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Organizational change factors for increasing online learning within a southeastern state university system

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ACCEPTANCE

This dissertation, ORGANIZATIONAL CHANGE FACTORS FOR INCREASING ONLINE LEARNING WITHIN A SOUTHEASTERN STATE UNIVERSITY SYSTEM, by DAVID EDWIN STONE, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the College of Education, Georgia State University.

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ABSTRACT

ORGANIZATIONAL CHANGE FACTORS FOR INCREASING ONLINE LEARNING WITHIN A SOUTHEASTERN STATE UNIVERSITY SYSTEM
by
David Edwin Stone

This bounded case study describes the readiness of a Southeastern State University System to support the growth of online learning. Structured as a case study, the view provided of the Southeastern State University System in this moment in time provides a contextually rich view of the phenomenon of change within a university system. The study answers the following questions regarding the change towards online course delivery:

1. Does the Southeastern State University System have a primarily transformational or transactional orientation?
2. What are the key change facilitating factors within the Southeastern State University System?
3. What are the key change restraining factors within the Southeastern State University System?

The key change facilitating factors identified as part of the first phase of the study included: motivation to change, job/task requirements and organizational culture supportive of change. The perspectives of the administrators regarding facilitating factors differed, as did views on if the organizational culture was supportive of change. The CIO interviewed described a variation in perspectives regarding online learning based on institutional categories and missions, which was reflected in the interviews. The key change restraining factors were identified during the survey phase of the study as: change

related systems, emotional impact of change and change mission and strategy. Financial incentives, both for the institutions and the individuals involved in online or blended activities was identified in the interviews. However, the CIO interviewed outlined a perspective that the funding model for collaborative programs in the university system was flawed. A perceived lack of change mission strategy was common through the interviews, with signs pointing towards improvement within the system, with a new focus on online learning as part of an initiative to have more college graduates within the state. This study provides a snapshot of the state of a university system as it adapts to the changing environment of higher education. The study describes the application of an established organizational change and development model to the study of online learning, which provides future researchers with a framework to investigate online learning at a university system level.

ORGANIZATIONAL CHANGE FACTORS FOR INCREASING ONLINE LEARNING WITHIN A SOUTHEASTERN STATE UNIVERSITY SYSTEM

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ABBREVIATIONS

CAO	Chief Academic Officer
CRI™	Change Readiness Inventory
HPT	Human Performance Technology
IDER	Institutional Distance Education Representatives
LMSA	Learning Management System Administrators
NASULGC	National Association of State Universities and Land Grant Colleges
OD	Organizational Development

Operational Definition of Key Terms

Chief Academic Officer: The definition of Chief Academic Officer has been taken from Cejda and Rewey (2001) who describe these individuals as those who have the overall responsibility for the academic activity of their institution. The typical titles of individuals who hold this position are: Vice Chancellor, Vice Chancellor & Provost, Vice President, Vice President & Provost, Vice President & Dean, Provost, Provost & Dean or Dean.

Online learning: For the purpose of this study, the definition for online learning is the Sloan-C standard definition for online learning, as presented by Allen and Seaman in the 2006 Sloan-C report "Making the Grade: Online Education in the United States 2006:"

> Online courses, the primary focus of this report, are those in which at least 80 percent of the course content is delivered online. "Face-to-face" instruction includes those courses in which zero to 29 percent of the content is delivered online; this category includes both traditional and Web facilitated courses. The remaining alternative, blended (sometimes called hybrid) instruction is defined as having between 30 percent and 80 percent of the course content delivered online. (p. 4)

Organizational Inertia: "the resistance of an organization to make transitions and its inability to quickly and effectively react to change" (Kinnear and Roodt 1998, p. 44).

CHAPTER 1

THE PROBLEM

The environment in which higher education institutions operate is undergoing a change. In fall 2010, thirty-one percent of all U.S. higher education students took at least one online course and the ten percent growth rate for online enrollments exceeds the overall higher education population growth (Allen & Seaman, 2011). This growth in distance education has created challenges for administrators at universities. Some of the challenges facing administrators who are implementing online program delivery include issues such as intellectual property policies, organizational culture, quality of programs, customer service to learners, technical support, pedagogical support, training, resource assessment, organizational structure and technology integration issues (Albrecht & Bardsley, 1994; Brokoske, 2000; Laird, 2004; Freitas, 2005; Zawacki-Richter, 2005). These challenges are components of the larger issue confronting higher education administrators, who are charged with leading universities in an increasingly competitive, global environment. At a more fundamental level, there are additional pressures from the environment that are forcing change within institutions. According to a 1994 essay by the Pew Education Roundtable, published in *Policy Perspectives*, three forces confront institutions: "a rising anxiety about jobs and careers among Americans of all ages, the emergence of a technology that promises to create both new forms and new suppliers of postsecondary education, and a seemingly irresistible impulse on the part of policy makers and public agencies to rely on markets and market-like mechanisms to define the public good" (p. 1a). The changing landscape of higher education provides traditional universities an external impetus to change, as new higher education providers have begun

to reach segments of the population that have historically been served by traditional institutions. For-profit institutions have also positioned themselves as quality leaders (Newman & Couturier, 2001). In 2011, 65.5% of higher education Chief Academic Officers (CAO) (presidents and chancellors) noted that online education was critical to the long-term strategy of their institution (Allen & Seaman, 2011). Additionally, there is an increase in the number of administrators who recognize that competition for online students is increasing (Allen & Seaman, 2008).

Despite this recognition of importance, little research has been done in the area of distance education leadership at a university level. There have been many studies comparing the effectiveness of distance education courses to traditional courses, research into practitioner issues at the course level, and the issues faced by department chairs supporting the growth of online learning in their department (Schauer, Rockwell, Fritz, & Marx, 2005). Department chairs are the first-line implementers of change, but they must work with their college and central administration to support their department's needs (Shauer, Rockwell, Fritz, & Marx, 2005). Universities may also have independent support or administrative units that are provided with distance education responsibilities. Within the community college system, 68% of distance education administrators reported directly to a vice president for academic affairs or an academic dean (Lokken, 2009). This reporting structure highlights the role that the CAO performs with respect to distance education. While this study does not include community college CAOs, this population is a significant component of online learning in higher education. Perhaps because of their historical role as access institutions, associate degree granting institutions had both the highest growth rates and over one-half of the online student population

during the early 2000s (Allen & Seaman, 2004). Administrators at institutions that were classified as Associate or Associate Dominant Colleges identified the following eight challenges as the greatest challenges for distance education in 2008: 1) support staff needed for training and technical assistance; 2) Adequate student services for distance education students; 3) operating and equipment budgets; 4) adequate administrative authority; 5) faculty acceptance; 6) adequate training and technical assistance; 7) organizational acceptance; and 8) student acceptance (Lokken, 2009). The 2007 National Association of State Universities and Land Grant Colleges' survey of presidents and chancellors identified the following as the most important barriers to distance education: online courses cost more to develop than face-to-face courses; greater faculty time and effort is required to teach online; students need more discipline to succeed in online courses; a lack of acceptance of online instruction by faculty; and online courses cost more to deliver than face-to-face courses. While there is a demonstrated interest on the part of adult and non-traditional learners for distance education, only 4.6 percent of CAOs in 2006 agreed that there were no significant barriers to widespread adoption of online learning. Some of the barriers that were identified in the 2006 Sloan Consortium survey include faculty acceptance of online education and the perception of increased time and effort required to teach online.

University administrators have sought to find academic support solutions to meet the pressure put upon them by the transition from supporting traditional degree programs to the support of distance education programs (McCracken, 2005). The growth in online degree programs has created new challenges for the administration and faculty at higher education institutions. As with any major change effort, the development and support of

online degree programs can be difficult. Innovative faculty who tend to be early adopters of technology need support to encourage their exploration of new technology. The localized application of technology by faculty to support student learning at a distance in turn needs support and encouragement from the faculty member's institution. The use of technology should not be limited to only distance learning students, but rather should be integrated in order to facilitate high touch and high tech interactions with students both locally and at a distance (McCracken, 2005). The importance of high-level support for organizational change projects has been part of organizational change theory in a wide range of fields, including organizational change and development, and business process reengineering.

In the context of higher education the CAO has considerable influence on the activities of higher education institutions. The individual in this position may hold many different titles, including Dean, Provost, Vice President, Vice Chancellor, or other title. While the title held may vary, the individual is primarily responsible for the academic aspects of their institution (Martin & Samles, 1997). According to Birnbaum (1992), the Chief Academic Officer has as great or greater impact on higher education institutions than the University President. The changing environment has lead to an increased role of the Chief Academic Officer as a champion of new technologies. This includes an active role with technology, including distance education (Martin & Samels, 1997). Within the context of this university system, the Chief Academic Officer is responsible for appointing a representative for the university system committee on distance education.

There have been few studies that focus on the role of leadership in the area of online learning. Schauer, Rockwell, Fritz, and Marx call for research to "(a) pinpoint

motivational factors at the different levels in the pyramid of distance education issues, (b) further delineate the various concerns addressed at each level and (c) elaborate on how leadership responsibilities at each level support or hinder the development of a new educational paradigm (2005)." Therefore, a study that describes institutional readiness and identifies the barriers to large-scale planned change within institutions would provide insight into how change strategies could be targeted in higher education settings. The problems of change are not unique to higher education, and they have been studied extensively in the business world. There have been many studies which have dealt with categorizing and defining the phenomenon of change within organizations. These studies have provided a framework by which to describe the transition to the online environment in higher education. The availability of a prior research base, along with the availability of a wide range of instruments and models provide the resources necessary to undertake a case study in this area.

Purpose of the study

This study describes the readiness of a Southeastern State University System to support the growth of online learning. Structured as a case study, the view provided of the Southeastern State University System in this moment in time provides a contextually rich view of the phenomenon of change within a university system. This three phase study consisted of a first phase where data was collected via surveys, a second phase where follow-up interviews were conducted with survey respondents, and a third phase where interviews were conducted with a Chief Academic Officer, Chief Information Officer, and a Teaching and Learning Director. Opinions and perceptions of these administrators can guide the growth and direction of new programs and modifications of

existing programs. Data gained from gathering perspectives from these administrators will inform researchers who seek to study the development of distance learning programs within institutions. Despite the low response rate, the survey allowed for the development of a categorized list of factors that fit within the change readiness model. This first quantitative phase made use of a proprietary instrument called the Change Readiness Inventory. This instrument was administered to the Institutional Distance Education Representatives (IDER) group, as well as the Learning Management System Administrators (LMSA) group within the Southeastern State University System. The instrument was designed to measure the change readiness of an organization via the administration of the survey to organization members. The instrument provided data regarding the university system overall, as well as data regarding the two groups which were surveyed. A second phase of structured interviews was conducted after low participation in the initial quantitative phase. These structured interviews provided further data regarding the sub-dimensions of the change readiness instrument. The reason for the exploratory follow-up was to help elaborate on the initial quantitative results, as well as provide additional data regarding the sub-categories of the CRI™ model. The initial two phase approach provided the background needed to inform the third, qualitative data collection which took the form of interviews with administrators within the Southeastern State University System. The collection of data regarding change facilitating and restricting factors are useful to support change in higher education and the perspectives capture regarding this change adds to the value of the study. The quantitative survey data collection was conducted using a proprietary instrument that is based on the Burke-Litwin model of organizational performance and change. This instrument identifies

inhibiting or facilitating factors as either transformational or transactional and also provides a breakdown of individual dimensions within the transactional or transformational categories (Roodt and Kinnear, 2007). The dimensions identified by this instrument are based on the Burke-Litwin model of organizational performance and change. This instrument was designed to measure differences at a group or an organizational level (Roodt and Kinnear, 2007). The transformational dimensions within the Burke-Litwin model are: external environment, mission and strategy, leadership, organizational culture, and individual and organizational performance. The transactional categories are: management practices, structure, systems, work group climate, skills/job match, motivation, and individual needs and values (Burke, 1994).

Research questions

The study answers the following questions regarding the change towards online course delivery:

1. Does the Southeastern State University System have a primarily transformational or transactional orientation?
2. What are the key change facilitating factors within the Southeastern State University System?
3. What are the key change restraining factors within the Southeastern State University System?

Situational Setting For Study

The context for this study is a single University System within the Southeastern United States. The population that has been approached for insight into the current situation within the Southeastern State University System is comprised of administrative

and the primary course management system technical contacts within the system. The Southeastern State University System (SSUS) has a stated goal to increase enrollment capacity with the identification of online learning as a one method to reach this goal. The institutions of the SSUS each share a common governing board and the institutions are bound to the same State laws and governance. The representative group was purposefully selected as this population is traditionally difficult to access for studies, and the researcher has access to this particular population. Selecting administrators within a single context provides a consistent environment in which to compare factors that emerge from data collection. The administrators selected are closely involved with online course development at their institutions. These administrators have responsibilities related to the development and support of distance and online courses or programs, either directly or indirectly. Various components of the administrative and technical requirements for online course delivery are visible to these individuals. These individuals have an important role in an institution's online and distance education efforts. The institutions within the University System share a common board that sets system wide policy, and the University System Board has established a goal of increasing capacity for students, regardless of their geographic location within the state. One of the methods for increasing this capacity, without increasing physical facilities includes online education. In 2007-2008, there was a stated goal to: "Increase access to University System programs through distance learning." There are initiatives for coordinating and facilitating online collaborative programs, and the development of franchise programs, but these efforts require substantial coordination at each public institution level. While each institution is part of the University System, each institution has an independent annual budget, and

operates the majority of the services and resources required for the operation of the institutional business. There is a President and a Chief Academic Officer (CAO) at each institution. The University System has an administrative committee on Academic Affairs that is comprised of the CAO of each institution. Each Chief Academic Officer may appoint a primary contact for distance education at each institution. These contacts form an advisory committee on distance education for the university system as a whole. Another group of primary technical contacts for the centralized course management system also meets regularly to discuss technical aspects of supporting online learning activities associated with the course management system.

Researcher Background and Role

I have been a full-time employee at an institution within the Southeastern State University System since 2001, and one of my roles has been to support technology integration into instruction since the beginning of my employment at the institution. As an employee of the institution, and of the university system, I am aware of university system activities and goals, and I have a perspective of how online learning, as is any change, is resisted at an institutional level. By comparing the perspectives of online learning readiness between the IDER and LMSA groups as well as the perspectives of senior level administrators within the university system, I was able to capture data from multiple perspectives to help describe the current state of the Southeastern State University System. The use of the survey instrument and interview methodology allowed me to study the university system as a whole and my understanding of the organizational factors at an institutional level helped inform my view of the system level. I have held both an administrative as well as technical role in regards to technology integration in

instruction within the university system. This experience has helped inform my role as researcher and has provided additional access to the case study that otherwise may not have been feasible without this role. In my previous role within my institution, I was the supervisor of the institution's primary technical contact for the university system course management system. My knowledge of these two components of the university system's operational structure provides me with a unique perspective and access that adds value to this study. My experience in the university system provides a perspective and potential bias with respect to online learning based on my prior experiences and care has been taken to ensure that the authentic voices of participants are heard and described in this study.

Theoretical Framework

The study draws primarily on three major theoretical frameworks to describe organizational change within an organization as it integrates a new technology. The three primary literature areas are: systems theory, organizational development, and human performance technology. For this study, systems theory provides a conceptual framework by which to describe the complex interactions within a higher education institution. While there are many individual reasons and factors for adopting a particular technology or university initiative, this study focuses on high level actions and changes within organizations. Discussing the nature of these complex interactions across multiple institutions and within diverse contexts can be best captured via multiple data sources and methods in order to build a view of the Southeastern State University System at this particular moment in context.

The literature on organizational development includes survey research as one of

the earliest forms of organizational diagnosis and group dynamics. This work conducted by Kurt Lewin led to the foundation of the Research Center for Group Dynamics at MIT in 1946 (Burke, 1992). The literature of organizational development provides concepts and terminology that can be used to help frame the transition of the state of a system to a new state. French and Bell (1999) credit the foundation of the field of organizational development as a method to help leaders with change. Furthermore, both internal and external forces drive the demands for such a change. Examples of internal forces include: "obsolescence of products and services, new market opportunities, new strategic directions, an increasingly diverse workforce, and the like" (p. 2). Examples of external forces include: "regulators, competitors, market forces, customers, technology, and the larger society" (p. 2).

The third framework for this study is comprised of literature in the area of Human Performance Technology. Human Performance Technology (HPT) has had many definitions over the years, but according to the 2007 International Society for Performance Improvement definition, HPT is: "… a systematic approach to improving productivity and competence, uses a set of methods and procedures -- and a strategy for solving problems -- for realizing opportunities related to the performance of people "("What is HPT?", 2007). According to the 2002 ISPI Performance Standards, the principle attributes of HPT are: "focus on outcomes, take a systems view, add value, work in partnership, needs analysis, cause analysis, design, development, implementation, and evaluation" (p. 3). The second attribute, "Take a Systems View," outlines the need to consider an organization in a systems context, and not simply focus on a process approach (p. 3). The methodology of Human Performance Technology, and

the process by which a HPT professional analyzes an organization provides another set of analytical tools to approach the problem of adapting an organization to a changing environment.

In summary, systems theory provides the tools to describe the nature of both an organization and its' interconnectedness to a broader context and environment, organizational development provides a framework to describe a transition of an organization from one state to a new state, and human performance technology provides a process by which to adapt an organization to a changing environment. The three literature bases: systems theory, organizational development, and human performance technology provide a framework by which to examine the readiness of a Southeastern University System to support the growth of online learning.

Significance of the Study

This study is significant as data regarding facilitating and restraining factors for online course delivery may be used to identify strategies to support changes in higher education. The findings in this study assist future researchers and practitioners to facilitate supportive changes to institutions in the future.

The Association for Educational Communications and Technology's Definition and Terminology Committee has defined Instructional Technology as: "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning" (Seels & Richey, 1994, p. 1). The domain of management in the context of Instructional Technology refers to processes for controlling instructional technology (Seels & Richey, 1994). This research study fits within the field of instructional technology as an investigation into the changes of higher education

institutions made in order to meet a change in environment brought about by disruptive instructional technology. This study describes the perceived readiness of a university system to adapt to a change towards additional online courses. Literature from a wide range of disciplines has guided this study: organizational development, performance improvement, business process reengineering, organizational learning, as well as information systems. Identification of the strategies employed for the transition to support technology-mediated instruction assists future researchers and practitioners to determine the methods by which to facilitate change in the future.

