to societal needs. The data collected on these four institutions have shown that there are many ongoing response efforts, which indicates that small institutions of higher education are evolving in this context.

Institutions are integrating innovation in their institutional planning.

Jantsch (1969) called upon institutions to take on a leadership role as part of their evolution (p. 68). Through their planning efforts, all of the institutions profiled are aligning education, research, and service towards their innovation goals. In this way, institutions are considering future objectives and outcomes (p. 68) which will allow them to have an impact for years to come (p. 70).

Erich Jantsch's 1969 report and other related work deserves closer study in the context of higher education research.

Erich Jantsch's five crucial innovations were introduced in a 132-page report titled, "Integrative Planning for the 'Joint-Systems' of Society and Technology - The Emerging Role of the University". This report is not the only time Jantsch concerned himself with higher education. Jantsch's entire collection of research features many ideas having to do with higher education evolution. The first major finding of this research is that Erich Jantsch's five crucial innovations can be found in small institutions of higher education today. A conclusion that can be drawn from this finding is that Erich Jantsch's 1969 report and other related work on higher education deserves closer study in the context of higher education research.

Recommendations for Further Research

The researcher offers recommendations based on the findings, analysis, and conclusions of the study. The researcher recommends that further studies be conducted to develop a larger database of information to gain a more comprehensive understanding of how small institutions are evolving. The following should be considered:

156

1. Each institution studied was taking on a leadership role by aligning research, education and service to meet societal needs in their surrounding communities. Further studies involving a larger sample of institutions, more comprehensive studies, and studies over time can offer more information on how institutions of higher education are evolving because of this role.

2. Some institutions are considering future objectives and outcomes which will allow them to have an impact for years to come. More research and concrete models are needed for long-term and integrative institution planning for higher education, specifically ones that offer the kind of holistic and integrative approach that Erich Jantsch was interested in.

3. Further research is needed to develop a framework using the five crucial innovations in order to guide institutions in responding to societal needs and creating a new future. Research that is presented in a way that can be replicated will help institutions to intentionally innovate.

4. A majority of the innovation research on higher education studies large universities with the funds to invest in innovation, but it is worth examining the ways in which small institutions have innovated over the past few decades in order to stay current and keep their doors open. Further research can be done on the evolution of small colleges and that expands on this study.

5. Small institutions have had to be innovative in the ways in which they respond to disruptive forces because of their minimal funding and resources. Using Erich Jantsch's five crucial innovations to plan for and evaluate innovation presents an interesting opportunity for small institutions. Furthermore, Erich Jantsch's 1969

report and other related work on higher education deserves closer study in the context of higher education research. Further research can be done to develop a model that uses the five crucial innovations for institutions to apply and further research can be done to identify and study Jantsch's further work related to higher education.

Looking to the Future

Introduction

As the literature review highlights, some American institutions of higher education have transformed from being institutions that train young men for the clergy, into addressing the needs of the larger population. As a result, the curriculum has changed from a limited one that was prescribed, to an elective system featuring choice. The structure of higher education also evolved, from one that only contained an education function, to one which now includes the three functions of education, research, and service. The pressures present in Jantsch's time and still present today question whether the industry of higher education is due for another evolution. Jantsch's (1969) primary argument is that higher education should be an active participant in "leading society into the future" (p. 50). Are higher education institutions ready for their next evolution?

The literature review also points out the rising costs of higher education and a disinvestment in higher education from society. Funding from outside donors is increasingly limited and the complexity of needs institutions hope to support almost always surpasses tuition revenue. While universities partially subsidize their service and research functions with taxpayer dollars and contracts, most small institutions are tuition dependent. Small institutions have had to decide how to evolve in the face of decreasing

enrollment, rising costs of services, and the rapidly-changing needs of society's future generations. At the same time, states have cut appropriations during each downturn in the economy (Selingo, 2013, p. 62). How can institutions be expected to invest in society's future when society seems not to be concerned with the future of higher education?

There exists a tension between doing what is right and what is necessary. Higher education institutions could continue on, business as usual, paying no attention to the needs of society. Though, the literature review also pointed out that, for institutions, the "geographical interest vested in their surrounding communities" (Maurrasse, 2001, p. 20) is too great. Institutions cannot operate in a silo and expect not to be impacted by the surrounding world. The fate of communities is the fate of the college (pp. 4-5); there is no institution without the neighborhood. Despite society's disinvestment in higher education, institutions could and need to take another path. Institutions should decide to do what is right, but also what is necessary. Based on this argument and on the idea that this dissertation supports (that institutions of higher education could serve as a leader in society), let us discuss what Erich Jantsch really had in mind and what is needed to make it a reality.

Jantsch's Vision of a Transformed University

The Five Crucial Innovations featured in Erich Jantsch's 1969 report are only part of this 129-page document. The last chapter features his ideas for the first steps universities needed to take in order to become leaders in society. Aware of the resistance colleges will face, he first addresses the question of whether it would be easier to create a new university to meet the goal of becoming such a leader early on in this chapter. Jantsch warns that "experiments… would take too long" (p. 123) to have an effect. These

new structures must be "entrepreneurial in spirit" and attract creative people, so that the life is "sucked out" of the old structures (p. 124). He imagined a 15-year timeline to make it happen.