Assumptions and Limitations

The two groups that participated in the survey and the structured interview phases of the study were the primary distance education representative from each university, as well as the primary administrator for the university system's course management system. Each institution within the SSUS has a primary distance education representative that has been appointed by the Chief Academic Officer. This individual serves on the Institutional Distance Education Representative (IDER) committee and is provided regular updates and is a member of a list-serv that provide communication regarding the university system's efforts in the area of distance education. Additionally, the Learning Management System Administrator (LMSA) group has an individual selected by the Chief Information Officer to be the primary contact for the learning management system administration for their institution. This individual is invited to weekly meetings regarding the learning management system within the system and is also on a mailing list for topics related to the administration of the learning management system within the university system. The selection of individuals from these two groups may not be

inclusive of all of the administrators involved in the online course implementation efforts, so there are perspectives that may be omitted. The addition of a third phase of qualitative interviews with administrators within the university system provides another source of data that provides additional context and perspective regarding the readiness of the university system. Since there is a wide geographic distribution of the subjects in the study an online survey was selected as the method to collect the initial quantitative data. One assumption of the researcher was that this population would be more willing to use online survey technology than other populations. One limitation of this approach was that administrators are often asked to complete multiple surveys, which could impact survey completion rates. Another limitation was that if administrators are adverse to technology use, they may not want to complete the survey. This aversion would have limited their representation in the study. Investigating the readiness of an organization in which the respondents are providing a view of the state of the system in which they are administrators with university system visibility creates risk for those participants. In order to protect the participants there were additional measures taken to disconnect the quantitative and structured interview data as well as the use of less invasive data collection methods employed. For example, interview notes were used rather than audio recordings of the interviews for members of the IDER and LMSA groups. Matching survey data to interview data would have provided a subject-by-subject point of comparison between the data collection methods, so the IDER and LMSA data collection phases were kept separate and there were no references between the initial survey and the structured interviews. Creating a safe environment for the study participants was critical, and these steps were an important part of this goal. The third phase of the study included

interviews of senior administrators within institutions. These administrators may not be a representative of all of the perspectives within the university system, but their perspective is valuable as part of establishing an overall view of the system at this moment in time.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

Analysis of the structure of higher education institutions and the description of the current state of universities requires the use of tools and a framework for inquiry. At a basic level, this study is framed from a constructivist perspective. Creswell (2003) describes the goal of socially constructed knowledge claims as to "rely as much as possible on the participants' views of the situation being studied (p. 8)". This study was designed to describe the state of a university system in the state of transition. The constructivist approach fits with prior research in the area of organizational change and development. Before beginning to discuss the methodology employed in this study, it is necessary to outline some of the concepts and frameworks that were used to build the design of this study. The major areas of this literature review include systems theory, organizational development (including prior application of the concepts to higher education), organizational learning, business process re-engineering, human performance technology, as well as specific models used in the development of the instruments used in this study. The Burke-Litwin Model of Organizational Performance and Change is the primary model that influenced the design of the study, and was the foundation on which the Change Readiness Inventory™ instrument used in this study was built. The complexity and interconnectedness of organizational components to both internal and external influences requires a framework to describe how such systems function. Literature in systems theory provides this background, and provides a background for later discussions of organizational inertia. Organizational development as a field

introduces the concepts of planned change, and the directionality of large-scale change projects, as well as a discussion of basic interventions in organizations. Business process reengineering provides a background on how processes and systems within an organization can be efficiently organized and optimized for organizational alignment. The Burke-Litwin model is presented as a guide for organizational development professionals to review the dimensions that comprise an organization as they move forward with a planned change. In this study the planned change is the increase in online learning at universities in a single university system. To inform this investigation, there is a discussion of prior online learning initiatives in higher education. Finally, there is a discussion of the Change Readiness Inventory (CRI™) and prior studies conducted with this instrument. This review of the literature provides a basic introduction to the concepts that underpin the study design, and reflect the constructivist perspective nature of the study.

Systems Theory

The complexity of organizations makes it difficult to describe the nature of an organization without some level of abstraction. Observations of individual behaviors and activities in aggregate are difficult to achieve without the use of a formal methodology. In order begin discussion of how these complex interactions of behaviors can be described and analyzed, it is necessary to consider the concept of systems theory. Lazlo & Lazlo (1997) define a system as "a group of interacting components that conserves some identifiable set of relations with the sum of the components plus their relations (i.e., the system itself) conserving some identifiable set of relations to other entities (including other systems)" (p. 8). The conceptual view of human organizations as systems is built

upon the work of Bertalanffy (1950), who noted that systems appear across social and physical sciences. Other observations regarding systems include the recognition of the impact of organizational structures on organizational behavior, the general tendency of system inertia to resist change, and the need for focused efforts to create change. According to Bertanalffy (1950), systems can either be open or closed. Closed systems do not interact with a broader environment, whereas the external environment influences open systems, and the open system influences the environment. Birnbaum (1988) describes higher education institutions as "open and dynamic systems composed of patterns and interacting elements and subsystems loosely or tightly coupled to each other and their environments" (p. 47). Therefore, higher education institutions are influenced by both external and internal factors. The availability of technology for instructional integration is one of these factors. The general assumption of higher education institutions in the United States is that faculty are part of the governance process of the institution and that they have academic freedom in their endeavors as faculty (Rudolf, 1962). Higher education institutions are comprised of sub-organization and sub-groups of individuals working in teams. Some of the organizational structures that can be found in higher education institutions include academic departments, administrative departments, or service departments. Each group may have their own set of agendas or goals for their particular sub-group. The interaction between groups and the institution as a whole is facilitated by the institutional administration.

Leavitt's Model

The Leavitt's Model is a commonly cited model in the information systems and organizational development fields that describes the relationship between subsystems

within an organization and the interconnectedness of the components. This model has been used in the information system implementation literature to illustrate the interconnectedness between four major subsystems within organizations. This model illustrates the interdependent nature of four critical components of an organization: structure, people, technology, and tasks. A change in an organization's technology interacts with each of the other components (Sarker 2000; Keen 1981) (See Figure 1). Leavitt describes the four interacting variables that can be used to categorize change approaches as follows:

Task: "the production of goods and services, including the large numbers of different but operationally meaningful subtasks that may exist in complex organizations."

People (Actors): "Actors refers chiefly to people, but with the qualification that acts executed by people at some time or place need not remain exclusively in the human domain."

Technology: "… refers to direct problem solving interventions like work-measurement techniques or computers or drill presses"

Structure: "means systems of communication, systems of authority (or other roles), and systems of work flow."

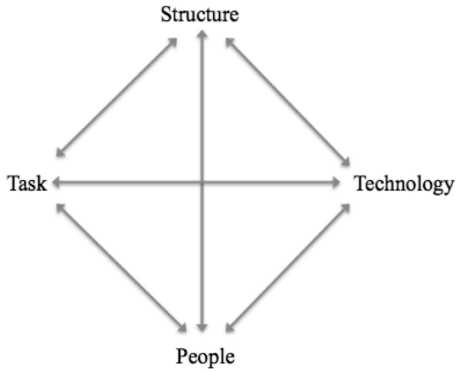

Figure 1 Leavitt's Diamond (1965, p. 1145)

A change in the technology in the system impacts the tasks, structure and people of an organization. This structure has been used to describe the complexity of implementing information systems within an organization. Whereas organizations often seek to limit the variation in organizational behavior in order to maximize effectiveness and efficiency, or maintain control, innovation "may consist of imposing or altering a control; or it may consist in giving up a control so that resources and the resulting flexibility can be utilized elsewhere" (Haberstroh, 1961, p. 1172). However, complex social systems tend to resist disruption to systems, and this resistance often dampens innovation. Implementation of a system within an organization requires that the change be led by strong leadership and requires that "one must clarify objectives, respond to resistance, adjust other components of the Leavitt Diamond (Task, Technology, People, Structure) and block off counterimplementation" (Keen 1981, p. 31).

For the purpose of this study, the change to the system of higher education is online education. This is a change construct that is more complex than a simple technology implementation. However, this investigation does not explore change at the individual adopter level, rather the focus is at change at the university system level. This

study considers the entire higher education system in the United States as the environment in which institutions operate. In order to ensure some commonality between the institutions, a single "university system" in the Southeastern United States has been selected. This university system has a common central board that governs system wide policy. The central board has identified a system wide goal to increase capacity for enrollment, and specifically increase access to programs regardless of the geographic location of the students (Biesinger & Finnegan, 2009).

A study framed from a systems view of higher education, and the higher education environment requires that generalizations be made about behavior of individual components within the system. Furthermore, the actions of individuals are assumed to be guided by the influence of the environment in which they operate. The acknowledgement that the environment influences and shapes the behavior of individuals can be found in a wide range of psychology theories and different philosophies of the self, and behavior. While this study is not designed to explore the degree to which the environment shapes individual behavior of actors within a system, it is assumed by the research that this does occur.

Organizational Development

Describing the nature of an organization as a system of interacting components, and the forces that shape the system is useful, but does not address the direction nature of the change that is necessary for a change in state of an organization and sub-units. Organizational development is a field that supports planned change in organizations. The methodology employed by organizational development professionals, and the prior research into the change of individual and group behaviors within an organizational

context provides both terminology and a framework by which to investigate the nature of organizations. According to French and Bell (1999), the four major "stems" of organizational development are:

- Innovations in applying laboratory-training insights to complex organizations
- Survey research and feedback methodology
- Action Research
- Tavistock Sociotechnical and socioclinical approaches

French and Bell describe organizational development as a mode of working with organizations that has a "developmental, system wide, dynamic thrust" (French & Bell, 1999, p. 41). One of the most influential theorists in the field of organizational change and development is Kurt Lewin, who identified change as a three-step process: unfreezing, movement, and refreezing. (Burke, 1994; French & Bell, 1999). Another significant contribution to the field of organizational development by Lewin is the intervention technique called force field analysis. Force field analysis is used to study the social forces within an organization and their equilibrium. The concept behind force field analysis is that by manipulating the forces on either side of the equilibrium, you can move the organization to the desired state (French & Bell, 1999). This equilibrium is based on the observation that "human behavior was based on 'quasi-stationary equilibria' supported by a large force field of driving an restraining forces. For changes to occur, this force field had to be altered under complex psychological conditions because, as was often noted, just adding a driving force toward change often produced an immediate counterforce to maintain the equilibrium" (Schein, 1996, p. 28). This tendency of systems to seek equilibrium poses challenges for change agents, and an understanding of how a

system interacts with both internal and external pressures. When describing the role of the environment on individual behavior, Lewin used the following formulas to describe the relationship between mental events, the environment and individuals:

> **Behavior:**
>
> B=f(S) – Behavior is a function of the situation
>
> B= f(PE) – Behavior depends on the state of a person (P)
>
> and the environment(E).
>
> (Lewin 1936, p. 12)

According to Lewin, "Every scientific psychology must take into account whole situations, i.e., the state of both person and environment" (1936, p. 12) There are parallels between this perspective on behavior and the environment and the later works of Thomas Gilbert, who was influential in the field of human performance technology. Gilbert frames the value of performance based on the context of the performance. Lewin was also influential in the development of organizational development and founded the Research Center for Group Dynamics at MIT (French & Bell, 1999). Lewin's work has been foundational for many other researchers who have explored the role that the environment influences an individual's behavior. Vygotsky, an influential developmental psychologist, cites Lewin's experiments with children as proof that the situational context in which children operates constrains their activity (Vygotsky, 1978) Albert Bandura also describes three components that shape an individual's personality: the environment, behavior, and an individual's psychological processes (Bandura, 1977). Situated cognition also cites the central role that activity, context and culture play in knowledge (Brown, Collins, & Duguid, 1989).

Defining Organizational Development

Burke (1992) defines organizational development as "a process of fundamental change in an organization's culture." For the purpose of this study, the organizations under review are higher education intuitions, and the desired state that the institutions seek to reach is one that supports online education. The acknowledgement that technology and markets have influencing higher education is reflected in a description of OD from early as 1966:

> Organization development is a response to change, a complex educational strategy intended to change the beliefs, attitudes, values, and structure of organizations so that they can better adapt to new technologies, markets, and challenges, and the dizzying rate of change itself.
>
> (Bennis, 1966, p. 2)

The need for an organizational change can come from both internal and external sources (French & Bell, 1999). According to French and Bell "A primary goal of OD programs is to optimize the system by ensuring that system elements are harmonious and congruent. When organization structures, strategy, culture, and processes are not aligned, performance suffers" (1999, p5). As mentioned previously, higher education institutions are "open and dynamic systems composed of patterns and interacting elements and subsystems loosely or tightly coupled to each other and their environments" (Birnbaum, 1988, p. 47). French and Bell (1999) also describe organizations as open systems, with changes in the environment requiring a change within the organization. Bazigos and Burke (1997) identify several theoretical underpinnings of the organizational development practitioners:

- Need theory – Maslow and Herzberg
- Positive reinforcement – Skinner
- Group and a psychological field of forces serve as change levers – Lewin
- Changing values through the Group – Argyris
- The group unconscious – Bion
- Participative management – Likert
- Contingency theory – Lawrence & Lorsch
- Organization as family – Levinson

(p. 386-389)

Bazigos and Burke (1997) also identify a grouping of these theories by the Level of Intervention:

- Individual level - Herzberg/Maslow and Skinner
- Group level - Argyris, Lewin, and Bion
- System wide implications - Lawrence and Lorsch, Likert, and Levinson

In the case of this study, the focus is on system wide implementation of an innovation, and the organizational inertia within the system's higher education units. In order to tie the concepts of organizational development to the particular context under study, a discussion of how organizational development applies to the higher educational context will be discussed.

Organizational Development in Higher Education

As part of a discussion on the applicability of organizational development concepts to higher education, Boyer and Crocket (1973) point out that unlike industrial

contexts, universities "… have more diverse goal structures, a much more pluralistic set of sub-systems, difficulty in measuring the quality of their products, and are greatly influenced by, and in most cases, highly dependent upon their external environment (e.g., state legislatures, federal agencies, foundations, parents, alumni, community groups) for their survival" (p. 343). Internal factors such as structural and management are also important considerations for change efforts within higher education. As Bolton and Boyer (1973) point out "Universities and colleges are under increasing pressure to reexamine the ways in which they are structured and governed" (p. 352).

Traditional public universities may vary in many ways, but there are some basic characteristics that are common across universities. The characteristics of traditional public universities as outlined by Hanna (1998) include:

1. A residential student body
2. A recognized geographic service area from which the majority of students are drawn. This service area can be a local community, a region, a state, and in the case of a few institutions, a nation
3. Full-time faculty members who organize curricula and degrees, teach in face to face settings, engage in scholarship, often conduct public service, and share in institutional governance
4. A central library and physical plant
5. Non-profit financial status
6. Evaluation strategies of organizational effectiveness

> based upon measurement of inputs to instruction, such as funding, library holdings, facilities, faculty/student ratios, faculty qualifications, and student qualifications. (p. 68)

Hanna also identified seven emerging models for higher education: "Extended traditional universities, for-profit adult-centered universities, distance education/technology-based universities, corporate universities, university/industry strategic alliances, degree/certification competency-based universities, and global multinational universities." (Hanna 1998, p. 68) The structures of each institution may vary based on individual institutional needs, but the concepts of organizational development are generic enough to describe what is occurring within institutions at a high level. Institutions have adapted to online learning in a variety of ways, and for many different reasons. Online degree programs are growing in both acceptance and popularity in the United States, and a mix of public, private, and proprietary universities have developed online programs that provide higher education to this growing audience. One of the primary reasons that institutions have begun offering distance education programs is in order to increase student access to degree programs. Institutions that identify degree completion as an important priority also are engaged in higher levels of distance education than those who do not (Allen & Seaman, 2004). Whatever the motivating factors for change towards online learning at institutions, it is necessary to identify models to help break down these complex changes into observable measures. de Fretas and Oliver (2005) have used five organizational change models to examine e-learning at a single higher education institution. The five models used included: Fordist, evolutionary, ecological, community

of practice, and discourse-oriented models. Based on this analysis at a single higher education institution, de Fretas and Oliver developed the following hypothetical considerations regarding e-learning policy and implementation:

- Whether a top-down, bottom-up approach or a combined approach would yield better results for implementing an e-learning strategy.
- Consideration of the scale and extent of e-learning already being undertaken within the organization
- Consideration of the amount of investment needed to achieve desired results of implementing an e-learning strategy, including a costing of additional technical and pedagogical support, additional training, extra staffing costs and extra hardware/software costs.
- Compare how other similar organizations have undertaken e-learning strategy implementation and with what results and pitfalls.
- Conduct a consultation with experts, staff and learners within the organization to establish objectives and needs of user groups.
- Consider how partnerships and collaboration both within and outside the institution could provide cost savings and better resource access.
- Consider how the e-learning strategy would affect change in the organization according to two or more models listed above and correct the strategy accordingly.

(de Freitas & Oliver, 2005, p. 94)

In addition to the resource and technical factors outlined by de Freitas and Oliver, the role of human factors on the success with online learning has been identified as a critical

component for successful implementation of online learning. In one, multi-site study, human factors were described as crucial when interviews and focus groups were conducted with senior officials, key administrators and key faculty at five universities in Pennsylvania. Rather then technical factors, they attributed success to human factors such as: interpersonal dynamics, attitudes, organizational culture, styles of management, and styles of communication. (Broskoske & Harvey, 2000) In relation to the organizational culture, work climate, and technical resources, Goolink (2006) outlined several areas that contributed to faculty resistance to online learning initiatives:

- Deficiencies in equipment and facilities to tackle new approaches
- Current poor technical and administrative support
- Lack of perceived time
- Pressure of new research activities
- Feelings that it might lower the quality of courses
- A less than positive attitude of peers
- A lack of official recognition for work with new technologies
- Intellectual property rights and ownership of materials produced
- A general resistance to management imposed approaches
- A scarcity of appropriate continuing professional development.

(Goolink, 2006, p. 10)

Goolink (2006) identifies continuing professional development activities as one way to help overcome faculty resistance to online learning initiatives within institutions. Baltz (1976) identified four key guidelines for institutions instituting structural changes: "1) Clear lines of authority from top to bottom; 2) Subordinates must have sufficient

authority to take on assigned duties; 3) Responsibility and authority should be outlined in writing; and 4) Conscious coordination of managerial effort" (p. 132).

Recent Studies of Online Learning Initiatives in Higher Education

Two recent studies, by O'Mera in 2008, and Sloan in 2009, both focused on the preparation of higher education institutions for online program delivery. While the studies focus on organizational factors for change to support online learning, neither focus on the organizational readiness to support online learning. O'Mera's study focuses on the discourse between faculty and administrators as they discussed a strategic change. In the 2009 study by Sloan, the focus was on the leadership style of vice presidents and presidents within a university system.

The study by O'Meara in 2008 focused on the sense-making process for institutions that were currently or had recently began to offer online degree programs. In this study, the researcher investigated the communication patters and sense-making strategies that faculty and administrators use while discussing the strategic change on their campuses. The three research goals in this study included "What do faculty and administrators say about offering online programs? How is each group's discourse influenced by their academic culture? Given what each group believes and what they say about the technology change, how do they behave as a result?" (O'Meara, 2008). This study was approached using an organizational behavior, strategic change and faculty rewards, motivation, and behavior conceptual framework. The study focused on the language used by the faculty and administration within meetings and other points of interaction. A finding that supports this research study is the perception of administrative support for online programs as a motivational force for them in their role as faculty

members. While this study did uncover some findings that relate directly to this research study, the focus was on the dialog between the faculty and administration across different types of campuses.

In 2009 Roberta Sloan conducted a study in the area of organizational change to support online learning within higher. Sloan's dissertation, "A quantitative study of the relationship between transformational and transactional leadership styles and strategic change within the State University of New York" (2009), focused on the impact that leadership styles of presidents and vice presidents within a university system. The styles of leadership were measured via the use of a Multifactor Leadership Questionnaire (form 5x) and compared against the number of new degree and certificate programs that were offered by the institutions. The findings were that there was no significant difference between the display of leadership style and the level of organizational change.