He believed the following concrete steps should be taken:

1. System laboratories should be established to focus on the 'engineering' of urban and health systems. Jantsch imagined different laboratories that could work on different problems, but he also imagined they could be under one Vice President or one umbrella center that would provide administrative support and a framework for integrative studies. Aware of the cost of physical centers, he mentioned that they could be 'paper institutes' that exist only on paper.

2. There should be a structural change of engineering to functional departments that included the engineering field, general engineering, social sciences and humanities, and freely selected subjects.

3. Interdisciplinary centers for integrative studies and policy studies should be established and should possess an active attitude and offer consistent programming, such as that focused on forecasting, methodological development, and policy studies that addressed the role of the university in society.

4. Full time staff groups should direct interdisciplinary centers, ensure continuity and consistency in purpose, propose and manage joint projects with government and industry, and link the university to problems on a large scale, such as urban systems and poverty.

5. The 'inter-university' center for strategic studies should measure problems to be tackled by the university.

6. A seminar series would focus on general futures-thinking themes and would

    become a key part of graduate study. (Jantsch, 1969, pp. 125-128)

Jantsch's Ideas, Translated for Today's Small Institutions

Jantsch includes a wide variety of ideas for the new university. As detailed as his

ideas are, there are many questions left to answer. How do these ideas talk to one another,

how do they translate to small institutions, and what are they leaving out? This subsection

considers these questions.

1. Though Jantsch revealed that he is against the idea of creating a new university,

    he does not discuss an appendage on the university. Many institutions have

    created 'X' entities (such as HarvardX and MITx) and Extensions (such as the

    Cornell Cooperative Extension) to carry out innovative endeavors. This might be

    an option for small institutions in order to create change and overcome resistance.

2. In Jantsch's steps, there are many components. Small institutions might, instead,

    prefer to have one system laboratory that carries out multiple projects, oversees

    interdisciplinary service-oriented degree programs, studies and measures societal

    problems, and hosts a seminar series. This would allow one center to guide and

    coordinate all of the activities. As Jantsch imagined, it could be focused on a few

    key solutions, such as education, poverty, or small business development.

3. There is a lingering question in this set of next steps about where the liberal arts

    fit. Jantsch points out that the humanities should be given a larger role in

    education (p. 28). He is also concerned that our technology-dominated

    environment diminishes the aesthetic value we have for our creations and the

    world around us (p. 29). Yet, he discusses the need for all students to be

connected to purposeful work (p. 34). Can we have a higher education institution that both broadens the mind and does purposeful work? The case studies that feature service elements give us a glimpse into the answer to this question. An institution's curriculum can teach the liberal arts through the lens of societal problems. The laboratories can work on solutions with a liberal arts lens. It requires a shift in the curriculum and it requires requiring people of the institution be oriented to this goal. This is not a complete answer, just a taste of it.

4. There is a need to align the entire institution in order to move in one direction. Though not directly addressed in Jantsch's 1969 report, there is a question of leadership. This dissertation discussed the strong leaders that have maneuvered their institution through change and evolution. These stories do not share the remaining low morale, reports of faculty votes of no-confidence, or the people who lost their jobs in order to create the institution that exists today. Change is hard. All higher education institutions require strong leaders who can balance compassion with the ruthlessness. They also require leaders with a vision that they can concisely articulate to the campus and to the public, so that it becomes the new norm.

5. Another lingering question is, what will happen to the rest of the institution? What happens to Student Affairs, Admissions, Business and Finance, and Advancement? Does the new university not include clubs, sports teams, or student activities? Will these units become smaller and more streamlined? Or are all of these things reimagined under the new umbrella center?

6. Lastly, where does the funding come from? Jantsch imagined the institution making revenue and becoming self-sustaining, ideally not on the backs of students. In what ways can institutions find alternative funding and revenue and how does this alter the role of the institution as a leader in society?

This is perhaps a set of questions that possess no satisfying answers, but it is hard to imagine a complete picture of what this looks like. Are we left with an institution that features two distinct units, one that is undergraduate and curriculum focused and another that is a service-oriented change agent with graduate and professional programs based on active, project-based learning? Or are we left with an organization that operates as a business and teaches students through experience, like one giant think-tank? We may never know, and perhaps Jantsch didn't know, as well. Though, for higher education institutions looking to become a leader in society, these are all ideas to ponder.

Institutions can use Jantsch's ideas to become more distinctive, responsive, and sustainable. If small institutions focus (or continue to focus) on their surrounding communities, they can see what is needed and articulate a vision for a better future to the campus and prospective students.

1. Faculty research can identify problems and possible solutions that are passed on to system laboratories. They would work with each other, members of the community, and upper-level students. A faculty group on campus would focus on forecasting and prediction.

2. Seminars can be held for faculty to discuss such problems with members of the community and present possible solutions. This would be a good way to get feedback.

3. Students would learn to see these problems using the content as a lens in classes.

4. Classes would focus their projects on possible solutions.

5. All campus activities would also be focused on assisting solutions.

6. System laboratories would be coordinating bodies for all of these activities.

Jantsch put deep thought into this vision of the new university. He believed the university was structurally weak, as compared to government and industry, because it fails to plan for the future. At the same time, it does not take an active role in shaping society's future. Though his main concern was with finding a leader for society, he knew the role would be best for the future of the university, as well. Universities can help society to forecast different futures, make a choice, and work towards a better future.

Researcher Reflections

This study took ten months to complete. It was a pleasure to meet passionate administrators and faculty members at other small institutions of higher education. As a fellow administrator and adjunct at a small institution, I greatly appreciate their time and dedication in completing their studies. It is energizing to read about the significant efforts that are drawing colleges and communities closer together, allowing staff, faculty, and students to focus their energy towards improving the lives and environment around them. This study required a great deal of responsibility. Each institution has a story to tell and I made every effort to tell that story in a way that is accurate and reflective of each institution.

Another responsibility was interpreting the thoughts of someone who is deceased. It is my sincere hope that this study was carried out in a way that highlights the work of Erich Jantsch and does justice to his ideas. There were many people not involved in the

study who were not directly involved with the study but who helped me to interpret Jantsch's words, thoughts, and ideas. I am immensely grateful to all those in the systems thinking and futures communities who replied to my emails and video chatted with me over the years about his work. I have already assured many of these generous individuals that I would not let the life and work of Erich Jantsch die, and I intend to stay true to my word through further work and research.

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166

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Appendix A

Phase I: Qualifying Survey[1]

After successful completion[2], you will receive an email that asks that you complete a survey packet (phase 2).

The following information is true for

(type institution name):

Please add an 'X' into the slots on the left side that prove to be true.

	1. Is the institution located on the Eastern part of the United States?
Evidence:	

	2. Does the institution have an FTE of less than 10,000 undergraduate students as reported in the 2015 IPEDS database? (http://nces.ed.gov/collegenavigator/)
Evidence:	

	3. Are you or your office directly involved in efforts that involve the community?
Evidence:	

	4.a. Is the institution engaged in activities in the community?
Evidence:	

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[1] *75% checks indicates successful completion of this qualifying survey.*

[2] See footnote #1.

170

	4.b. Is the institution serving as a leader in the community?
Evidence:	

	5.a. Do parts of the curriculum focus on real-world problem solving?
Evidence:	

	5.b. Do parts of the curriculum teach students how to think, versus what to think?
Evidence:	

	6.a. Does the college feature lifelong learning initiatives?
Evidence:	

	6.b. Do students learn to be lifelong learners?
Evidence:	

	7.a. Are there spaces in the institution (either physically or virtually) where faculty, students, staff, and members of the community (industry, government, community members) work together to solve shared problems and/or plan for the future?
Evidence:	

	7.b. Are there spaces in the institution (either physically or virtually) where faculty, students, staff, and members of the community (industry, government, community members) work together to plan for the future?

Evidence:

	8.a. Are there academic departments established to solve real-world problems?

Evidence:

	8.b. For the education function (contains any of the following): ● Learning in some areas focuses on applied learning (real-world projects) versus training, ● Learning in some areas involves societal engineering (planning for the future, impacting a part of society), ● Lifelong learning is an essential focus in some areas, ● Parts of the curriculum are focused on complex changing situations versus jobs right now. ● Learning in some areas involves students learning how to think, not what to think. ● Students learn how to learn and how to apply their learning in different contexts, so that they may continue to do so throughout their lives.

Evidence:

	8.c. For the research function: ● Are there academic departments established to solve real-world problems?

Evidence:

	8.d. For the service function (contains any of the following): ● Are there spaces in the institution (either physically or virtually) where faculty, students, staff, and members of the community (industry, government,

	community members) work together to solve shared problems and/or plan for the future? • Is the institution serving as a leader in the community?
Evidence:	

	9. Is the institution collaborating with government and industry in some way?
Evidence:	

	10. Is the institution taking steps to become financially independent from charity, grants, and other types of support in some way?
Evidence:	

	By placing an 'X' in this box, I believe the above to be true about my institutio
	Date

Job Title	

Office Name	

Institution Name	

173

Phase II: Survey Packet

Part A: Study Overview

INTEGRATIVE PLANNING FOR THE "JOINT SYSTEMS" OF

SOCIETY AND TECHNOLOGY -- THE EMERGING ROLE OF

THE UNIVERSITY

Observations on Some Aspects of the Future of

the American University, with Special Reference

to the Massachusetts Institute of Technology

by

ERICH JANTSCH

Visiting Research Associate

Alfred P. Sloan School of Management

Massachusetts Institute of Technology

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

The purpose of this study is to determine if Erich Jantsch's five crucial innovations for

universities can be found to some extent in the innovations in small institutions of higher

education today. Using a qualitative approach, individuals from four small institutions of

higher education will be interviewed and surveyed to determine if Jantsch's crucial

innovations are present in institutional innovations to some extent. These methods

include:

- Surveys,

- One-on-one interviews, and

- Follow-up statements.