Organizational Development Interventions

After the current state of an organization is determined and the proposed changes are identified, the first step according to Lewin's three-step procedure for change is unfreezing the current behavior in the system. Step two is referred to as "movement", or some sort of intervention activity (Burke, 1994). There are many categories of intervention activities that may be used in change projects: diagnostic, team-building, intergroup, survey feedback, education and training, structural, process consultation, grid organizational development, third-party peacemaking, coaching and counseling, life and career planning, planning and goal setting, strategic management, and organizational transformational (French & Bell, 1999).

One of the major categories of organizational development interventions is the

group classified by French and Bell (1999) as structural interventions. Structural interventions are typically designed to change the task, structural, technological and goal processes of the organization. Some examples of structural interventions include: Sociotechnical systems, self-managed teams, work redesign, management by objectives, quality circles, quality of work life projects, parallel learning structures, physical settings, and total quality management (French & Bell, 1999). In the environment of a higher education institution, institutions typically follow the administrative model of strategy, where there is a great deal of bureaucracy that is process oriented (Edelson, 2002). Sociotechnical systems focus on the integration of social and the technical systems (French & Bell, 1999).

Parallel learning systems are another form of structural interventions that will be discussed as part of this research study. This intervention involves the creation of secondary structure within the main organization to deal with ill-defined problems. This structure may simply be a steering committee and working groups to enact change and review the impact of these changes (French & Bell 1999; Bushe and Shani 1991). Ferren (2004) notes "campus presidents use strategic planning as a framework for their leadership and often initiate a widespread institutional change process as the first step in their tenure" (p. 23). Regardless of the change strategy employed by an organization, planning for change and the organization's resistance is critical. Without proper planning and support, change efforts may fail. Based on experience with more than a hundred companies attempting to change their organizations to enhance competitiveness, Kotter (1995) outlined eight common errors that companies make:

1: Not establishing a great enough sense of urgency.

2: Not creating a powerful enough guiding coalition

3: Lacking a vision

4: Under communicating the vision by a factor of ten

5: Not removing obstacles to the new vision

6: Not systematically planning for and creating short-term wins

7: Declaring victory too soon

8: No anchoring changes in the corporations' culture

(p. 59)

The performance of an organization, as a whole, and the interventions used to enact change within the organization provides a high level perspective of change within an organization. However, change occurs at the individual level, with individual factors that influence a change in behavior. While this study does not focus on individual changes and experiences, it is useful to describe how organizational development concepts apply at the individual, rather than the organizational level.

Linking Individual Performance to Organizational Development

One of the issues related to change in higher education is the connection of individual performance in an academic role and linking this activity to the broader institutional directions. The demands of a "complex and changing external world" have resulted in attempts to meet the external expectations. A "renegotiation of the balance between institutional objectives and individual academic freedom, and a reconceptualization of what comprises academic work" (Coaldrake & Stedman 1999, p. 30). Coaldrake & Stedman also summarized the management literature on the shift to a focus on innovation and knowledge with some key points from prior studies. These examples include:

- Workers will have weaker attachments to the company and stronger attachments to their own profession and project team (Kanter 1996, p. 141);
- There will be less attention paid to the category in which an individual works than to the competencies he or she possesses (Ulrich 1996, p. 193);
- Management activity will shift from commanding and controlling to focusing and coordinating the activities of more autonomous groups of workers (Savage 1996);
- Workers will increasingly be viewed as assets and members of a community rather than corporate resources (Handy 1996a, p. 386); and
- There will be a shift from the authority of position to the authority of knowledge (Savage 1996).

An individual's acceptance of a technological change is often described by using Rogers' diffusion of innovations model. It is theorized that individuals move through stages of innovation adoption as they evaluate a new innovation. The phases are knowledge, persuasion, decision, implementation and confirmation (Rogers 1995). While faculty may have tremendous latitude regarding their individual adoption of technology or innovation, any change is a mix of individual choices and external forces. Faculty often find value in the use of new technology to replace older tasks, and they may provide a relative advantage to them as instructors (Scott 2003). This bottom up approach can help facilitate the faculty ownership of organizational changes but support in the form of administration support for major initiatives is critical. (Dutton and Cheong 2004) Continuing professional development for faculty in the area of distance education can help alleviate the reservations that faculty members have about using distance education technologies (Goolnik 2006) .Without the availability of faculty development and

infrastructures can harden opposition to innovation. However, pressure from leaders at the top can help change organizational culture in order to facilitate the adoption of innovations. (Hall, Harding & Ramsden 2001) One way that institutions have encouraged faculty adoption of distance education technology is via the valuation of online expertise as a valid professional activity, as well as incentives for faculty who use technology. Other ways of encouraging faculty adoption of distance education include organizational structures to support these endeavors (Zawacki-Richter 2005). While one time change efforts, and interventions at both the individual and organizational level are useful, developing the capacity of an organization to continually improve the operations of an organization provides a way to seek continuous adaption to changing internal and external environments.

Organizational Learning

The field of organizational learning focuses on ongoing processes for organizational growth and change. Whereas organizational development focuses primarily on a consultative process that typically is used to handle discrete change events, organizational learning focuses on broader systemic changes that add organizational capacities for continuous change. Robey et al. 2000 define organizational learning as "an organizational process, both intentional and unintentional, enabling the acquisition of, access to, and revision of organizational memory, thereby providing direction to organizational action" (p 130). For this study, the interventions may include more than one time actions by administrators; the interventions may include structural changes to the institution, in order to facilitate the ability for continued revision of organizational memory. While Robey et al. (2000) characterize the nature of organizational learning as

both intentional and non-intentional; this study will focus on intentional organizational learning strategies facilitated by senior level administrators.

One of the seminal works in the field of organizational learning is the work of Peter Senge, *The Fifth Discipline* (1990). Rather than facilitating a sudden organizational change, organizations can be designed in order to support the adoption of gradual changes within the organization. The "Fifth Discipline" which he identifies as "systems thinking," introduces business leaders to the concept of systems thinking and the harnessing of the organization's internal expertise to facilitate changes. The other four disciplines identified include personal mastery, mental models, building a shared vision, and team learning (1990). The use of these tools, as well as the use of knowledge management techniques and strategies can help individuals in organizations avoid repeated mistakes (Hansen, 1999). Whereas organizational learning focuses on the ongoing growth and development of organizations, there is another field that focuses on the methods by which to change the processes an organization changes the structure of operations.

Business Process Re-engineering

Business process reengineering (BPR) as a field, focuses primarily on the social and technical interactions within an organization. BPR provides a literature base that focuses on the redesign of business processes based on the introduction of new systems and structures. While the literature for business process reengineering deals primarily with non-academic operations, the concepts and case studies presented within the literature provide insight into how large bureaucratic organizations can benefit from change to social and technical structures. Business process reengineering requires a

rethinking of how businesses operate within a modern environment. Historically, organizations have continued to operate based on decisions made in the past, long after the justification for the methods of operation have disappeared. As the ability to automate business processes became easier and more prevalent, many industries mechanized old processes. Changes such as automation do not necessarily result in dramatic increases in quality and cost reduction. Hammer and Champy (2004), characterize many technology integration efforts as "paving the cow paths (p. 48)", where technology used to embed outmoded processes. The focus of business process reengineering is on improving the overall functionality of systems from a broad systems perspective. Reengineering efforts have led to major organizational changes in companies as large as Ford motor company, and the elimination of inefficient processes have resulted in real cost savings for the companies that have redesigned their operations (Hammer, 1990). Just as with other change frameworks, there are certain conditions that make business process reengineering more likely to succeed. Some of the key preconditions that help facilitate this success include: senior management commitment and sponsorship, realistic expectations regarding the change, empowered and collaborative workers, strategic context of growth and expansion, shared vision, sound management processes, appropriate people participating full-time and sufficient budget (Bashein & Markus, 1994). Often, as part of business redesign efforts, new systems are put into place that facilitate new processes. The use of an enterprise course management system can help reduce the costs of supporting multiple technologies on a campus (Smith, 2005). Regardless of the technologies employed, a key component for success with any large technology change, and specifically for distance education, is the ability to align the

initiative with the organization (Prestera & Moller 2001). One method of ensuring that a distance learning initiative is properly aligned and responsive to an organization is to create a steering committee. These committees can help with policy revision as well as remove barriers to the adoption of technology by the organization (Schrum & Berge 1998; Deepwell & Frances 2007). Overcoming organizational inertia is one of the challenges that business process re-engineering projects encounter in higher education. This inertia may be caused by ambiguous accountability within higher education institutions (Allen, 1999). Systems theory, and models like the Leavitt diamond have influenced business process re-engineering as a field. This systems perspective within business process engineering provides a way to view a process change within a business. While the change of processes within a system is important to ensure organizational efficiency and effectiveness, a broader view of how an organization is functioning may be necessary to analyze an organization for an organizational development intervention.

Human Performance Technology

According to Stolovitch and Keeps (1999), Human Performance Technology is a "field of endeavor that seeks to bring about changes to a system, and in such a way that the system is improved in terms of the achievements it values." In *The Handbook of Human Performance Technology* (1999), Rosenberg, Coscarelli, and Hutchison identify the major influences of Human Performance Technology from the following fields: systems, learning psychology, instructional systems design, analytical systems, cognitive engineering, information technology, ergonomics and human factors, psychometrics, feedback systems, organizational development and change, and intervention systems. (1999). In this same chapter, they outline the five cornerstones that "form a basis for

describing the discipline:

- HPT operates within a systemic framework.
- HPT depends on a comprehensive analytical process.
- The application of interventions to solve performance problems, or to realize opportunities for performance improvement, requires a non-linear perspective.
- HPT will most probably involve expertise that resides not in individuals, but diverse teams.
- Future HPT practice will depend in many ways on organizational settings and on the requirements of practitioners and sponsors.

(p. 43)

Human performance technologists use a systems approach for performance analysis and change, while using a holistic approach to solving performance problems (Stolovitch and Keeps, 1999). Human performance moves the thinking towards a more strategic focus, rather than focusing on classes and training sessions (Rossett, 2002).

The view of performance situated within the context of a system or perspective was outlined by Thomas Gilbert in "Human Competence: Engineering Worthy Performance". Gilbert outlines his fourth "leisurely theorem" as the assumption that "We can view human accomplishments at several levels of generality, and the values we assign these accomplishments at each level will be derived from the level just above them" (p. 113) Depending on the vantage level, a performance analysis may consist of different activities (Gilbert, 1996). The first three theorems of "leisurely performance" are:

Human competence is a function of worthy performance (W), which is a function of the

ratio of the variable accomplishments (A) to costly behavior (B).

or:

W=A/B

Typical competence is inversely proportional to the potential for improving performance (the PIP), which is the ratio of exemplary performance to typical performance. The ratio, to be meaningful, must be stated for an identifiable accomplishment, because there is no "general quality of competence."

or:

$PIP=W_{ex}/W_t$

For any given accomplishment, a deficiency in performance always has as its immediate cause a deficiency in a behavior repertory (P), or in the environment that supports the repertory (E), or in both. But its ultimate cause will be found in a deficiency of the management system (M).

Gilbert's Vantage Level	**Models**	**Measures**	**Methods**
I. Philosophical Level	Ideals	Integrity	Commitment
II. Cultural Level	Goals	Conformity	Policy
III. Policy Level	Missions	Worth	Programs
IV. Strategic Level	Responsibilities	Value	Strategies
V. Tactical Level	Duties	Cost	Tools
VI. Logistic Level	Schedules	Material Needs	Supplies

Table 1 *Gilbert's Vantage Level*

Gilbert comes to the conclusion that "all instrumental human behavior – all behavioral components of performance – have two aspects of equal importance: a person with a repertory of behavior (P) and a supporting environment (E)" (Gilbert, 1996, p. 81).

The value of a particular performance is dependent on the level of vantage that an

Gilbert outlines a series of equations that are used to define the value of performance within a particular context:

Performance:

P=B-> C; Where performance (P) is a transaction involving behavior (B) as a means, and a consequence(C)

Valuable Performance:

P=B->A

The equation that Gilbert uses to describe the relationship between behavior, performance, and the environment is roughly equivalent to the equation Lewin used to describe behavior in Principles of Topological Psychology (1936).

Thomas Gilbert's description of the role of the environment to behavior:

Behavior = a product of a repertory of behavior (P) and a supporting environment (E)

or:

B = E * P

(Gilbert, 1996, p. 81)

Lewin's definition of behavior:

B= f(PE) – Behavior depends on the state of a person (P) and the environment(E).

(Lewin, 1936 p. 12)

Both of these definitions fit closely with B.F. Skinner's perspective on the role that the environment plays in shaping individual's behavior. According to Carl Binder, Gilbert's Behavior Engineering Model, which is also described in Engineering Worthy Performance (1996), is based on Skinner's three-term contingency. Skinner's three term contingency identifies "discriminative stimuli, responses, and consequences as the components of behavior-environment interactions" (Binder, 1998, p. 48). According to Gilbert, the Behavior Engineering Model was intended to "profile the barriers to behavior and help us plot a balanced strategic approach to overcoming them" (Gilbert, 1982, p. 24).

	S^D Information	R Instrumentation	S_r Motivation
E (Environment that supports a person's repertory)	Data (Dark Room)	Instruments (light switch)	Incentives (light on)
P (person's repertory)	Discrimination (perceives darkness)	Response capacity (flips switch)	Motives (likes a light room)

Table 2 *Gilbert's Behavior Engineering Model* (Gilbert, 1996, p. 83)

Gilbert developed the PROBE model (an abbreviation for "**PR**ofiling **BE**havior") as a series of questions assess each of the boxes within the Behavior Engineering Model. (Gilbert, 1982)

	S^D Information	R Instrumentation	S_r Motivation
E Questions about the behavioral environment	**A. Directional Data** 1. Are there sufficient, readily accessible data (or signals) to direct an experienced person to perform well? 2. Are they accurate? 3. Are they free of confusion – "stimulus competition" that slows performance and invites errors? 4. Are they free of "data glut" – stripped down to simple forms and not buried in a lot of extraneous data? 5. Are they up-to-date and timely? 6. Are good models of behavior available? 7. Are clear measurable performance standards communicated sot that people know how well they are supposed to perform? 8. Do they accept the standards as reasonable? **B. Confirmation** 1. Is feedback provided that is "work related" – describing results consistent with the standards and not just the behavior. 2. Is it immediate and frequent enough to help people to remember what they did? 3. Is it selective and specific – limited to few matters of importance and free of "data glut" and vague generalities? 4. Is it educational – positive and constructive so that people learn something from it?	**C. Tools and Equipment** 1. Are the necessary implements usually on hand for doing the job? 2. Are they reliable and efficient? 3. Are they safe? **D. Procedures** 1. Are the procedures efficient and designed to avoid the unnecessary steps and wasted emotion? 2. Are they based on sound methods rather than historical happenstance? 3. Are they appropriate to the job and skill level? 4. Are they free of boring and tiresome repetition? **E. Resources** 1. Are adequate materials, supplies, assistance, etc. usually available to do the job well? 2. Are they efficiently tailored to the job? 3. Do ambient conditions provide comfort and prevent unnecessary interference?	**F. Incentives** 1. Is pay for the job competitive? 2. Are there significant bonuses or raises based on good performance? 3. Does good performance have any relationship to career advancement? 4. Are there meaningful non-pay incentives (recognition, and so on) for good performance (based on results and not behavior)? 5. Are they scheduled well, or so frequently as to lose meaning and so infrequently as to be useless? 6. Is there an absence of punishment for performing well? 7. Is there an absence of hidden incentives to perform poorly? 8. Is the balance and positive and negative incentives in favor of good performance?
P Questions about behavioral repertories	**G. Knowledge and Training** 1. Do people understand the consequences of both good and poor performance? 2. Do they grasp the essentials of performance – do they get the "big picture" 3. Do they have the technical concepts to perform well? 4. Do they have sufficient basic skills – reading and so on? 5. Do they have sufficient specialized skills? 6. Do they always have the skills after initial training? 7. Are good job aids available?	**H. Capacity** 1. Do the incumbents have the basic capacity to learn the necessary perceptual discriminations with accuracy and speed? 2. Are they free of emotional limitations that would interfere with performance? 3. Do they sufficient strength and dexterity to learn to do the job well?	**I. Motives** 1. Do incumbents seem to have the desire to perform when they enter the job? 2. Do their motives endure – e.g., is turnover high?

Table 3 *PROBE model*

Human performance technology's focus on organizational performance is closely aligned

with Organizational Development. In fact, the International Society for Performance Improvement's HPT model includes organizational design and development and change management as components of the intervention stages.

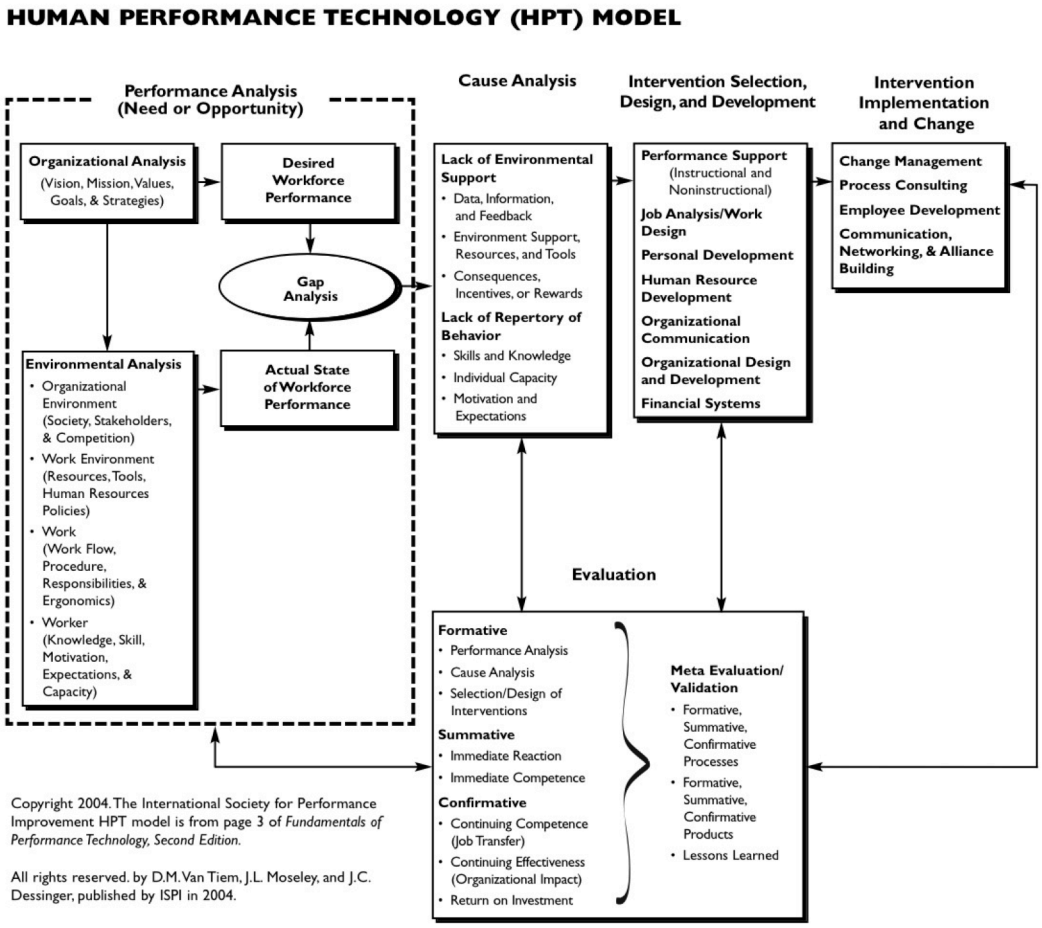

Figure 2 Human Performance Technology (HPT) Model (ISPI 2002)

Burke-Litwin Model

In the field of organizational development there are many models that can be used to describe the various factors that influence an organization. Three models that are common to most organizational development projects: the action research model, Lewin's 3 step model of systems change and the Lippitt, Watson, and Westley phases of planned change (Burke, 1994). The work of Lewin underlies much of the work in organizational development. Lewin's three-step procedure for change consists of three steps: unfreezing the current behavior (through some sort of event or action), movement (action that changes organization to new behavior, such as organizational structure or some form or organizational intervention), and refreezing (locking the new behavior to prevent the change back to the previous state) (Burke, 1994). As part of the organizational change process, a change agent may utilize many tools. One of the tools that a change agent can use to help analyze the current state of an organization is an organizational model. There are many organizational models that may be used to support the analysis of an organization. Some commonly used models are the Weisbord Six-Box Model, the Nadler-Tushman Congruence Model, Tichy's Technical, Political, and Cultural Model, Likert's Profiles, Blake and Mouton's Grid Organizational Development, Levinson's Clinical-Historical Approach, and the Burke-Litwin Model of Organizational Performance and Change (Burke, 1994). Of the models available, the Burke-Litwin Model provides for the prediction of future behavior based on the state of the organization, and explicitly distinguishes between transactional and transformational factors in organizational change (Burke, 1994). The inclusion of organizational climate

as well as formal structures makes this model appealing for the discussion of higher education institutions. While organizational change projects in business may use different measurements than higher education projects (Birnbaum, 1988), the tools are applicable in both contexts. The Burke-Litwin Model provides a method for analyzing the complex interactions between components in an organization, and allows the change agent to explore and facilitate change in the appropriate areas of the organization.

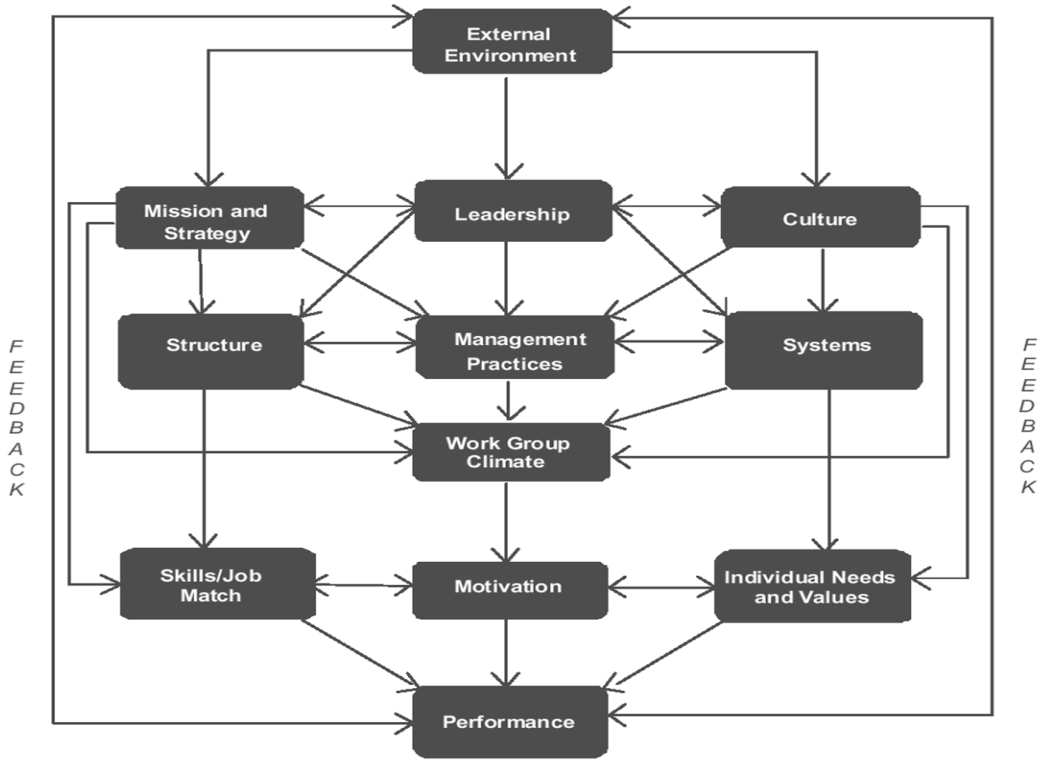

Figure 3 Burke-Litwin Model (Burke, 1994, p. 128)

The model is divided into two major sections: transformational and transactional. Transactional factors include major changes to the organization's culture due to environmental forces from within or outside of the organization and require major changes to the organization's behavior, whereas transactional factors deal with short-term reciprocity among groups (Burke, 1994). As the transformation of an institution from a traditionally residentially based degree delivery program to a distance learning support organization requires far reaching changes within the institution, the factors that will be explored in this study will focus on transformational factors of higher education institutions. The transactional factors will be considered and collected where appropriate, but since universities may differ in significant ways in relation to structure

and function, the transactional categories will not be the principal focus of the investigation.

The key dimensions for the transformational factors of an organization within the Burke-Litwin model are:

- External environment - outside conditions that influence the organization
- Mission and strategy - sense of purpose and direction perceived by organizational members
- Leadership – executive behavior and beliefs that drive direction and actions of others
- Organizational culture – overt and covert rules and principles that guide organizational behavior
- Individual and organizational performance – outcomes and feedback of the system.

(Burke 1994).

Summary of Studies in Support of Model's Validity		
External environment	Mission & Strategy Leadership Culture	Prescott (1986) Miles & Snow (1978) Gordon (1985)
Mission and Strategy	Structure Leadership Culture	Chandler (1962); Miles et al. (1978) Tregoe & Zimmerman (1980)
Leadership	Management Practice Performance	Fleishman (1953) Weiner & Mahoney (1981); Smith et al. (1984)
Culture	Reward System Management Practices Performance	Kerr & Slocum (1987) Bernstien & Burke (1989) Wilkins & Ouchi (1983)
Structure	Climate Management Practices Systems Task Requirements	Kerr & Slocum (1984); Schneider & Snyder (1975) Lawrence & Lorsch (1967) Ouchi (1977) Galbraith (1977; 1973)
Management Practices	Climate	Schneider (1980); Schneider & Bowen (1985)
Systems	Climate Management Practices Individual needs and values	Bullock & Lawler (1984); Cummings (1982) Cummings & Schwab (1973); Hammer (1988); Zuboff (1988) Deutsch (1985); Jordan (1986)
Climate	Motivation-Performance	Rosenberg & Rosenstein (1980)
Task-Person	Motivation-Performance	M.J. Burke & Pearlman (1988); Hunter & Schmidt (1982)
Individual Needs and Values		Hackman & Oldman (1980); Guzzo et al. (1988)

Table 4 *Summary of Studies in Support of Model's Validity*

Organizational Inertia

Kinnear and Roodt (1998) define organizational inertia as: "the resistance of an organization to make transitions and its inability to quickly and effectively react to change" (p. 44). As discussed previously when describing the role of systems in organizations, it is necessary to modify the controls of an organization to allow innovation, which is counter to the pressure to limit variance in organization behavior, as organizations typically seek to limit variance to improve efficiency and effectiveness (Haberstroh, 1966). One of the factors that limit the ability of organizations to change is the history of the organization, and a series of incremental changes may be more effective than a large-scale shift (Kelly & Amburgey, 1991). Kinnear and Roodt (1998) provide a survey of the literature on organizational inertia and identified that the phenomenon of organizational inertia has been described using a variety of terminology, based on each author's perspective. Using the Burke-Litwin Model of Organizational Performance and Change as a map of organizational dimensions, Kinnear and Roodt mapped organizational concepts to each of the dimensions of the Burke-Litwin model (Kinnear and Roodt, 1998, p. 46).

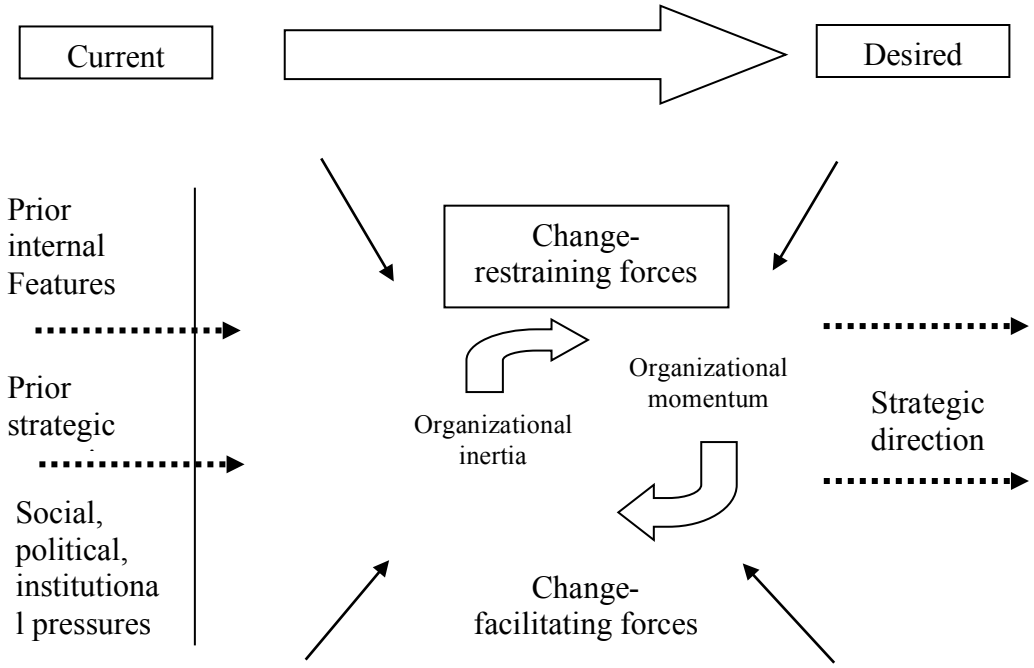

Figure 4 Forces in organizational inertia (Kinnear & Roodt, 1998, p. 44)

	External environment	Leadership	Mission and Strategy	Culture	Management Practices	Structure	Systems (policies & procedures)	Work-Unit Climate	Motivation	Task & Skills	Individual Needs & Values	Performance
Organizational inertia (Fombrun, 1992)	*			*		*	*			*	*	
Structural inertia (Kelly & Amburgey, 1991; Robbins, 1994)						*	*					
Organizational momentum (McCarthy, 1995)						*				*	*	
Change-restraining forces (Connor & Lake, 1988)		*			*				*		*	
Organizational viscosity (Eccles, 1994)		*	*						*		*	
Organizational responsiveness (Walters, 1994)			*		*	*	*			*		
Organizational learning disabilities (Walters, 1994)					*					*		
Barriers to learning (Harrison & Dawes, 1994)					*							
Organizational readiness (Dalziel & Schoonover, 1988)		*	*		*							
Resistance to change (Bryant, 1988; Connor & Lake, 1988; Diamond, 1986; Hammer and Stanton, 1995; Michael, 1981; Moerdyk & Fone, 1986; Robbins, 1994; Schein, 1992).		*	*	*	*		*	*	*	*	*	

Table 5 *Dimensions as inertia-contributing factors* (Kinnear & Roodt, 1998, p46)

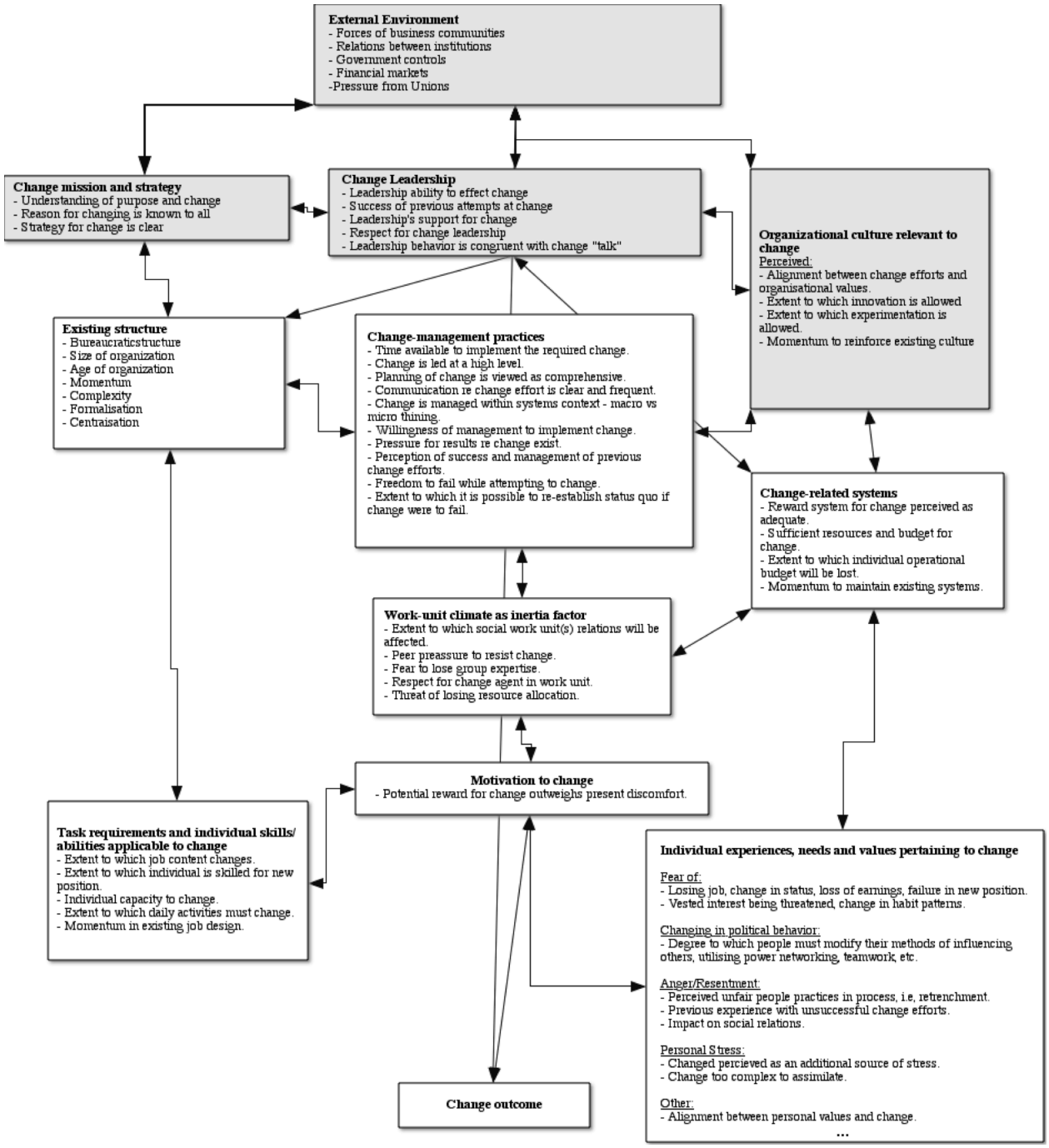

Figure 5 Adapted Burke-Litwin model with contributing factors to organizational inertia (Kinnear & Roodt, 1998, p. 44)

The organizational inertia scale was recently renamed the Change Readiness Inventory™, however, it is the same instrument described in prior studies. Some of the prior studies that have used the Change Readiness Instrument (CRI) include the

following studies:

- A 1998 study comprised of junior to senior management individuals from various industrial sectors in South African companies. Using a convenience sample, 963 questionnaires were distributed and 617 were returned (automobile industry N=175, chemicals N=22, financial services N=250, insurance N=112, pharmaceutical N=38, and other N=38). A review of the questionnaire items led to the identification of a change readiness construct, and indicated that some of the transactional categories of the Burke-Litwin model had the most influence on organizational inertia. These dimensions were management practices, change-related systems, work-unit climate, task requirements, and individual experience of change. (Kinnear & Roodt, 1998, p. 53)
- A 2001 study was conducted in an Australian context, with a convenience sample of 340 participants, with 293 survey returned. The participants consisted of members of the Australian Institute of Managers, as well as students in a MBA course in Strategic Management at the University of Southern Queensland. The researchers confirmed that the instrument measured organizational inertia successfully in the Australian context (Roodt, Kinnear, Erwee, Smith, Lynch, & Millett, 2001).
- A 2004 study comprised of 347 employees in a typical state department in South Africa who were given the instrument through an in-service training institution. The results of the study indicated that the instrument was effective in the public sector, as well as private industry. The impact of the Burke-Litwin transformational categories: leadership and organizational culture were “more

prominent in this study" (Louw & Martins, 2004, p. 62).

The Role of Academic Leadership

The first dean in the United States was the appointed by President Charles W. Elliot at Harvard University in 1870, and was appointed to relieve the president of some administrative responsibilities. (Martin and Samels, 1997) As of 2001, there were only six studies of Chief Academic Officers in the literature, and of the six, only three included Chief Academic Officers at 4-year institutions (Cejda & Rewey, 2001). Since the Cejda and Rewey publication in 2001, there have been other studies that have surveyed Chief Academic Officers, including the 2008 Sloan Consortium survey of Chief Academic Officers and Faculty.

The 2008 survey report contains the following description of the CAO:

> "The respondents for this series of annual reports have been academic administrators, typically the chief academic officer; the person with overall responsibility for the academic program for the institution. These executives typically have titles of "provost" or "academic vice president." The survey is directed to these individuals because of their key decision-making role for the institution." ("Staying the Course", NASALGUC, 2008)

The 2008 Sloan Consortium survey compared faculty and Chief Academic Officer's perceptions regarding online education. In this study, CAOs and online teaching faculty had a wide level of agreement as to the motivations for teaching online, with the exception of their ranking additional income as a motivation being ranked higher for

CAOs, and faculty ranked student centered issues higher. The most common point of agreement was the flexibility in meeting the needs of students. The study also identified a leveling out of institutions who identify report online learning as an important component of their long term strategy, with public institutions the most likely to identify online education as a strategic component. The type of institution that had the lowest report of online education as important to their long-term strategy were the baccalaureate institutions. (Allen, I. E. & Seaman, J. 2008)

Champions at high levels in the university can help support change initiatives, but department chairs also play a critical role. The ability of administration to support faculty as part of this change process is key, as faculty can either see new technologies to support teaching as either a an accelerator or break on distance learning. (McConachie and Danaher 2005) Many researchers have identified the connected nature of the social and technical systems within organizations (Pahl 2003; French & Bell 1999; Sarker 2000) One such system is Pahl's Dimensions of Teaching and Learning Environments. The four perspectives that comprise the teaching and learning environment include: content, format, pedagogy, and infrastructure. The content perspective is comprised of the subject matter within the Teaching and Learning environment that is the representation of content within the environment. The format perspective is comprised of the organizational perspective, which includes the institutional context. Pedagogy, meaning the instructional design or the educational perspective, and Infrastructure, the technical perspective, round out the four perspectives that comprise the Dimensions of Teaching and Learning Environments (Pahl 2003). As part of a continually evolving structure, higher education institutions have both external and internal factors of change.