This research focuses on one question, "Can Erich Jantsch's five crucial innovations be found to some extent in the innovations of small institutions of higher education?" and it will use a technique that Jantsch suggested himself, follow-up statements. Institutions chosen for this study will be selected based on their size of under 10,000 FTE (full time equivalent).

About Erich Jantsch

Erich Jantsch was born in Vienna, Austria in 1929 and died in Berkeley, California in 1980. He was one of the founders of the Club of Rome and his academic work made a significant impact on the fields of systems thinking, futures thinking, sustainability and higher education. Jantsch was a trained astrophysicist, but his dissatisfaction with disciplinary silos led him to explore humanity's impact on the environment, the future of society, and the interconnectedness that is our world. Jantsch's (1969) report, titled

"Integrative Planning for 'Joint Systems' of Society and Technology- The Emerging Role of the University", was an early attempt to design an integrative approach to institutional planning for societal engineering. The concerns Jantsch identified in 1969 are familiar. Many higher education researchers still question the relevance of higher education, the sustainability of the institutional structure, and the impact of higher education on society. Each institution has taken its own path to adapt to societal pressures for change. In his report, Jantsch proposed, or rather hoped for, five crucial innovations institutions of higher education should implement. While a majority of the research surrounding innovation in higher education focuses on the maneuvers of large universities to adapt to today's disruptions, this study focuses on small institutions. Jantsch passed away ten years after the publication of this 1969 document and didn't have the opportunity to see if his ideas came to fruition. Higher education today is still rocked by disruptive forces and it is worth examining if these innovations can be found in small institutions that have had to react to pressures for change over the past few decades.

About the Crucial Innovations

In "Integrative Planning for the "Joint-Systems" of Society and Technology—The Emerging Role of the University", Erich Jantsch (1969) pointed out disruptive forces still found in higher education today, including student unrest, the degrading side effects of technology, and the lack of integrative planning for the future. Universities, he said, are deeply affected by these pressures for change through its three functions: education, research, and service. At the time in 1969, he called on universities to lead the process of transforming disruptive forces to cohesive ones in a new leadership role, because "no

other institution is equally well qualified and legitimized" (p. 7). Universities, he said, have the "unique potential for enhancing society's capability for continuous self-renewal" (p. 9). For higher education to serve in such a role, Jantsch hoped for the following institutional innovations:

1. a new purpose of the university that enforces the pluralism of society by weaving creative and technological energies in society and education, helping to transform conversations from science and technology into long-range planning objectives, assessing possible futures, providing positive and productive leadership, and educating leaders for society (pp. 10-11).

2. shifting activities at the university toward "socio-technological system engineering" (p. 11) and futures thinking in regard to the 'joint systems' of society and technology.

3. altering the structure of the university into three types of interacting structural units: "system laboratories" that plan and design systems, "function-oriented departments" (function/mission of technology in the context of societal systems), and "discipline-oriented departments" (custodians of basic disciplines).

4. emphasizing operating principles to focus on training toward purposeful and useful work, diversifying engineering education, acceptance of the "essential role in lifelong education", focus on technological and socio-technological research, and "the active and integral engagement" through "system laboratories" (p. 11).

5. a more active relationship between the new university and society (p. 13).

Definition of Terms

- Discipline-oriented departments-- departments oriented toward specific

  disciplines; Jantsch advocated for discipline-oriented departments that focused on

  "know-why" versus "know-how".

- Function-oriented departments-- take a systems approach; for example:

  concentrations focusing on human development, environmental control or urban

  analysis; become the backbone of graduate studies; would contribute to system

  laboratories; Jantsch predicted that professions of the future would be oriented

  around function-oriented categories.

- Integrative system planning-- planning that cuts "across social, economic,

  political, technological, psychological anthropological and other dimensions;

  there are two key notions of integrative system planning: integrative planning for

  the 'joint systems' of society and technology and socio-technological system

  engineering" (Jantsch, 1969, p. 8).

- 'Joint systems' of society and technology-- "the systems of which both society

  and technology are the constituents, systems of urban living, environmental

  control and conservation, communication and transportation, education and

  health, information and automation, etc." (p. 8)

- Know-how-- a specialized approach to education; education for professions of

  today; lacking a systems approach; a reductionist approach.

- Know-what-- determining purposes; encouraging outcome-oriented thinking;

  provide a deeper meaning to research.

- Know-where-to-- determining what to focus research and activity on; "through inventive contributions to public policy planning and to the active development of new socio-technological structures" (p. 80).

- Know-why-- Consideration for the future for socio-technological and human-technological system engineering versus promoting knowledge only for the here and now.

- Long-range forecasting/planning-- assessing courses of action in the present based on future consequences; recognizing "upcoming decision points" in advance" (p. 57); determine alternative courses of action; identify long-range outcomes.

- Pluralism of society-- "bringing the creative energies of the scientific and technological community as well as of the young people, the students, fully into play" (p. 10); "not for problem-solving, but for contributing to society's self-renewal" (p. 62).