Pahl identified some of the changes that influence change within higher education institutions, each categorized by the Dimensions of Teaching and Learning Environments. Within the content perspective, the nature of the body of knowledge taught continuously evolves, and instructors continue to improve the content and of their courses. The course formats change as the instructors who run courses on a campus change. These personnel changes may also include related course developers, as well as technical staff. The composition of the student body also changes. Other factors include the timetable, curriculum, and the legal and financial environment. Infrastructure may change based on the evolution of hardware, systems, and language technology, as well as additional software and hardware systems. Pedagogy may change based on advances in information technology, education and cognitive sciences.

Key to any major change in higher education is the middle management, as well as the administration support for change efforts. Leadership is needed to help transfer these localized cases of technology use to a general population within a university. This leadership requires the involvement of all stakeholders on campus and is more than simply a top down approach, and encompasses a wide range of support services for both faculty and students (Otte, 2006). In the university system in this study, the primary leaders used for the collection of data are the primary administrative contact for distance education, and the institutional primary technical contact for the centrally operated course management system.

CHAPTER 3

METHODS

Overview

This study addresses the readiness of a Southeastern State University System to support the growth of online learning. A bounded case study design was used, for the purpose of providing context about the time and place that the phenomenon of the readiness to change within the Southeastern State University System. The study was divided into three phases which included an initial quantitative survey phase followed by a second phase of structured interviews and a third qualitative interview phase. The first quantitative survey phase and the second phase of structured interviews provided a categorized list of factors that fit within the framework of the Burke-Litwin organizational development model. A proprietary Change Readiness Inventory instrument that is based on the Burke-Litwin model was administered to the Institutional Distance Education Representatives (IDER) group, as well as the Learning Management System Administrators (LMSA) group. The instrument was designed to measure the change readiness of an organization via the administration of the survey to organization members. The instrument provided quantitate data regarding the university system overall, as well as data regarding the two groups under study. A second structured interview phase was conducted because of low participation in the quantitative phase, and provided further data regarding the sub-dimensions of the change readiness instrument. A third final phase was added to provide a picture of the readiness of the Southeastern State University System's readiness to change. The reason for the structured interview was to elaborate on the initial quantitative results, as well as provide

additional data regarding the dimensions of the CRI model. The survey data collection was conducted using a proprietary instrument, the Change Readiness Inventory (CRI), which is based on the Burke-Litwin model of organizational performance and change.

Sample Characteristics

The Change Readiness Inventory (CRI) was used in this study to capture administrator perception of change facilitating and change resisting factors from those who work closely with online learning within the Southeastern State University System. For this study there were 115 Learning Management System Administrators (LMSAs) invited to participate, as well as 34 Institutional Distance Education Representatives (IDERs). The researcher's role within the Southeastern State University System required that an institution be excluded from this study. This removed one IDER and three LMSAs from the study population. While the sample size for this study was relatively small compared to the prior studies using the CRI™, the instrument does provide a means by which we can explore the perspectives of administrators who are familiar with online learning change initiatives within the Southeaster State University System. In order to assist with the triangulation of data gathered for this descriptive case study, interviews were sought from both the Institutional Distance Education Representatives (IDER) and the Learning Management System Administrator (LMSA) groups. CRI™ Survey respondents were provided an opportunity to volunteer to participate in a follow-up interview session at the end of the survey. Seven survey respondents indicated their willingness to participate in follow-up interviews on the survey instrument. However, only three of the respondents agreed to an interview upon email contact by the researcher. In order to increase the number of interview subjects, requests for interviews

were also made to anyone who started the CRI™ and had consented to participate in the study, but who did not complete the survey. Additional interview subjects were sought over the course of three months after the survey closed. This outreach yielded one additional interview participant for the study, for a total of four participants in the interview phase of the study. None of the LMSA survey respondents (complete and incomplete surveys) agreed to be interviewed for the purpose of this study. A description of interview participant demographics can be found in table 6.

	Gender	Institutional Category	Role within System	Role at Institution	Time in Position
Participant #1	Female	State University	IDER	Other	5 years or more
Participant #2	Female	State College	IDER	Faculty	5 years or more
Participant #3	Male	State College	IDER	Staff	5 years or more
Participant #4	Male	State College	IDER	Staff	Less than 1 year
Participant #5	Male	n/a	University System Staff	n/a	5 years or more

Table 6 *Demographics of interview participants*

A breakdown of the demographics of the survey (CRI™) participant demographics can be found in Table 7.

	Institution Type	**n (%)**
University System Institutional Affiliation	Research University	1 (7%)
	Regional University	2 (13%)
	State University	5 (33%)
	State College	4 (27%)
	Two Year College	1 (7%)
	Not Sure	0 (0%)
	None of the above (system office)	2 (13%)
Role within University System	Faculty	3 (20%)
	Staff	10 (67%)
	Other	2 (13%)
Role at Institution	Institution Distance Education Representative (IDER)	7 (47%)
	Learning Management System Administrator (LMSA)	4 (27%)
	Other	4 (27%)
Length of time in current role	Less than one year	1 (7%)
	1-2 years	2 (13%)
	2-3 years	3 (20%)
	4-5 years	2 (13%)
	5 years or more	8 (53%)
Gender	Male	6 (40%)
	Female	9 (60%)

Table 7 *Demographic of CRI™ Participants*

The breakdown of the demographics for the third, qualitative interview phase can be found in table 8.

	Gender	Institutional Category	Role within System	Role at Institution	Time in System
Participant #1	Male	Research Institution	Teaching and Learning Center Director	Faculty	5 years or more
Participant #2	Male	State University	Chief Academic Officer	Faculty	Five years or more
Participant #3	Male	State University	Chief Information Officer	Staff	Less than five years

Table 8 *Demographics of interview participants*

Research Design

This study describes the readiness of a Southeastern State University System to support the growth of online learning within a particular moment in time. Data collection was conducted multiple methods including the use of a proprietary instrument that is based on the Burke-Litwin model of organizational performance and change. An instrument was used to reduce the complex nature of change within a large organization and related sub-components into a perspective that could be explored. The survey instrument that was used is based on the Burke-Litwin model and measures individual's perception of barriers to change at an organizational context. The instrument identifies individual's perceived organizational inertia across multiple dimensions of organizational change. The Burke-Litwin model of organizational change identifies both transaction and transformational categories as factors to consider during an organizational change process. In this study, the instrument was completed by the primary distance education administrative contact at each university as well as the

primary technical contact for the learning management system at each university within a statewide university system. The use of both the technical administrative contacts within the university system provides two potential respondent groups for each institution within the university system, which provided the ability to compare responses between groups. The third phase of the study consisted of interviews with senior level administrators within different institutions within the university system in order to provide their perspective of the university system's readiness to change.

In this study, an instrument was used to quantify individual perceptions as a way to reduce the complexity of large-scale organizational change in order to make observations regarding the readiness to change of an entire university system. The observations at the university system level are based on the Burke-Litwin model of organizational change, which is a model that reduces the complex concept of organizational change into two primary discrete categories (transformational and transactional) as well individual dimensions within the primary categories.
The aim of this study was not to determine the differences of opinion between the administrative and technical groups within the university system, rather the focus is on the university system as a whole. The measurement of individuals' perception is the means by which to gather data to determine the overall university system's readiness to change. The data gathered in the survey and structured interview phases of the study guided the interviews in phase three and provided valuable insight and a structure to begin the interviews with the senior level administrators at the institutions.

The use of survey methodology as a mode of study is prevalent in the field of

organizational development. A frequently cited survey research pioneer, Rensis Likert, is considered as part of the field of Organizational Development. The use of multiple tools and theories to investigate the state of an organization follows in the tradition of the field of organizational change and development. The focus of this study is on measuring perceived readiness to change within a university system adding capacity for online courses. The Change Readiness Inventory (CRI™) used to measure this readiness to change is based on the concept of organizational inertia. Organizational inertia as defined in this study is a complex phenomenon and is a multi-variable construct. The study was designed to create a snapshot in time of a university system undergoing a change.

The instrument used for the first phase survey is the Change Readiness Inventory, which was developed by Rood and Kinnear to measure organizational inertia (1998). The Change Readiness Inventory (CRI™), formerly known as the Organizational Inertia Scale, has been used to measure organizational inertia in a variety of industrial, state agencies, and business settings (Kinnear & Roodt, 1998; Roodt, Kinnear, & Erwee, 2003; Roodt, 1997; Louw & Martins, 2004). The instrument provides diagnostic information that enables a facilitator to determine if an organization is ready to change (Kinnear & Roodt, 1998). Due to the high level nature of the dimensions explored, the instruments and terminology are at such a general level that the differences between business and education settings are minimal. The Change Readiness Instrument measures the inertia or change readiness score for an entire organization, which is the University System in this study. Additionally, the instrument provides sub-scores for all 12 of the Burke-Litwin dimensions as well as a classification of the

favored approaches as transactional or transformational. This instrument was used to classify the overall orientation towards change (transactional or transformational) within the university system as a whole, identify which dimensions (Burke-Litiwn model) are favored within the university system and was used to measure the key facilitating and restraining factors within the university system. The survey and subsequent structured interviews provided rich data that was used to guide the interviews with senior administrators from institutions within the Southeastern State University System that were conducted as part of phase three of the study.

Research Questions

The study answers the following questions regarding the change towards online course delivery:

1. Does the Southeastern State University System have a primarily transformational or transactional orientation?
2. What are the change facilitating factors within the Southeastern State University System?
3. What are the key change restraining factors within the Southeastern State University System?

Situational Setting For Study

The context for this study is a single University System, with the population for the study consisting of primary distance education administrative contacts and primary course management system technical contacts. Within the University System, there is a stated goal to increase capacity (Watts & Pierce, 2007), along with the identification of online learning as a one method to reach this goal. The institutions each share a common

governing board and the institutions are bound to the same state laws and governance. This population was selected as a purposeful sample, as this population is traditionally difficult to access for studies, and the researcher had access to this particular population. Selecting university administrators within a single context provides a consistent environment in which to compare factors. The administrators selected are closely involved with administrative issues related to online learning at their institutions. These administrators have responsibilities related to the development and support of online learning within their institutions. The various administrative and technical requirements for online course delivery are visible to these individuals via their engagement with university system communications and formal group associations. These decision makers have an important role in an institution's online and distance education efforts. Therefore, the opinions and perceptions of these administrators can guide the growth and direction of new programs and modifications of existing programs. Data gained from these administrators provides a valuable perspective on the overall university system and this rich data will inform researchers who seek to study the development of distance learning programs within institutions. The public institutions within the Southeastern State University System share a common board that sets system wide policy, and the central board of the university system has established a goal of increasing capacity for students as an entire system. One of the methods for increasing this capacity, without increasing physical facilities, is online education. In 2007-2008, a goal was established to increase access to University System programs through distance learning. There are initiatives for coordinating and facilitating online collaborative programs, and the development of franchise programs, but these efforts require

substantial coordination at each public institution level. While each institution is part of the University System, each institution has an independent annual budget, and operates the majority of the services and resources required for the operation of the institutional business. There is a President and a Chief Academic Officer (CAO) at each institution. The University System has an administrative committee on Academic Affairs that is comprised of the CAO of each institution. Each Chief Academic Officer may appoint a primary contact for distance education at each institution. These contacts form an advisory committee on distance education for the university system as a whole. Another group of primary technical contacts for the centralized course management system also meets regularly to discuss technical aspects of supporting online learning activities associated with the course management system.

First Phase: Survey Data Collection

Surveying administrators within the University System was a difficult task because of the number of meetings and other activities that demand attention of these individuals. While an Internet survey is the probably the most convenient method of conducting this research, it competes with other email and solicitations that administrators receive. There are only 35 institutions within the university system, and with the limited sample size, a multi-prong approach for gathering the data was necessary. The first pass included an Internet based delivery of the instrument, followed by individual email follow-up for non-respondents with increasingly frequent reminders und the end of the survey period. Prior to the start of the survey, a request was made that that the chair of the distance learning administrator and the course management system administrator group lead contact their groups regarding the study, and encourage

participation. An opt-out option was provided for those who did not want further contact in each of the survey communications. The survey was open from August 24th, 2011 through September 16th, 2011. Reminders for those who had not completed the survey were sent out on August 31st, September 2nd, September 9th, and September 15th. As part of the survey there was an option to volunteer for further questions for clarification with the researchers. This was included as a way to reach participants if there were any further clarifications needed, or if interview data was needed for improving the study.

Sampling Frame

There is an official list of representatives for both the distance education administrative and course management primary contact for each institution. For each administrator, there is a name, address, phone number, fax number, and email address. This list was used to identify and contact the population within the university system. The contacts at my own institution was not be used in the study.

Data Collection Procedures

The survey was announced via an individual email to each of the individuals in the two groups. This email described the survey purpose, methods, and deadline. A web address to the survey was provided for the administrator to complete the survey if they wish to take the survey immediately. The invitation to participate was sent August 24th, 2011, with the survey period running through September 16th. Reminders were sent on August 31st, September 2nd, and September 9th, 2012. Respondents who started, but did not complete the survey were given a special invitation to complete their survey on September15th. Due to the low response rate for the survey, participants who had started the survey, but had not finished the survey, were added to the list of individuals

to be interviewed.

Data analysis

The CRI™ instrument can generate data at an organizational, group or individual level (Jopple van Rooyen & Partners SA, 2007). Scores are generated that indicate the overall organizational change readiness, sub scores for the 12 factors described in the Burke-Litwin model, as well as the favored organizational change approach (transactional or transformational) within the system. The instrument consists of 109 questions regarding the respondents' perception of a change within their organization. Each questions was answered by selecting a value from a seven-point response scale. Higher scores in a particular category or group indicate a higher readiness for change, whereas lower scores indicate a lower readiness for change. Interpretation of the results was done in consultation with the owner of the proprietary instrument. Permission to use the instrument was given by the instrument owner. For analysis, a comparison of the dimensions was conducted via independent t-tests to compare the mean scores. Comparisons were made between transactional and transformational scores. The dimensions with the highest scores were identified, as well as the dimensions with the lowest scores. Higher scores indicate a higher readiness to change, whereas lower scores indicate a lower readiness to change. The dimensions were ranked and the highest scoring dimensions (indicating a high readiness to change) as well as the lowest scoring dimensions (indicating a low readiness to change) were reported for the university system as a whole, with the dimensions broken down by the IDER and LMSA groups to provide additional opportunity to review.

Protection of Human Subjects

Prior to conducting the study, the research methodology, and the instrument was submitted through Georgia State University's Institutional Research Board process. An email message introducing participants to the survey included contact information for the researcher, as well as a description of how the survey data was used. Responses will be kept confidential, and any data collected was stripped of individual or institutional identifiers prior to sharing with individuals outside of the researcher and the researcher's committee. Prior to distribution, two senior administrators within the university system reviewed the survey instrument and granted permission to conduct the survey with the two groups. Interview subjects were identified via the completion of a question on the survey requesting a follow-up survey. An amendment to contact incomplete survey respondents for a follow-up interview was requested and approved by the Institutional Research Board.

Validity and Reliability

Prior administrations of the CRI™ have been used in large organizations where the sample size was much larger. Two prior studies that used the instrument had a N=617 (Kinnear & Roodt, 1998) and N=293 (Roodt, Kinnear, Erwee, Smith, Lynch, & Millett, 2001) and N=347 (Louw & Martins, 2004). The first study that used the CRI™ involved 617 individuals from a variety of industries that were undergoing transformation were given the instrument. This first Kinnear and Roodt study (1998) demonstrated that the items used to measure organizational inertia had high internal consistency, with $\alpha=0.981$. In the same study they also investigated a second scale that resulted in $\alpha=0.887$ for the second factor, which dealt with "external change forces,

change strategy, and imposed personal demands" (p. 50). The purpose of the first study using the CRI™ by Roodt and Kinnear study was to develop an instrument to measure organizational inertia, which resulted in the exclusion of three dimensions described in the literature to be associated with organizational inertia. These three dimensions were: "knowledge of the change strategy; imposed personal demands and external forces for change (p. 53)" Kinnear and Roodt describes the exclusion of external forces as a confirmation that these forces do not contribute to organizational inertia (Kinnear, C. & Roodt, G.1998). This study made use of three techniques with the purpose of improving internal validity that have been described by Merriam (1998): triangulation, member checks, and clarification of researcher's biases. This study was not designed to develop new theories based on narrative text gained from the interviews, nor was it feasible to include interviews from a substantial portion of the population of the university system as a whole. There is a long history of multiple methodologies and data collection methods used within the field of organizational change and development. In order to compliment the CRI™ instrument with another source for triangulation and further insight into the state of the university system, interviews were conducted with willing participants. Due to the politically sensitive nature of the study, a decision was made to refrain from audio recording the interview sessions with participants. The purpose of the study is to addresses the readiness of a Southeastern State University System to support the growth of online learning. This is a politically charged question, which potentially inhibits individuals commenting on system wide activities. Additionally, to reduce researcher bias in interviews, interviewee responses on the CRI™ were not reviewed prior to the interview with participants. Participants were tracked via the survey system

while completing the CRI™ instrument solely to increase response rates. Comparisons were not made between the second phase interview data and the survey data at an individual level. The first two phases informed the third, qualitative phase of the case study. The use of three phases provided multiple data points for the case study. Interviewees were informed of the confidentiality of their sessions, and were given copies of the interview notes in the second phase interviews for review after the sessions. None of the interviewees participating in the second phase requested changes to the notes. The third phase of data collection in the study was qualitative and made use of full transcripts, as well as analytic tools and technology to help with qualitative data analysis. Yin (2008) describes these tools as particularly useful when researchers are seeking to use grounded theory strategies in their research. The initial use of interviews in this bounded case study was designed as a way to help prevent a verification bias against the CRI™, as well as to expand on the findings from the CRI™ aspect of the study. Even though verbatim transcripts were not made of the second phase interviews, quotes from the study participants were taken during the interviews, to help preserve the essence of the interview (Moustaka, 1994). The third phase of the study made use of verbatim transcripts to provide a richer view of the setting of the case study. While the study was initially designed as a mixed methods study there was a low response rate for the initial survey and subsequent structured interview. A decision was made to add a third qualitative phase was added to provide a richer picture of the state of the Southeastern State University System. The addition of a third phase of data collection transitioned the study from a mixed methods study to a bounded case study. The use of three phases of data collection improves the validity of the study by the use of multiple

sources of information regarding the readiness of the Southeastern State University to support the growth of online learning. Creswell (1998) describes a case study as "… an exploration of a 'bounded system' or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context" (p. 61). While reviewing and coding the transcripts the researcher maintained a web accessible case study database which included self-reflection during the transcript review process, a description of protocols, as well as any related analysis documents. After each interview the researcher reflected about the experience of the interview to help identify any emotional or personal bias regarding the interview data.

Study Design Limitations

This study was designed to identify the barriers to change within an entire university system. While the study does make use of individual perceptions, it was not a study of individual perceptions towards the growth of online learning within the system. Rather, the focus was on the overall university system's barriers to change. Barriers at the institutional level, or even at the individual level, were not addressed by this study. In the interview phase of the study the participants were reminded to focus on the system as a whole, rather than on their individual institutional contexts. While the university system context was emphasized in the survey phase of the study, there may have been confusion regarding the unit of analysis for the survey items. The addition of interview data provides a way to help triangulate issues with the survey instrument but does not resolve the issues related to context confusion. Due to resource constraints, only the primary administrative and technical contacts for online learning initiatives were used in this study. Due to the use of a centralized course management system, this

limitation was also an advantage, as there is commonality among most institutions in regards to the technical and administrative limitations for change.

As a bounded case study design data was collected via surveys, structured interviews and qualitative interviews. In the first phase, a survey was used to provide a categorized list of factors that fit within the change readiness model. A proprietary Change Readiness Inventory instrument was administered to the Institutional Distance Education Representatives (IDER) group, as well as the Learning Management System Administrators (LMSA) group. An assumption for this study is that the Chief Academic Officer has appointed a representative, an Institutional Distance Education Representative (IDER) who is familiar with the university system's efforts in the area of distance education. Additionally, the Chief Information Officer has appointed a representative, a Learning Management System Administrator (LMSA) who is familiar with the university system's efforts in the area of distance education. The instrument was designed to measure the change readiness of an organization via the administration of the survey to organization members. The instrument provided quantitate data regarding the university system overall, as well as data regarding the two groups under study. A second, structured interview phase was conducted to provide further data regarding the sub-dimensions of the change readiness instrument. The reason for the follow-up is to help triangulate the initial quantitative results, as well as provide additional data regarding the sub-categories of the CRI™ model. The data collection was conducted using a proprietary instrument that is based on the Burke-Litwin model of organizational performance and change. In the first, quantitative phase of the study a proprietary Change Readiness Inventory instrument was administered to the Institutional

Distance Education Representatives (IDER) group, as well as the Learning Management System Administrators (LMSA) group. The instrument was designed to measure the change readiness of an organization via the administration of the survey to organization members. The instrument provided quantitate data regarding the university system overall, as well as data regarding the two groups under study. A second, qualitative phase was conducted because of low participation in the quantitative phase, and provided further data regarding the dimensions of the change readiness instrument. The reason for the exploratory follow-up was to help triangulate the initial quantitative results, as well as provide additional data regarding the sub-categories of the CRI™ model. Data collection of quantitative data for was conducted using a proprietary instrument, the Change Readiness Inventory (CRI™), which is based on the Burke-Litwin model of organizational performance and change. The Change Readiness Inventory™ (CRI™) used to collect quantitative data in this study generates an overall change readiness score based on all of the respondents data, sub-scores on 12 change restraining factors, and provides an indication of the preferred change approach (transformational or transactional). (Jople van Rooyen & Partners SA (Pty) Ltd, 2007) This instrument was selected due to the instrument's direct link to the Burke-Litiwin model, a model the can be used to understand an organization and to assist with analysis. (Burke, 2008)

Due to the size of the university system, as well as the nature of the change being studied, the population under study was limited to two categories of employees within the university system. These groups were selected to ensure that they were familiar with online learning, as well as university system activities in the area of online learning. This

design limited the perspectives to those who had the highest possible level of experience with the concepts under study. This may have limited the variety of perspectives captured. A large-scale study would have included additional levels of university administrators and potentially individual faculty and staff at the institutions. These views were not captured in this study. The definition of the planned change in the university system was described in the survey instrument as follows: "For the purpose of this study, the change initiative is the growth of additional online courses and programs within the university system. The term 'company' refers to the university system. The term 'employees' refer to faculty, staff, and administration within the university system as a whole." The CRI™ has not been used in the higher education environment previously. Prior studies with the instrument have been within large government organizations, rather than higher education institutions. However, Burke (2008) has used the Burke-Litwin model for higher education applications. Another limitation of this study was the number of participants in the study. The response rate for the survey portion of the study was quite low, even when additional measures were taken to increase participation. Due to the researcher's role within the organization, as well as the potential risks for participants if they were identified individually, confidentiality was necessary to encourage participation in the interview process. Regardless, there were only five interview participants out of a potential of one hundred and forty-nine. The limited number of respondents to the survey, as well as the low interview participation limits the generalizability of the results of the study. Additionally, only one of the groups invited, the Institutional Distance Education Representatives (IDER), participated in the interview phase of the study. This limits the researcher's ability to

address the perspectives of the Learning Management System Administrators (LMSA) regarding the change to online learning. There exists statistical data to describe the differences between the two groups from the survey instrument, however there is a lack of rich descriptive data due to the exclusion of the LMSA group. One limitation of the administration of the Change Readiness Inventory (CRI™) instrument was that it was distributed online via an online survey tool. The manual for the CRI™ calls for administration of the instrument in paper form, in a quiet environment. This was not feasible for the purpose of this study, so the instrument was made available to participants via an email invitation. This may have been a contributing factor for the low response rate. The response rate for within the IDER group was 21%, and 7% for the LMSA group. Another limitation that is non-trivial is that it is often difficult for individuals who are embedded in a context or institution to differentiate between the institutional context and the system context. Within the construct of a survey it is difficult to address this potential disconnect.

Internal Consistency

The version of the Change Readiness Inventory used for this study included items related to both transformational and transactional categories, with the transformational category including the external environment as part of the measure. The CRI™ was initially known as the Organizational Inertia Scale by Jople van Rooyen & Partners SA when Kinnear and Roodt developed it in 1998. The instrument was further refined from the initial study, and underwent a few changes before turning into the current form of the CRI™ (Jople van Rooyen & Partners SA (Pty) Ltd., 2007). The instrument is designed to measure the overall change readiness of an organization. The

instrument was designed to be administered in an in-person, paper-based form. In this study, a Cronbach's Alpha of $\alpha = 0.964$ was calculated for the 109 items (the total number of CRI™ questions) across the 15 responses, indicating a high internal consistency across all of the items in the instrument. Since the instrument has also been designed to measure the organizational constructs of transformational and transactional factors, a Cronbach's Alpha was calculated for the items that are defined as Transformational and Transactional. Cronbach's Alpha of the transformational items was calculated at $\alpha = 0.948$, with transactional items scoring $\alpha = 0.932$. Both of these measures indicate high respondent agreement across the instrument. Cronbach's Alpha scores of 0.700 or higher are generally considered acceptable (Lattin, Carroll, & Green, 2003). A further breakdown of the Cronbach's Alpha (α) scores across each of the dimensions can be seen in table 9.

	Cronbach's Alpha (α)	**Items (n)**
Transformational	**0.948**	**40**
Change Mission and Strategy	0.919	13
External Environment	0.821	7
Change Leadership	0.810	12
Organizational Culture Supportive of Change	0.879	8
Transactional	**0.932**	**69**
Organizational Structure	0.800	8
Change Management Practices	0.883	15
Change Related Systems	0.903	5
Work Unit Climate	0.545	8
Job/Task Requirements	0.645	11
Motivation to Change	0.857	6
Personal Impact of Change	0.670	7
Emotional Impact of Change	0.737	9
All Items	0.964	109

Table 9 *Cronbach's Alpha (α) scores for each of the dimensions and the CRI™*

Demographics of CRI™ Participants

Invitations to participate in the current study were sent to 149 individuals within the Southeastern State University System. Of the 149 invitees, there were a total of 36 individuals who consented to participate in the study. Of the 36 who consented to participate in the study, 15 completed the CRI™ in its entirety. The 15 respondents included seven Institutional Distance Education Representatives (IDERs) and eight Learning Management System Administrators (LMSAs). Table 10 provides a breakdown of the participation rates of the population that was invited to participate in this study. The CRI™ is an instrument that was designed to be distributed widely within the organization.

Participant Group	Count
Combined IDER and LMSA groups invited	149
Total consented to participate	36
Total Declined participation	2
IDER opted out of all survey communication	1
IDER bounced email	1
IDER participants who completed the CRI™ (18%)	6
IDER participants who partially completed the CRI™	3
IDER members invited	34
LMSA members invited	115
LMSA opted out of all survey communication	6
LMSA bounced email	3
LMSA survey participants who completed the CRI™ (6.96%)	8
LMSA participants who partially completed the CRI™	18

Table 10 *CRI™ Participant Response Rates*

Participants represented different institutions within the university system. The majority of respondents identified themselves primarily as staff members within the university system, with the majority of the respondents associated with state universities within the system. Eight of the respondents identified themselves as a Learning Management System Administrator (LMSA) for their institution. A second group consisted of seven Institutional Distance Education Representatives (IDER). An additional participant from the university system office, who has worked with distance education in the system for many years, also participated in the survey as well as the interview. For the purpose of statistical analysis, the system office staff member was counted as part of the IDER group as he is a member of the IDER committee and mailing list. Within the university system, the IDER group of individuals were selected by the chief academic officers to represent their own institutions for university system issues related to distance education. The other group in this study is the Learning Management System Administrators (LMSA), which consists of individuals who have been assigned the role

as a primary contact for issues related to the learning management system within the university system. The invitation to participate was distributed to all participants on the IDER mailing list as well as the participants on the LMSA mailing list. Respondents were individually tracked via Survey Monkey. A majority of the respondents (8) had been in their current role for 5 years or more, with only one respondent reporting less than one year in the role.

Survey Sample Size and Implications for Statistical Analysis

The size of the survey sample in this study was insufficient to conduct multivariate statistics on the survey items. Principal Component Analysis (PCA) has been used in prior studies to identify factors among items on the CRI™. According to Bryant and Yarnold (1995), the use of principal component analysis (PCA) requires five times the number of observations as there are dimensions being measured (1995). In this study there were 12 dimensions (see Appendix B for details), which are measured by 109 items. With a response rate of only 15 fully completed surveys, calculating a principal factor analysis would not produce reliable results. However, the authors of the CRI™, Kinnear and Roodt, describe the usefulness of the raw scores to calculate the overall Change Readiness Index, a transactional score, a transformational score, and twelve scores for each of the dimensions. Since there are no standardized normal scores available for the CRI™, they suggest that the midpoint on the seven-point scale per item, also known as the median score for the scale, be used to determine change facilitating or change resisting scores. (Jople van Rooyen & Partners SA (Pty) Ltd., 2007). Following this interpretive advice, the mean (μ) of each item was calculated, with

an overall mean calculated for each of the 12 dimensions that correspond to the Burke-Litwin model, as well as the mean for the items in the transformational and transactional categories. Burke and Litwin developed their model based on prior research and literature. Kinnear and Roodt also noted additional studies and publications that reinforced the individual factors of organizational change (1998) in their prior publications about the use of this instrument.

Second Phase: Post-survey Interview Data Collection and Analysis

The second phase structured interview sessions with participants were conducted as a semi-structured interview, with questions directly related to the study questions, as well as the CRI™ categories (which also correspond to the Burke-Litwin model). Interview notes were read three times prior to the start of formal coding of the notes. The researcher used the dimensions measured by the CRI™. Each dimension is outlined within the CRI™ manual (Jople Van Rooyen & Partners SA, 2007). The dimensions from the CRI™ are outlined in Appendix B. Each of the concepts cited in the interview notes was coded by the researcher and were subsequently reviewed and revised after several reviews. Each concept was identified by category and then a judgment was made with respect to the restraining or facilitating nature of the individual concept. For example, one interview subject identified flexibility at the institutional level as a problem, but based on the CRI™ this flexibility was change enabling. The researcher frequently referred to the CRI™ to ensure that the coding was consistent with the CRI™ model. A frequency count for each of the responses that fit the dimensions was created. An additional limitation of the study methodology is that the researcher is familiar with the CRI™ dimensions, and non-CRI™ dimensions may not have been represented as

completely in the interview notes. However, as a way to raise awareness of potential researcher bias, a self-administration of the interview questions was conducted prior to the interviews with study participants (Appendix H). To strengthen internal validity, copies of the notes were sent to each interview participant within 24 hours of the interview, with a request for feedback for accuracy. Since the number of interview participants was small, further statistical analysis of the frequency of dimension presence was not conducted beyond a simple tabulation. A discussion for each dimension within the CRI™ has been provided based on interview data. The primary purpose of collecting interview data was to help with triangulation of study data. A secondary purpose was to gather additional descriptive information regarding the dimensions as they exist within the university system, through the lens of the CRI™ and the Burke-Litwin model. Questions and discussions provided by the interview participants were not limited to the survey instrument dimensions.

Second Phase Interview Protocol

Second Phase interview participants were initially selected when CRI™ respondents completed a question on the online survey indicating their willingness to be interviewed. All study participants were given multiple options to participate in interviews. An additional attempt was made to increase interview participants, with only one additional participant volunteering to participate. Interview participants were given their choice of time for the interview. One interview was conducted in person, with the remaining four interviews conducted via telephone. An electronic copy of the waiver for participation was sent in advance of the interview. Prior to the start of the formal interview, the participants were thanked, reminded of the study, and informed that they

would receive a copy of the researcher's notes for review. The interview sessions were less than one hour in length. For each interview the researcher took notes during the interview, at times asking the interviewee to slow down their response while the researcher captured the discussion in note form. In the cases where quotes were taken from the interview, the quotes were immediately read back to the interviewee, seeking confirmation of the quote's accuracy. Notes were reviewed and basic corrections to spelling and structure were made immediately following the interview. The questions asked during the interview sessions were as follows:

Question #1: What are the factors that enable growth of online learning within the University System?

Question #2: If you were to characterize the efforts by the entire university system as either transactional (focusing on changing things like organizational structure, management processes, systems, work-group climate, skills/job match, motivation, individual needs and values and performance)) or transformational (Mission and strategy, leadership, culture, and the external environment) in nature. Which would you choose?

Question #3: To what extent do you believe that the current university system strategic plan emphasizes online learning growth?

Question #4: Tell me about your experiences with the support or lack of support for online learning within the university system.

Third Phase: Interview Data Collection and Analysis

The third phase of the study consisted of interviewing three university

administrators from the Southeastern State University System. Guided by the initial survey data, the subjects were selected purposefully. Faculty within the university system with expertise in online learning will assist with the selection of the subjects. A copy of the interview questions was shared with the interview participants in advance of the interview and each of the interview sessions lasted roughly one hour. After the interviews a third party transcription service was used to transcribe the interview sessions. The transcribed interview text was then sent to the interview subjects for review and corrections. Opportunities for additional comments and clarification were provided. After the transcriptions were finalized, the researcher began reviewing, coding and classifying the data gathered in the interview transcripts using Glasser's (1999) constant comparison method. After reviewing the transcripts multiple times the researcher wrote a summary of the themes that emerged from the interviews. Multiple readings of the transcripts were made with the purpose of comparing the themes that emerged across the interviews. Notes from the interviews were typed within three hours after the interview and also included a reflection of the interview experience. Subsequent reviews of the transcripts were made with further reflection documented. A codebook was developed from prior work by Roodt and Kinnear (2009) describing the Burke-Litwin Organizational Change and Development model. The interview transcripts were coded using the codebook and a peer debriefer was used to check for bias in the coding. The peer debreifer holds a Ph.D. in Instructional Technology and has experience with qualitative research and online learning. The coding documents were shared with the reviewer and the reviewer's feedback was incorporated into the analysis. The Burke-Litwin model's categories were also anticipated as categories based on the review of the

literature, as well as the first two phases of the study. Categories that did not fit within the Burke-Litwin model were noted and are discussed in the results chapter of this study. Additional categories and data that did not fit the model were noted and reviewed. Categories that emerged from the interviews were compared against the first two phases of the study as well as findings from prior research and the literature. The interview sessions were recorded and a qualitative analysis of the interview was performed. The interview subjects were given information regarding the initial study findings and were asked to provide their perspective. Individuals contacted for interviews included a chief information officer from a state university, a teaching and learning center director from a second state university and a senior academic university administrator from a third university.

Triangulation

This study included individuals in a variety of roles within the university system, as well as multiple data sources to improve internal validity for the study. First there were the two groups of individuals who were given the CRI™ instrument in the first phase of the study. A second phase consisted of interviews with volunteers from the first round of the study. The participants in the first and second phases represented multiple, diverse institutions and job titles within the university system. The third phase consisted of individuals from three separate institutions within the system in positions that reported to a president or a provost. Additionally, university system documents, such as the university system strategic plan, and meeting minutes from both groups provided context to the barriers to change within the system discussed in the interviews. The data collection took place during the course of a year, which provided an opportunity for long

term gathering and observation.

Summary

This case study made use of an organizational change instrument that is rooted in the literature of organizational change, and that has been used in prior studies to examine change readiness within large organizations. In this study, the instrument was used to provide initial data regarding the change facilitating factors within the university system. This data included an initial reading of the system's orientation towards a primarily transformational or transactional nature as well as the key change restraining factors within the system. Two groups of administrators were given an instrument that measured their individual perception of university system's response to change, and the responses were used to determine the overall university system's key factors that contribute to change readiness. The two groups of administrators included the administrative contacts for distance education at each of the institutions within the system, as well as the primary technical contact for a shared course management system. These two groups are impacted directly by the university system goal of increasing online course offerings within the university system. The first phase data collection facilitated by the survey was followed up by a second phase of interviews that was designed to further expand on the initial survey data. The response rate was low for the survey and subsequent interviews so the study design was modified to become a bounded case study that included a third qualitative interview phase. The first two phases provided the groundwork upon which the third phase was based and helped inform the rich data gained from the interviews in the third phase. This study was conducted while conforming to Georgia State University's Institutional Review Board

policies, and will ensure the protection of human subjects. This chapter outlined the methodology that was used for this study, and provided a basic discussion of how the study data was reviewed.

CHAPTER 4

RESULTS

Survey and Initial Interviews

The first, quantitative phase of this study was conducted using a proprietary instrument, the Change Readiness Inventory, which is based on the Burke-Litwin model of organizational performance and change. The use of an instrument was necessary due to the size of the organization and the large number of dimensions under study. The Change Readiness Inventory provides scores that indicate the overall change readiness for an organization, sub-scores for all 12 of the Burke-Litwin dimensions, as well as a classification of the organization as having a transactional or transformation orientation.

CRI™ Instrument Scores

The CRI™ instrument answer sheet consists of a seven-point scale with unique responses for each of the instrument questions. A median score for each item would be 4, with 7 being the maximum score for each item. For the purpose of analysis, only complete survey results were used to calculate the average scores in each of the categories and dimensions. An average score was calculated across all respondents in each category or dimension. The transformational category (n=40 items) had a mean of μ=4.11 and the transactional category (n=69 items, μ=3.98). A simple ranking of the 12 dimensions contained within the CRI™ resulted in following dimensions ranking as the top three enabling dimensions: 1) Motivation to Change (μ=4.70), 2), Job/Task Requirements (μ=4.44) and 3) Organizational Culture Supportive of Change (μ=4.38). A ranking of the top restraining dimmensions based on the lowest mean scores yields the following dimensions: 1) Change Related Systems (μ=2.93), 2) Emotional Impact of

Change (μ=3.76) and 3) Change Mission and Strategy (μ=3.78). Table 11 provides a list of the mean scores, as well as the respective enabling and restraining rank for each dimension.