- Political institution-- "in the broadest sense, interacting with -- and leading -- government and industry in coordinated efforts to redesign and invent 'joint systems' of society and technology. This service will be remunerated in ways which will make the university independent from charity, grants and other artificial and "non-rational" types of support, enabling it to become master of its own science policy (including the funding of basic research)" (p. 12); providing positive leadership in society.

- Self-renewal-- guarding against decay; promoting pluralism; "improving internal communication among society's constituents" (p. 62); providing positive leadership in society; includes two aspects: "The continuous self-renewal of the

179

university itself, and the education for continuous self-renewal which it gives to its students" (p. 73).

- Socio-technological system engineering-- providing leadership that guides society; "application of technology in the context of social systems" (p. 81).

- System laboratories-- "prime contractors" for concerted university-wide or inter-institutional projects, and a shift toward services based less on development than on socio-technological system planning and design" (p. 12); a space where students, faculty and staff work alongside community members, government and industry, "emphasizing system engineering in the broad areas of 'joint systems' of society and technology, and bringing together elements of the physical and the social sciences, engineering and management, the life sciences and the humanities" (p. 75).

Part B: Document and Web link Submissions

If you would like to submit any document and Web links pertaining to this survey, please do so using the following directions.

- Document files can be added to the open Google folder here.
  - (will be a link)
- Web links can be pasted below.
  - *(participants will be able to paste a Web link here)*

Part C: Institutional Survey

Directions: The following information is being collected about your office and your office's perspective. This information can be filled out by anyone in your office. As a

Google doc, your entries will automatically save and you can come back to the form as many times as needed for entry and until complete. If you know of other initiatives going on outside of your office space, you may use them as examples.

Innovation #1: New Purpose of the University
Example: The institution and its members are taking an active role in the community, community development, and setting goals for the community's future. This leadership permeates institutional mission, academics, research, and service.
Q1: Describe up to 3 ways faculty and students are collaborating on solutions to societal issues?
Q2: Describe up to 3 ways members of the community (government, professionals or community members) are collaborating with students and faculty on solutions to societal issues?
Q3: Describe up to 3 ways your institution, your center, or members of your institution are publicly discussing and translating the impact of science and technology advancements on social systems.
Q4: Describe up to 3 ways your institution, your center, or members of your institution are discussing possible alternative courses of action of science and technology with members in the community (government, professionals or community members).
Q5: Describe up to 3 ways your institution, your center, or members of your institution are providing positive leadership about societal issues with members in the community (government, professionals or community members).

Innovation #2: The Principal Orientation of the Activities is Toward Socio-

181

Technological System Engineering
Example: The institution and its members are focused on aligning mission, academics, research, and service with the needs of the future and not of the present.
Q1: Describe up to 3 ways the institution is encouraging and supporting students to engage in lifelong learning.
Q2: Describe up to 3 ways academic programs focused more on broader societal issues versus just specialized topics.
Q3: Describe up to 3 ways work being done in academic programs contributing solutions to societal problems.
Q4: Describe up to 3 ways work being done in academic programs contributing solutions to problems stemming from the impact of technology in society.

Innovation #3: The Basic Structure Includes Interaction among Three Structural Units
Example: The institution features spaces and academic work where faculty, students, staff and members in the community (government, professionals or community members) are working freely to address the current and future needs of society. These spaces feature participation by students who become interested in the needs and welfare of society. For example, these needs may include the world food problem, ecological systems, information, communication, transportation, education, technology, or urban living and the overlap that happens between issues. The institution is also contributing back to society, providing policy planning, technology guidance, and standards.
Q1: Describe up to 3 spaces on campus or virtually where faculty, students, staff and members in the community (government, professionals or community members) are working together to plan and design for societal futures.

Q2: Describe up to 3 spaces on campus or virtually where faculty, students, staff and members in the community (government, professionals or community members) are acting as small profit-centers for the institution.

Q3: Describe up to 3 examples where there is interaction between academics and a space on campus or virtually where faculty, students, staff and members in the community (government, professionals or community members) are working together to plan and design for societal futures.

Q4: Describe up to 3 multidisciplinary and interdisciplinary academic departments that are focused on real-world and societal issues.

Q5: In what ways are academic departments on campus linking the basic curricular knowledge to real-world application, in the present and future?

Innovation #4: The Three Structural Units have Evolved for Systematic Emphasis
Example: In the education function, students have a chance to learn about design principles, systems thinking, and human organization in different disciplines. Research is focused on the issues society faces today, the effects of different actions, and the needs of the future. These issues might include health care, efficient transportation, mail delivery, controlling crime, education, or safer airways. The service function includes an active role in national or local policy. There is unity between these three functions.
Q1: Describe up to 3 academic departments that have shifted from training toward purposeful and useful work.
Q2: Describe up to 3 learning opportunities available for adult and alternative students at the institution.

Q3: Describe up to 3 examples of research taking place concerning evolving social systems.

Q4: Describe up to 3 examples of how the university is shifting its focus to societal issues and how this focus is permeating academics and service.

Q5: Describe up to 3 ways the institutional mission and/or strategic plan addresses meeting the needs of society and societal concerns.