Dimension	N	μ	Enabling Rank	Restraining Rank
I. Transformational Category	15	4.11		
A. Change Mission and Strategy** (Key Restraining Dimension #3)	15	3.78	10	3
B. External Environment	15	4.28	4	9
C. Change Leadership	15	4.02	6	7
D. Organizational Culture Supportive of Change* (Facilitating Dimension #3)	15	4.38	3	10
II. Transactional Category	15	3.98		
E. Organizational Structure	15	3.93	8	5
F. Change Management Practices	15	4.01	7	6
G. Change Related Systems** (Key Restraining Dimension #1)	15	2.93	12	1
H. Work Unit Climate	15	3.90	9	4
I. Job/Task Requirements* (Facilitating Dimension #2)	15	4.44	2	11
J. Motivation to Change* (Facilitating Dimension #1)	15	4.70	1	12
K. Personal Impact of Change	15	4.15	5	8
L. Emotional Impact of Change** (Key Restraining Dimension #2)	15	3.76	11	2

Table 11 *Change Readiness Dimensions (Mean scores)*

Averages for the CRI™ dimensions and the transformational and transactional factors were independently calculated for both the IDER and LMSA groups that participated in this study. Table 12 provides a listing of the μ values across the dimensions and the two categories. The facilitating and restraining dimensions are also listed in the table. Further discussion regarding the differences between these groups is provided in chapter five.

Change Dimension	IDER (N=8) (μ)	LMSA (N=7) (μ)	Overall (N=15) (μ)
I. Transformational	*3.98*	*4.23*	*4.11*
A. Change Mission and Strategy (3 - Restraining)	3.77	3.79	3.78
B. External Environment	4.33	4.23	4.28
C. Change Leadership	3.70	4.29	4.02
D. Organizational Culture Supportive of Change (3 - Facilitating)	4.11	4.63	*4.38*
II. Transactional	*3.78*	*4.15*	*3.98*
E. Organizational Structure	3.39	4.39	3.93
F. Change Management Practices	3.98	4.03	4.01
G. Change Related Systems (1 - Restraining)	2.77	3.08	2.93
H. Work Unit Climate	3.66	4.11	3.90
I. Job/Task Requirements (2 - Facilitating)	4.61	4.30	*4.44*
J. Motivation to Change (1 - Facilitating)	4.50	4.88	*4.70*
K. Personal Impact of Change	3.84	4.43	4.15
L. Emotional Impact of Change (2 - Restraining)	3.52	3.96	3.76

Table 12 *Overall mean scores for each of the dimensions*

Between Group Analysis

The two primary categories in this study, transformational and transactional were calculated at μ=4.11 (transformational) and μ=3.98 (transactional) as previously discussed. An independent samples t-test was conducted on the scores between the IDER and LMSA groups to determine if there was a statistically significant difference between the two groups. Since there were only two groups in the study, a t-test is more appropriate for comparing two groups than the ANOVA mean comparison procedure. Prior studies using the CRI™ have used t-tests for mean comparisons. A t-test on the transformational category scores yielded $p > 0.05$ which indicates a violation of the assumption of the homogeneity of variance. An adjustment to the degrees of freedom using the Welch-Satterthwaite method yielded a significant difference between the

groups, t (8.874) = -6.40, $p < .05$, with the LMSA group $\mu=4.23$ and IDER $\mu=3.98$. A closer review of the individual dimensions revealed that there was a significant difference between the means for the organizational structure category ($p=0.013$). A Levene's test on the transactional category indicates that the group variances showed no significant difference using the independent t-test. Since the distributions of scores were not normally distributed, a Mann-Whitney U test was performed. The result of the test was that the differences between the IDER and LMSA groups were significant ($U=16$, *$P=0.165$)*. The mean score for the LMSA group was a full point higher than the IDER group. This indicates that for the organizational structure dimension, LMSAs believed that the organizational structure dimension was change facilitating. This is in contrast with the IDER group, who indicated that the organizational structure was a resisting dimension. The results of the t-test for the equality of means are found in table 13.

Dimensions	p-value
Transformational	**0.538**
A. Change Mission and Strategy	0.829
B. External Environment	0.839
C. Change Leadership	0.227
D. Organizational Culture Supportive of Change	0.293
Transactional	**0.239**
E. Organizational Structure	*0.013*
F. Change Management Practices	0.909
G. Change Related Systems	0. 672
H. Work Unit Climate	0.283
I. Job/Task Requirements	0.334
J. Motivation to Change	0.436
K. Personal Impact of Change	0.123
L. Emotional Impact of Change	0.254

Table 13 *t-test for equality of means*

Overall, the IDER group's scores identified the top change-enabling dimension as Job/Task Requirements (μ=4.61), Motivation to Change (μ=4.5), and the External Environment (μ=4.33) as the top 3 change facilitating factors. The IDER group's scores identified Change Related Systems (μ=2.77), Organizational Structure (μ=3.39), and the Emotional Impact of Change (μ=3.52) as the top three change restraining factors. The LMSA group's scores identified Motivation to Change (μ=4.5), Organizational Culture Supportive of Change (μ=4.63), and Personal Impact of Change (μ=4.43). The LMSA group's top 3 change restraining factors were Change Related Systems (μ=3.08), Change Mission and Strategy (μ=3.79), and Emotional Impact of Change (μ=3.96). Table 14 lists the rankings for each of the change dimensions, by the overall mean rank as well as both the IDER and LMSA rankings. While the overall comparison on each dimension provides insight into how the groups compare, there are 109 individual

questions that are part of the CRI™. Reviewing the items where there were significant differences between groups provides additional insight into the differences between groups.

Change Dimensions - Facilitating Rank (mean)	IDER Rank	LMSA Rank	Overall Rank
A. Change Mission and Strategy	7 (μ=3.77)	11 (μ=3.79)	10 (μ=3.78)
B. External Environment	3 (μ=4.33)	7 (μ=4.23)	4 (μ=4.28)
C. Change Leadership	8 (μ=3.70)	6 (μ=4.29)	6 (μ=4.02)
D. Organizational Culture Supportive of Change	4 (μ=4.11)	2 (μ=4.63)	3 (μ=4.38)
E. Organizational Structure	11 (μ=3.39)	4 (μ=4.39)	8 (μ=3.93)
F. Change Management Practices	5 (μ=3.98)	9 (μ=4.03)	7 (μ=4.01)
G. Change Related Systems	12 (μ=2.77)	12 (μ=3.08)	12 (μ=2.93)
H. Work Unit Climate	9 (μ=3.66)	8 (μ=4.11)	9 (μ=3.90)
I. Job/Task Requirements	1 (μ=4.61)	5 (μ=4.30)	2 (μ=4.44)
J. Motivation to Change	2 (μ=4.50)	1 (μ=4.88)	1 (μ=4.70)
K. Personal Impact of Change	6 (μ=3.84)	3 (μ=4.43)	5 (μ=4.15)
L. Emotional Impact of Change	10 (μ=3.52)	10 (μ=3.96)	11 (μ=3.76)

Table 14 *Ranking of change dimensions by group*

Item Level Analysis

An item level t-test analysis was conducted to determine if there were items where the two groups had significant variance at the 95% level. This analysis resulted in a list of several items where *p* values identified statistically significant differences ($p =< 0.05$) between the response group means. The items that resulted in means with significant differences between the means of the IDEA and LMSA respondents included four of the seven questions related to the organizational structure factor, one question from the work unit climate factor, one from the personal impact of change factor, and one from the emotional impact of change factor. The seven items in which the variances were significantly different via the t-test are outlined in table 15.

Item	p-value	μ (IDER)	μ (LMSA)	Dimension
E42: Is the structure of the business flexible to allow changes?	0.007	2.8571	4.1250	Organizational Structure
E44: Is decision making allowed across all levels of the business?	0.050	2.4286	4.0000	Organizational Structure
E45: Are employees' job descriptions flexible?	0.022	3.2857	4.6250	Organizational Structure
E48: Are work procedures easy to change?	0.009	2.7143	4.2500	Organizational Structure
H71: Will your work unit lose some of its resource allocations as result of the change initiative?	0.022	1.8571	3.5000	Work Unit Climate
K99: Will people's power networks be disturbed during the change initiative?	0.021	3.0000	4.0000	Personal Impact of Change
L105: Are some people rejecting the changes completely?	0.039	2.7143	4.1250	Emotional Impact of Change

Table 15 *CRI™ items with statistically significant difference between the means*

Second Phase Structured Interviews

The second phase of the study was conducted to provide further data regarding the dimensions of the change readiness instrument. The bounded case study

methodology used for this study allows for the use of multiple data collection methods. Building on the quantitative data, the qualitative data collection provides additional data regarding the transformational and transactional categories as well as the 12 dimensions of the CRI™ model. In this study there is no control over the behavioral events and the focus of this study is on contemporary events, specifically a push to add online course delivery within the Southeastern State University System. The unit of analysis for this study is the entire university system, so while interviewing study participants they were reminded of the unit of analysis.

The research questions for this study are:

1. Does the Southeastern State University System have a primarily transformational or transactional orientation?
2. What are the key change facilitating factors within the Southeastern State University System?
3. What are the key change restraining factors within the Southeastern State University System?

During the interviews a couple of the participants veered back towards their own local experiences on their campus. One advantage to the participant demographics in this study was that four of the five of the participants in the interviews had over 5 years of experience within the system, in their current role. One limitation was that only Institutional Distance Education Representatives (IDER) were willing to be interviewed for the purpose of this study, along with a university system staff member. This population limits the perspective of the respondents to those who participate in the IDER group activities within the system. Equal attempts were made to reach out to participants

in both groups, and there were a disproportionate number (115) of Learning Management System Administrators (LMSA) in the pool of study participants compared to the IDER group (34). The disproportionate response rates were an interesting finding of the study and the reason for this lack of response would be worthwhile future investigation.

Quantitative Results of Structured Interviews

The notes from the interviews were reviewed against the two categories and the 12 dimensions of the CRI™. Based on a review of the notes and the researcher's recollection of the interviews, a count of the frequency of the enabling and restraining categories and dimensions was conducted. This quantitative data is represented in table 16.

	Frequency											
	Interview 1		Interview 2		Interview 3		Interview 4		Interview 5			
	Enable	**Restrain**	**Enable**	**Restrain**	**Enable**	**Restrain**	**Enable**	**Restrain**	**Enable**	**Restrain**	**Total Enabling**	**Total Restraining**
Transformational											29	3
Mission and Strategy	1	0	1	0	1	0	1	0	1	0	5	0
External Environment	1	0	3	0	3	0	1	0	4	0	12	0
Leadership	1	0	3	0	7	0	0	0	3	0	14	0
Organizational Culture	0	3	0	0	2	0	1	0	1	0	4	3
Transactional											19	17
Structure	3	4	1	0	1	2	0	0	0	1	5	7
Management Practices	0	0	2	0	0	0	2	0	0	0	4	0
Systems	0	0	0	0	1	0	2	0	0	0	3	0
Climate	0	1	0	0	0	0	2	0	0	0	2	1
Task Requirements and Individual Skills/Abilities	0	2	0	0	0	1	0	2	1	0	1	5
Individual Needs and Values	0	0	0	0	2	0	0	0	0	3	2	3
Motivation	0	0	1	0	0	0	0	0	0	1	1	1
Emotional Impact of change (CRI™ Factor)	0	0	0	0	1	0	0	0	0	0	1	0

Table 16 *Frequency Count of Dimensions in Interviews*

Administrator Interviews

The first two phases of the study (survey and structured interview) informed the third phase which consisted of interviews with senior administrators within three institutions of the Southeastern State University System. The interview subjects were given the opportunity to give their overall impression of the university system's activities regarding the change towards online learning as well as chance to respond to the findings of the first two phases of the study.

Chief Academic Officer

The Chief Academic Officer (CAO) is a senior administrator who reports to a president at a doctoral granting institution within the university system. He has been within the university system for over five years. As a chief academic officer he also serves on a statewide committee for academic officers that meet to discuss academic affairs issues within the system and is on a mailing list for chief academic officers within the system. The CAO described the overall activities of the university system as transactional in nature, with a series of incremental improvements in the university system's capability to offer online learning. A recent initiative at the university system level has now lead to a clear directive to offer more online courses as part of a system wide focus. The influence of the environment on the system was described as a major factor for enabling a change towards more online learning (as well as hybrid courses). This influence was visible in the form of conversations with legislators, board members as well as an increase in competition across higher education in general. The coverage of Massive Online Open Courses has also started new discussions on campus. An example of this pressure is evidenced in the following response to a question about the role of the environment as a factor for change:

> "The competition from other institutions, private institutions, proprietary institutions even, has caused a lot of pressure from external. Not just that we see that as competition, but because our boards and our legislatures and people like that see that out there and they come to us frequently and say, "Why aren't we doing this? Couldn't we be more efficient with this, et cetera?"

This influence was also described as both direct to leadership in the institutions as well as to the legislators and governing board. Large initiatives such as collaborative programs for offering online courses and degree programs were described as system initiatives in support of online learning. One factor that was described as a particular motivator at the institutional level was the potential source of revenue for online programs. While he identified a lack of clear direction from the system, he identified the flexibility that this lack of clear direction had provided for the institutions. Along with pressure from the external environment in terms of competition, he also described a change in the paradigm of education. A change was also made in how they hire faculty, as new faculty are hired with online teaching as part of their workload expectation.

Chief Information Officer

The Chief Information Officer is a senior administrator who has been with the university system for less than five years. He reports directly to the president at his institution and sits on a university system committee for chief information officers that discuss issues related to information systems and technology within the system. A mailing list also exists for this group. The CIO has experience in leading online learning at other institutions and discussed some strategies that have been used at other institutions. One of the key elements of discussion was a philosophical alignment for online learning within institutions in a system. The institutions in the system vary in terms of their mission and vision. There is a disconnect between individual institutions and the fit for online learning.

"Philosophically there's a lot of people who believe that they can't meet

> the mission of the university with online education. So not only is it philosophy it's culture within the organization, within the institutions as well. You know a lot of the past battles that have been fought there's not an awareness of that and some people are continuing to be Don Quixote and fight the windmill on the efficacy of online learning. But in major studies – the no significant difference study – things like that have come and gone and employer adoption has – is a non-event now; employers don't generally care whether the people have an online – get their degree from an online program or not."

The motivation for growth, and increased tuition dollars, for institutions was identified by the Chief Information Officer:

> "My observation in talking – and in talking with CIO's about what's going on in their particular institutions seems to be that there's a keen awareness that online education is a mechanism for growth of an institution and the type of growth that they're looking for is directly related to tuition dollars."

This type of growth was also discussed with an acknowledgement of a growth of competition for students due to online learning's potential geographic reach. Throughout the interview he discussed a lack of centralized support and leadership for online learning that can guide activities such as centralized services, consortia agreements, as well as provide more guidance for institutions. He spoke of broader industry wide trends for the building of research networks for regional and global partnerships. He spoke of the value of standardization and centralization that allowed for greater efficiency in the system for online learning.

Director of the Teaching and Learning Center

The Director of the Teaching and Learning Center reports to a chief academic officer within a large research institution. He is on a system-wide committee for teaching and learning center directors that discusses a wide range of topics related to teaching and learning. This group has also been asked to help with faculty training and development for a migration to a new learning management system. A mailing list for the teaching and learning directors provides a way for communication regarding the wide range of issues facing teaching and learning center directors. The Director of the Teaching and Learning Center has been with his institution for over 20 years, primarily in a faculty role. His recent (within the past 5 years) change to a Teaching and Learning Center Director role has provided more insight into university system activities. As a member of a large doctoral research institution he has not had much contact or awareness of university system activities, including online learning. He has been given a charge of working with faculty on increasing hybrid courses within his institution, but otherwise had not seen a push towards online learning in any centralized way at the institution. In fact, the university declined to participate in an online core curriculum initiative that the university system established. He speculated that factors such as prior experience with distance education in the form of video conferencing and satellite delivery have influenced faculty and administrator perception of distance education in general.

> "It doesn't seem to me to be all that organized here, at least not yet. I think we're kind feeling our way. You know State University (Pseudonym) is a really big place and there are a lot of people doing their own thing. And

> there isn't that much coordination of effort yet. I think we're trying to work on that as an institution, but there isn't a lot of coordinated effort. So, when you say distance learning for example, a lot of places have a distance learning center, we don't. A lot of places have an online plan and we don't. So, it's kind of ad hoc I think at this point, our institutional participation in that kind of learning. And it's probably from lack of a plan at this point, but I think there was a time not that long ago, maybe five years ago, maybe seven, when there really was no institutional will, I mean there was active resistance to the idea. We did have satellites, was it Statewide Video Conferencing System (Pseudonym) do you remember those? But that really didn't work very well. And I think you know when most faculty think about distance education, that phrase in particular, they think about manila envelopes and people on you know islands somewhere. So they don't really have a modern sense of how we learn today, and that's my goal is to try and help educate State University (Pseudonym) faculty to know that this is how you learn“

There was some discussion with the chief academic officer with respect to online learning, but there has not been much institutional will for supporting online learning. The coverage of MOOCs has influenced some discussion; to the point the chief academic officer has started engaging the faculty on how to respond. The experiences related to the learning management system has focused on the mechanics of the technology tool, and he has not seen much support in terms of how to use the technology from a teaching perspective. His perception of the faculty view is that online learning

appears to be extra work, or there may be a lack of technical ability for operating the computer system. Other factors for resistance would include the perception that online learning would do harm to students who come from homes with lower education levels than other institutions. Overall the teaching and learning center director discussed a lack of institutional will and coordinated effort for online learning.

CHAPTER 5

DISCUSSION

The three-phase design of this bounded case study provided an opportunity to explore the phenomenon of change within the context of a single university system undergoing a change to offer more online learning. The first phase was conducted via the distribution of a survey instrument that was designed to measure the change readiness for large organizations. This first phase provided a high level summary of the key change enabling and change resisting factors within the university system. The second phase provided additional detail and an elaboration of the findings of the first phase via the use of structured interviews with survey respondents. The third phase, which consisted of interviews, provided the perspective of senior university administrators who work with university leadership in the academic, technical and faculty development areas of their institutions. These interview subjects are part of different committees and mailing lists than the group in the first two phases of study and this additional perspective added depth to the study data collection. The following is a discussion of how the three phases of the study fit together to provide a description of current state of the Southeastern State University System undergoing a change towards more online learning.

Initial Findings from Phase One and Two Data

Research Question #1 Does the Southeastern State University System have a primarily transformational or transactional orientation?

The overall mean of scores by participants for all items, across both IDER and LMSA groups was $\mu=4.02$, indicating a neutral perceived readiness to change in the

university system. Broken down by group, the IDER group survey yielded μ=3.85, which indicates a slight perceived resistance to change. The LMSA group's score was m=4.18, which indicates a slight perception of readiness to change. One limitation of this instrument is that there has not been enough data collected to establish a norm for score results, by which to compare the scores against other organizations. Therefore, the best comparison available is against the median score of 4. Calculating the mean of the four factors associated with transformational categories and the eight factors associated with the transactional categories resulted in an overall score for the transformational and transactional categories. With n=15 participants, the transformational score was μ=4.11, and the transactional category was μ=3.98 (both on a 7 point scale). Kinnear and Roodt suggest evaluating the resulting score by comparing it to the median of the point scale, with scores below a 4 classified as change resisting and scores above a 4 as change enabling (Jople van Rooyen & Partners SA (Pty) Ltd., 2007). By this measure, the score would indicate that the perception of the administrators who had the instrument administered tend to view the Southeastern State University system to have a slight transformational orientation, rather than a transactional orientation. However, the small observation size and the small difference between the transformational and transactional scores prevent any generalization to the entire system. Whereas the transformational categories are focused on leadership factors, the transactional categories are comprised of dimensions that are more managerial in nature. The factors within the transactional category are focused on improvement and quality, rather than transformation of the organization. The eight factors that fall within the transactional category are: structure, management practices, systems, climate, task requirements and individual

skills/abilities, motivation, and Individual and organizational performance (Burke, 2008). A question regarding the transformational versus transactional nature of the university system was added to the questions list for senior administrators as part of the third phase of the study.