Innovation #5: An Active Relationship between the University and Society
Example: Through its 3 functions, the institution participates in city and societal planning and decision-making.
Q1: Describe up to 3 ways the institution is playing a leadership in the surrounding community.
Q2: Describe up to 3 ways the institution is interacting with government and industry leaders.
Q3: Describe up to 3 ways the institution is relying less on charity, grants, and government support.

Closing questions about measurement and effectiveness.
Q1: Describe up to 3 ways you measuring the effectiveness to 3 endeavors mentioned above.

Q2: Describe up to 3 innovations you mentioned that you believe are successful and why. (Please include metrics, if applicable.)
Q3: How long do you expect these innovations to work for and why?
Q4: Describe up to 3 innovations that didn't work and what stood in their way.
Q5: Describe and cite the metrics you are using to deem these projects

Thank you for participating in this portion of the study.

	By placing an 'X' in this box, I believe the above to be true about my institution.
	Date

Office Name	

Institution Name	

Thank you!

Appendix C

Phase III: Interview Questions Examples*

(*Interview questions will be specific to each institution and are dependent upon the information collected in Phase II.)

1. In Innovation #1, question 1, you said, "faculty and student are collaborating virtually on this innovation". Can you describe how this collaboration is taking place and at what frequency during the semester?

2. In Innovation #2, question 1, you said, "the institution offers extracurricular programming on work-related topics". Can you describe what this programming entails and what kinds of topics are covered?

3. In Innovation #3, question 1, you listed quite a few community member titles students and faculty are working with on projects. For what organizations or government groups do these individuals work for?

4. In Innovation #4, question 1, you describe a particular class project in EDU122 where students work with People Inc. to plan for the education of residents. Is this type of activity only found in EDU122, or elsewhere in the education curriculum?

Appendix D

Phase IV: Reflection Statement

After successful completion of the follow-up statement, the information provided for your institution will be collated. You will then receive an email that verifies successful completion of the study. Once completed, you will receive a copy of the final dissertation.

Office Name	

One follow-up activity that Erich Jantsch suggested, but never had an opportunity to complete, was that of soliciting brief statements regarding the following concepts in hopes that it "might become an ongoing activity of enriching and refining viable concepts for the future university" (p. 5) so that it might pave the way for action.

As a follow-up to your interview, please submit a "brief, but precise" statement on your thoughts about:

- Tasks

- (Institutional) Structures

- Interdisciplinary requirements

- Current and anticipated state-of-the-art methodology and curriculum development

- And availability of talent for (the proposed) systems laboratories*

*Please note these concepts are stated exactly as Jantsch stated them, and with no further explanation. Please use your own understanding of each term based on your involvement in this study so far to guide your response.

Please enter your response in below and take up as many lines as needed.

Thank you for participating in this study.

	By placing an 'X' in this box, I believe the above to be true about my institution
	Date

Office Name	

Institution Name	

Thank you!

Appendix E.i.

Informed Consent Letter

Principal Researcher: Leah MacVie

Research Title: Crucial Institutional Innovations: Evolutionary Change in Higher Education

You, your office and your institution are invited to participate in a research study that explores Erich Jantsch's 5 Crucial Innovations. Your participation in this study requires successful completion of 4 research phases: 1) qualifying survey, 2) a survey packet, 3) a possible interview, and 4) a follow-up statement. The qualifying survey will be delivered electronically and contains 10 points to verify that your institution is eligible to participate in this study. The survey packet will be delivered electronically and includes a brief introduction to the study, a short biography about Erich Jantsch, and a brief summary about the crucial innovations. The second part of the survey packet includes the survey questions. Participants will first be asked to complete a personal data sheet and then answer 25 open-ended questions. Any answers that require clarification will be compiled into interview questions. A 1.5 hour time slot may be booked for this one-on-one interview to take place in person or via Web conference at a time that is mutually suitable. With your permission, the interview will be recorded and transcribed, for the purpose of reporting accuracy. It may be the case that a follow-up interview is not needed. Lastly, you will be asked to submit a reflection statement based on your survey answers and interview. This survey will also be delivered electronically. The entire process will take no more than a month to complete. During this time, you may submit

information as many times as needed or have other members of your office submit

information. No participant names will be collected; only official titles and office names.

Before this process commences, publically available information about your institution

will be collected and compiled (strategic plan, mission, office and ventures, etc.). You are

also welcome to contribute to this collection of information.

This study will be conducted by the researcher, Leah MacVie, a doctoral candidate at

Union Institute & University.

Risks and Benefits

Your institution will be one of 3 institutions studied. The purpose of this multicase study

is to explore if Erich Jantsch's 5 crucial innovations can be found to some degree in

innovations in small institutions of higher education. Jantsch passed away before seeing

if his predictions were correct. Little research has been done to expand and explore Erich

Jantsch's contributions to the future of higher education. It is anticipated that the

knowledge generated from this inquiry could add to his legacy, provide insight to the

field of systems thinking, and inform research on innovation in higher education.

Participation in this study carries the same risk that individuals encounter during a usual

organizational study, including loss of time and disclosure of information. There is no

financial remuneration for your participation in this study.

Data Storage to Protect Confidentiality

Under no circumstances whatsoever will you or anyone in your office be identified by name in the course of this research study, or in any publication thereof. Every effort will be made that all information provided by your will be treated as strictly confidential. All data will be coded and securely stored, and will be used for professional purposes only. Once the final dissertation is complete (including post-defense edits), the data collected will be destroyed (permanently deleted).

How the Results Will Be Used

This research study is to be submitted in partial fulfillment of requirements for the degree of Doctor of Philosophy at Union Institution & University, Cincinnati, Ohio. The results of this study will be published as a dissertation. There is also the possibility of the materials and results being published in scholarly journals and articles. In addition, information may be used for education purposes in professional presentation and educational publications.

Participant's Rights

- I have read and discussed the research description with the researcher. I have had the opportunity to ask questions about the purposes and procedures regarding this study.

- My participation in this research is voluntary. I may refuse to participate or withdraw from participation at any time without jeopardy to future employment, student status, and other entitlements.

- The researcher may withdraw me from the research at her professional discretion.

- If, during the course of the study, significant new information that has been developed becomes available that may relate to my willingness to continue to participate, the investigator will provide this information to me.

- Any information derived from the research that personally identified me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.

- If at any time I have any questions regarding the research or my participation, I can contact the researcher, Leah MacVie (leah.macvie@email.myunion.edu), who will answer my questions.

- If at any time I have comments or concerns regarding conduct of the research, or questions about my rights as a research subject, I should contact the Institutional Review Board at Union Institute & University, Cincinnati, Ohio.

- I understand that, although my name will be collected, it will not be used in the reporting of the findings. My job title, office name and institution name will be collected and will most likely be published in the research findings.

- I should receive a copy of this Informed Consent Letter, once signed.

- Audio taping is part of this research. Only the principal research will have access to written and taped materials.

❑ By checking this box, I agree to participate in this study.

Initials (Count as signature) _____

Date: ____/____/____

Name (Please print) _____

Job title (Please print) _____

Office name (Please print) _____

Institution name (Please print) _____

Investigator's Verification of Explanation

I, Leah MacVie (researcher), certify that I have carefully explained the purpose and

nature of this research to _____ (participant's name). He/She has

had the opportunity to discuss it with me in detail. I have answered all his/her questions

and he/she provided the affirmative agreement (i.e., assent) to participate in this research.

Initials (Count as signature) _____

Date: ____ / ____ / ____

Name (Please print) _____

Appendix E.ii.

Informed Consent Letter (post-IRB amendment, signed again by those who signed

Appendix E.i)

Principal Researcher: Leah MacVie

Research Title: Crucial Institutional Innovations: Evolutionary Change in Higher

Education

You, your office and your institution are invited to participate in a research study that

explores Erich Jantsch's 5 Crucial Innovations. Your participation in this study requires

successful completion of 4 research phases: 1) qualifying survey, 2) a survey packet, 3) a possible interview, and 4) a follow-up statement. The qualifying survey will be delivered electronically and contains 10 points to verify that your institution is eligible to participate in this study. The survey packet will be delivered electronically and includes a brief introduction to the study, a short biography about Erich Jantsch, and a brief summary about the crucial innovations. The second part of the survey packet includes the survey questions. Participants will first be asked to complete a personal data sheet and then answer 25 open-ended questions. Any answers that require clarification will be compiled into interview questions. A 1.5 hour time slot may be booked for this one-on-one interview to take place in person or via Web conference at a time that is mutually suitable. With your permission, the interview will be recorded and transcribed, for the purpose of reporting accuracy. It may be the case that a follow-up interview is not needed. Lastly, you will be asked to submit a reflection statement based on your survey answers and interview. This survey will also be delivered electronically. The entire process will take no more than a month to complete. During this time, you may submit information as many times as needed or have other members of your office submit information. No participant names will be collected; only official titles and office names. Before this process commences, publically available information about your institution will be collected and compiled (strategic plan, mission, office and ventures, etc.). You are also welcome to contribute to this collection of information.

This study will be conducted by the researcher, Leah MacVie, a doctoral candidate at Union Institute & University.

Risks and Benefits

Your institution will be one of 3 institutions studied. The purpose of this multicase study is to explore if Erich Jantsch's 5 crucial innovations can be found to some degree in the innovations of small institutions of higher education. Jantsch passed away before seeing if his predictions were correct. Little research has been done to expand and explore Erich Jantsch's contributions to the future of higher education. It is anticipated that the knowledge generated from this inquiry could add to his legacy, provide insight to the field of systems thinking, and inform research on innovation in higher education. Participation in this study carries the same risk that individuals encounter during a usual organizational study, including loss of time and disclosure of information. There is no financial remuneration for your participation in this study.

Data Storage to Protect Confidentiality

Under no circumstances whatsoever will you or anyone in your office be identified by name in the course of this research study, or in any publication thereof. Every effort will be made that all information provided by your will be treated as strictly confidential. All data will be coded and securely stored, and will be used for professional purposes only. Once the final dissertation is complete (including post-defense edits), the data collected will be destroyed (permanently deleted).

How the Results Will Be Used

This research study is to be submitted in partial fulfillment of requirements for the degree of Doctor of Philosophy at Union Institution & University, Cincinnati, Ohio. The results of this study will be published as a dissertation. There is also the possibility of the materials and results being published in scholarly journals and articles.* In addition, information may be used for education purposes in professional presentation and educational publications.

Participant's Rights

- I have read and discussed the research description with the researcher. I have had the opportunity to ask questions about the purposes and procedures regarding this study.

- My participation in this research is voluntary. I may refuse to participate or withdraw from participation at any time without jeopardy to future employment, student status, and other entitlements.

- The researcher may withdraw me from the research at her professional discretion.

- If, during the course of the study, significant new information that has been developed becomes available that may relate to my willingness to continue to participate, the investigator will provide this information to me.

- Any information derived from the research that personally identified me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.

- If at any time I have any questions regarding the research or my participation, I can contact the researcher, Leah MacVie (leah.macvie@email.myunion.edu), who will answer my questions.

- If at any time I have comments or concerns regarding conduct of the research, or questions about my rights as a research subject, I should contact the Institutional Review Board at Union Institute & University, Cincinnati, Ohio.

- I understand that, although my name will be collected, it will not be used in the reporting of the findings. My job title, office name and institution name will be collected and will most likely be published in the research findings.

- I should receive a copy of this Informed Consent Letter, once signed.

- Audio taping is part of this research. Only the principal research will have access to written and taped materials.

- By checking this box, I agree to participate in this study.

Initials (Count as signature) _____

Date: ____ / ____ / ____

Name (Please print) _____

Job title (Please print) _____

Office name (Please print) _____

Institution name (Please print) _____

Investigator's Verification of Explanation

I, Leah MacVie (researcher), certify that I have carefully explained the purpose and nature of this research to _____ (participant's name). He/She has had the opportunity to discuss it with me in detail. I have answered all his/her questions and he/she provided the affirmative agreement (i.e., assent) to participate in this research.

Initials (Count as signature) _____

Date: ____/____/____

Name (Please print) _____

*9/25/16: Please note that an amendment was made to this form after your signature was received. Please sign and date again to verify that you are aware of this amendment.

Initials (Count as signature) _____

Date: ____/____/____

Appendix F

IRB approved study - Innovation in Small Institutions of Higher Education

Recruitment Letter

Dear [Mr. / Ms. LAST NAME],

I am writing to tell you about a study being conducted for my Ph.D. dissertation through

Union Institute & University. The purpose of this multicase study is to explore whether

or not Erich Jantsch's five crucial innovations can be found to some extent in the

innovations of small institutions of higher education (IHE). A better understanding of

innovations in small institutions may shed light on whether Jantsch's predictions were

well-founded. To explore the problem, the following research questions will be

addressed:

- To what extent are Erich Jantsch's five crucial innovations found in the

  innovations of four small institutions today?

- What role has leadership played in these innovations?

- In what ways do the innovations today respond to present-day disruptive forces?

- In what ways are these innovations helping institutions to evolve?

- In what ways are institutions integrating innovation in their institutional planning

  processes?

Erich Jantsch's name is not one widely recognized in history, but his impact can be found

in many fields, including sustainability, systems thinking, futures thinking, and higher

education. Jantsch's 1969 MIT report, titled "Integrative Planning for 'Joint Systems' of

Society and Technology- The Emerging Role of the University", was an early attempt to

design an integrative approach to institutional planning for societal engineering through

higher education. In his report, Jantsch proposed, or rather hoped for, five crucial innovations institutions should implement. While a majority of the research surrounding innovation in higher education focuses on the maneuvers of large universities to adapt to today's disruptions, this dissertation will focus on small institutions. It is worth examining whether Jantsch's five crucial innovations can be found in small institutions that have had to react to pressures for change over the past few decades.

The study has 4 phases. The first includes a qualifying survey to see if the institution qualifies for the study based on available data. The second phase is a survey packet for participants to complete that contains background information about Erich Jantsch, the five crucial innovations, and surveys. The third phase is an optional interview just in case I require clarification and more information based on the information submitted in the second phase. In the fourth phase, participants are asked to submit a reflection statement based on their survey answers and interview. The reflection prompt was penned by Jantsch in his 1969 report. It is predicted that this process will take a total of one month with each of the four phases requiring a week to complete. Lastly, participants will be asked to recommend other colleagues at their institution and other institutions who could also participate in this study.

I am looking for four small institutions of higher education and 3-5 offices per institution to participate. Your institution was mentioned as one that might qualify for such a study. If you are interested, you only need to reply to this email to initiate the research process.

It is important to know that this letter is not to tell you to join this study. It is your decision. Your participation is voluntary.

You do not have to respond if you are not interested in this study. If you do not respond,

no one will contact you, but you may receive another email to be sure the initial email did

not get stuck in spam, which you can simply disregard.

Thank you for your consideration.

Sincerely,

Leah MacVie