Phase Three Interview Discussion

Interviews with senior administrators within institutions of the Southeastern State University System provided additional perspective on the overall orientation for the university system. The Chief Academic Officer interviewed described his perspective the question of the university system's orientation towards a transactional approach:

> "Even though I can see pieces of this transformational side of it, I really see this as an incremental approach that is almost a bottom up, let's look at process and see how that effects what else we're doing given that we probably think we need to do some online learning, and I think that's a different approach in my mind anyway than this larger strategic initiative. 'We're going to have this online presence of this type and here are the support structures we're going to put around that, et cetera.'"

As mentioned previously, the lack of a centralized push for online learning from the CAO's perspective was a benefit in terms of university system's organic adoption and growth of online learning. With a lack of experimentation there may have been more active resistance. This contrasts with the view of the Chief Information Officer who described the varied levels of adoption of online learning throughout the university system:

> "You know the view among chief information officers is that putting

> together online programs is a whole lot of work; it adds work to them and it adds expense and all of these kinds of things; so many of them are not necessarily supportive of it. And I think that a lot of this – you know, if you've studied the technology adoption curve and look at the innovators and early adopters in the front part of the curve versus the late majority and late adopters – not only does that apply to individuals I think it applies to organizations. And the Southeastern State University System as an organization certainly is experiencing that; they are early adopters and there are late adopters. There are people who just long for the old days and seeing it as a passing fad and hope it will go away, and so they're not necessarily motivated to act on it. So you see that. You know, I don't think by any means there is cohesive, forward-thinking motivation across the board to do this."

The application of Rogers' diffusion of innovations at an institutional level would imply that institutions would move through the stages of innovative adoption as they evaluate a new innovation. The phases of knowledge, persuasion, decision, implementation and confirmation as defined by Rogers (1995) would also indicate that there must be some determination of a relative advantage for the institutions to adopt a new way of operation. The organic growth of online learning could help with adoption, but as with most organizational change initiatives there is need for support from the administration and leadership to help drive change. The perspectives of the CAO and CIO support the view that the university system is transactional in approach, and this aligns with the interview results from the

teaching and learning center director who pointed to a lack of centralized efforts for online learning within his own institution, as well as a lack of awareness of university system activities related to the promotion of online learning. Both the CAO and the CIO pointed to a recent initiative within the university system regarding increasing college completion that focused explicitly on online delivery approaches.

Research Question #2: What are the key change facilitating factors within the Southeastern State University System?

A simple ranking of the key facilitating factors by mean score resulted in the identification of the following three key change facilitating factors: motivation to change μ=4.70 (transactional), job/task requirements μ=4.44 (transactional) and organizational culture supportive of change μ=4.38 (transformational). Kinnear and Roodt describe these three factors as follows:

> **Motivation to change** measure the degree to which organization members look forward to and are inspired by the changes.
>
> **Job/task requirements** measure the degree to which organizational members' work practices are affected by the change and the changes they have to make in this respect.
>
> The **Organizational culture supportive of change** measures the degree to which organizational members are allowed to participate and influence the change process, or to experiment with alternative ideas (p. 10).
>
> Jople van Rooyen & Partners SA (Pty) Ltd., 2007)

Figure 6 provides a visual representation of how the top three overall change factors compare against both the IDER and LMSA groups.

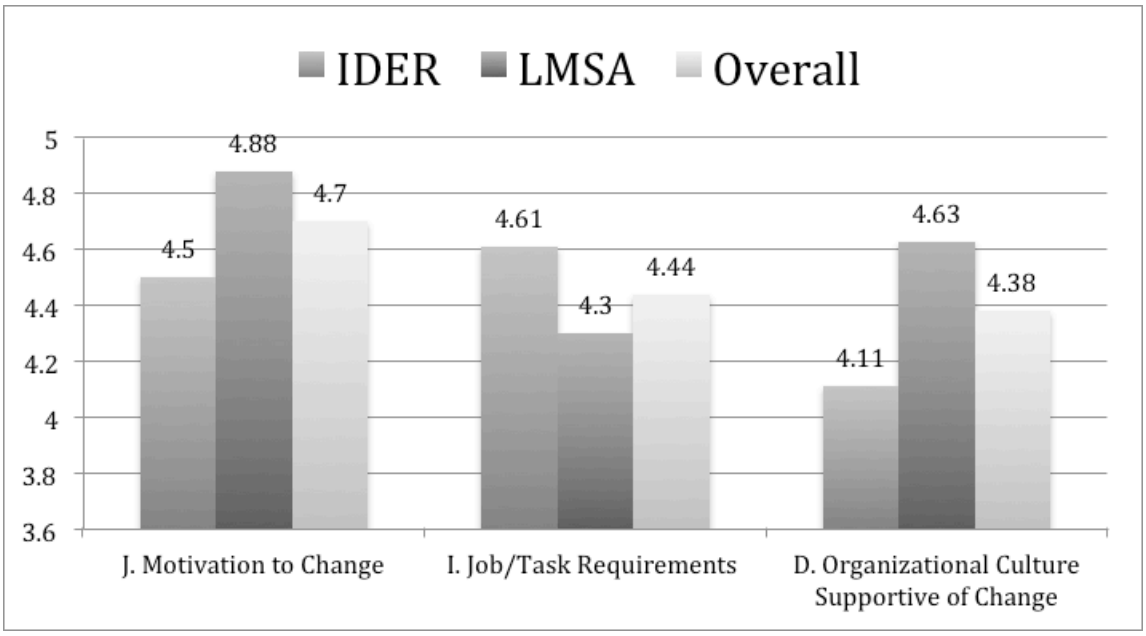

Figure 6 Top three overall change facilitating factors and IDER and LMSA (μ)

Phase Three Interview Discussion

In the interviews with the three senior administrators as part of phase three of the study there was disagreement regarding some of the facilitating factors identified in the first phase of the study. The extent to which people are looking forward to the change to more online learning differed among the interviewees. The CAO interviewed described the excitement that the move generated in some of the faculty: "some faculty members have said that it's given them a new energy around teaching that they had lost for a while and it gave them something different to tackle and just take it on as a new and interesting challenge. It was more of a challenge than they thought it would be." The Teaching and Learning Director described a concern that faculty had for their students at his institution.

> "… if I were gonna take the risk of generalizing, I would say that the standard opinion is that our students need contact with faculty because generally speaking they do not come from educated households. They do not have a great deal of understanding about how to learn. They would crap out on a course online for the most part, most of 'em because they don't have executive function, or the will to learn that way. And they really need another human being there to show them what it means to learn and how you do it. And so the idea of putting that online is not attractive."

This view was in stark contrast to the perspective of the CAO interviewed who was optimistic about the potential for enhancing learning via online techniques, especially in the area of blended learning. This optimism was framed with the

acknowledgement that online learning has evolved:

> "… early on I think online learning was digitized correspondence courses and of course the FEDS even understand there's a difference there. And I think as we learn to use tools to enhance learning we've actually finally realized, albeit, slowly, that online brings a dimension of learning that just was not there before. So it does more than just cover distance."

The Job/Task Requirements factors where the nature of jobs and tasks had to change to accommodate the change to online learning was brought up by the CIO as he discussed the new skills and new ways of thinking that had to be learned by faculty. This was a polar opposite to the perspective of the Teaching and Learning Center Director who noted that many faculty decided not to participate in initiatives such as a common core curriculum online through the university system. Interestingly there was little discussion about individual capacity to change (also under the Job/Task Factor category), with the CIO identifying that "there are some people who literally will just need to retire before they have to teach an online class because, you know, it's just too difficult to make that leap. ". This may be due to the fact that the individuals being interviewed were administrators, rather than primarily serving in a teaching faculty role at their respective institutions.

Organizational culture supportive of the change was another point of disagreement, with a contrasting view of a willingness to try new approaches at the CAO's institution and the perception that the CIO and the Teaching and Learning Center had for their respective institutions. The CAO identified the willingness to try new and different things as part of the institutional culture, whereas the Teaching and Learning

Center Director described online learning as counter to the efforts of the institution to try to attract a "traditional population. And therefore not as much interest in online." These two perspectives fit with the CIO's view that the "philosophy of the schools in the Southeastern State University System are very different. Their attitudes towards online education and the adoption rates in the institution toward online education – the rate at which people embrace it, the level of confidence, the general historical foundation of the university is either being a progressive university or non-progressive university – all of those things come into play". The CIO further described the variation between the categories of institutions within the system: "there's a very large disparity of thought between the research institutions and the non-research institutions. You know I came out of a research institution and I understand that thought I think, but that – so their struggle with it is very different than non-research institutions." Another component of the organizational culture factor is the extent to which experimentation is allowed. There was quite a bit of time spent on the concept by the CAO with acknowledgement from the CIO that the experimentation was the place to start as a first step. The CAO identified the electronic tuition model as beneficial and that allowed the development of a culture at his institution. The idea of further intervention was a source of concern:

> "…coming back to catch up it makes me a little leery about things on what they may have put down as policies and what if that then can become more of a hindrance, but I have really just felt that it's been this almost unstated agenda to increase online learning without anything really specific until we got to the complete college initiative, and even the complete college initiative just – it gave us a lot of leeway and with not a

> lot of guidance to do what we needed to do and then there would be the comments, again, kind of a subtext or informal comments about needing to increase online learning."

He further described the benefit of the financial flexibility provided by the electronic tuition model and how it was useful at the institutional level.

Research Question #3: What are the key change restraining factors within the Southeastern State University System?

A ranking of the key restraining factors by mean score resulted in the following factors: change related systems μ=2.93 (transactional), emotional impact of change μ=3.76 (transactional) and change mission and strategy μ=3.78 (transactional). Kinnear and Roodt describe these factors as follows:

> **Change related systems** measures the extent to which compensation and reward systems support the intended changes and whether sufficient resources are allocated.
>
> **Emotional impact of change** measures the extent to which organization members are emotionally affected by the change.
>
> **Change mission and strategy** measures the degree to which the change vision is shared, communicated and understood (p. 58).
>
> Jople van Rooyen & Partners SA (Pty) Ltd., 2007)

Figure 7 provides a view of how the top three change restraining factors compare against the IDER and LMSA means scores.

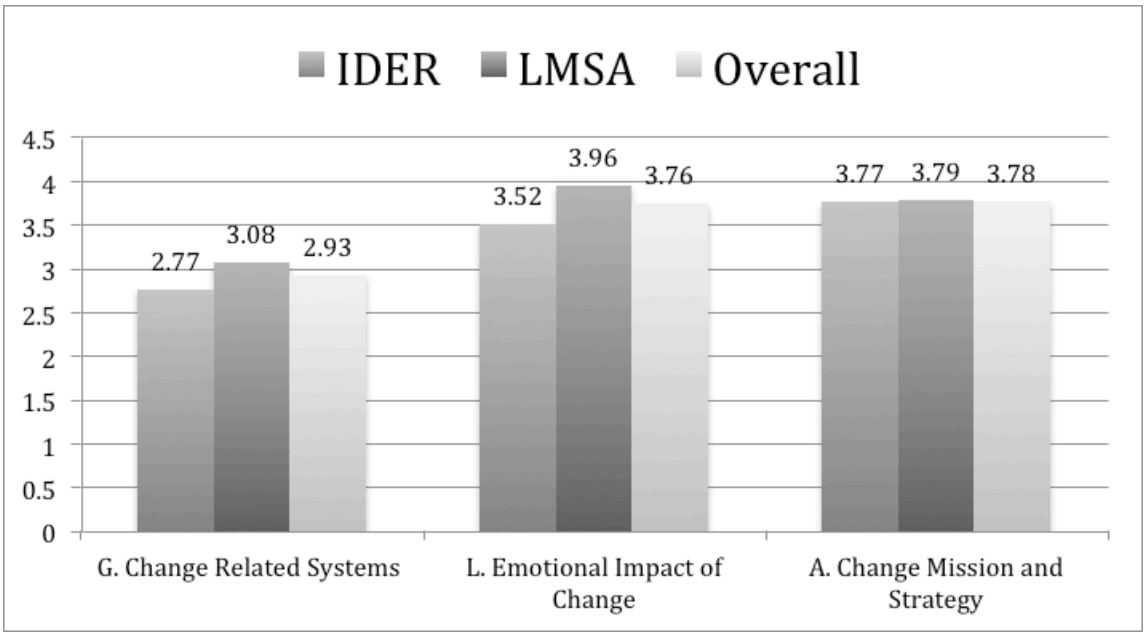

Figure 7 Top three change restraining dimensions and IDER and LMSA (μ)

Phase Three Interview Discussion

With respect to change restraining factors for the growth of online learning, the senior administrators provided some examples of the financial rewards perceived as part of the growth of online learning as well as some of the resource and budget challenges that online learning poses for the system. The factor described as the emotional impact of change was discussed only briefly by the CAO again probably due to the administrative perspective they bring to the interview process. A lack of clarity for the strategy for change was noted by all three interview subjects. The strategy for change is a sub-factor that is a part of the change mission and strategy factor.

With regard to the change related systems there was an interesting disagreement between the CAO and the CIO regarding the financial incentives for online learning programs at the institutions. The CAO saw a MBA collaborative program as a money maker for the institution, whereas the CIO described the collaborative programs as not

as financially beneficial to the institutions as other online programs where the institutions can be more self-reliant. The CAO has also made use of incentive pay for faculty, from the electronic tuition rate that has helped facilitate change on his campus. The Teaching and Learning Center Director acknowledged the role of financial incentives for encouraging faculty participation in hybrid learning workshops where they converted their courses. The CAO identified that "early stages of online learning can actually have a higher cost per delivery than traditional systems, but probably in the long run would have a lower cost of delivery. So you have to allocate resources accordingly and I have not seen that." The limitations of resources and budgeting was also described by the CIO with respect to the additional costs related to online learning delivery for online learning and the challenges that institutions face with their support models. With regard to the knowledge of the purpose of change, the CAO identified an earlier strategic goal for the system to increase capacity (with an implied online learning component) as well as the current complete college initiative that was recently launched by the university system. Overall, all three interview subjects expressed a view that a strategy to increase online learning was not clear. The CAO described a lack of discussion about what issues have been solved at the system level, the CIO described a lack of coordination and highlighted some examples of other university systems that have performed better in the area of online learning coordination.

CHAPTER 6

CONCLUSION

This bounded case study was designed to answer three questions regarding the state of a Southeastern State University System undergoing a change to increase online learning with the system. The three study questions were:

1. Does the Southeastern State University System have a primarily transformational or transactional orientation?
2. What are the key change facilitating factors within the Southeastern State University System?
3. What are the key change restraining factors within the Southeastern State University System?

The methodology employed in this study was designed in the tradition of organizational change and development literature, with the use of both a survey instrument and interviews with individuals familiar with online learning within the university system. There is a change in the environment in which higher education operates. A review of the literature identified factors that are contributing to this change externally from higher education institutions. The factors from the external environment include an increased competition for students from online providers, increased policy pressure to change, as well as demonstrated student demand for online learning. There have been few studies that have examined online learning transformation at the system level within a state university system. Leadership within higher education has sought to support a planned change in support of aligning higher education institutions to the changing environment of higher education. This explanatory mixed methods study was designed to describe the

readiness of a Southeastern State University System to support the growth of online learning. The case study was conducted within the boundaries of a single university system, with a common governing board, as well as a stated goal within the university strategic plan to increase university system capacity, with online learning identified as a method by which to reach this goal. A survey instrument, the Change Readiness Inventory™, was selected due to the alignment of the instrument with existing literature in organization change and development. This instrument was based on a widely accepted causal model for organization change and development, the Burke-Litwin model. Reviewing an entire university system at a point in time can provide insight that may not be possible at a smaller unit of analysis. Other studies have been done on organizations at the large scale. Hofstede et. al has described efforts that have been done in the review of organizational cultures as follows:

> "We do not want to deny that organizational cultures are gestalts, wholes whose flavor can only be completely experienced by insiders and which demand empathy in order to be appreciated by outsiders. However, in a world of hardware and bottom-line figures, a framework allowing one to describe the structure in these gestalts is an asset (Hofstede et. al 1990, p. 313)".

While considering the value of a study an entire system, there are certain limitations that must be considered as part of the analysis.

Research Question #1: Does the Southeastern State University System have a primarily transformational or transactional orientation?

Prior to the study, the researcher anticipated that there would be an overall change readiness orientation of the university system to transactional change, with both the IDER and LMSA agreeing regarding the transactional nature of the university system. The key change-restraining factor identified by the researcher prior to the study was the change related systems dimension. Factors that were anticipated to be change-facilitating factors within the system were the change mission and strategy dimension as well as the external environment dimension. The raw scores on the CRI™ demonstrated that there is a slight transformational orientation (μ=4.11) for the university system. Only one dimension, change mission and strategy (μ=3.78), had a slight change resisting score within the transformational category. The transactional category score was slightly below the scale median of 4 (μ=3.98 was the raw score average). The dimensions that were below the scale media of 4 within the transactional categories were organizational structure (μ=3.93), change related systems (μ=2.93), work unit climate (μ=3.90), and emotional impact of change (μ=3.76). Question #1 for this study was: "Does the Southeastern State University System have a primarily transformational or transactional orientation?" Based on the data collected in the first two phases of the study there was not sufficient data to make a determination regarding the orientation of the university system. The views presented during the third phase interviews of administrators indicated that there was a transactional orientation towards online learning in the system, with a focus on incremental change on the part of the university system. This incremental change and a lack of centrally driven mission, strategy, and leadership was seen by the CAO as an enabling factor due to the flexibility provided to institutions. The

CIO's discussion about online learning included a description of the need for more centralized planning and overall leadership in online learning, while the Teaching and Learning Center Director described a lack of awareness of any system level push for online learning.

Research Question #2: What are the key change facilitating factors within the Southeastern State University System?

Based on the mean scores on the Change Readiness Inventory (CRI™), the top three change enabling factors were: motivation to change (μ=4.70), job/task requirements (μ=4.44), and organizational culture supportive of change (μ=4.38). In the interviews with the senior administrators as part of the third phase of the study the extent to which institutions in the system were motivated to change towards online was mixed. The CAO described the excitement at his institution and the nature of the challenge made his faculty energized. This conflicted with the perspective that the Teaching and Learning Center held regarding a fear that online learning would harm their population of students. The CIO's observations about a mix of views regarding online learning from institution to institution aligns well with this disconnect and may indicate a variation in views across the university system. The Teaching and Learning Center Director described how a major initiative from the system that was focused on developing a core online curriculum was rejected by faculty on the campus, presumably based on their view that there would be additional work for those involved. The CIO described the difficulty for some faculty to adjust to online learning, due to the difficulty faculty would have with changing to online learning. The degree to which the organizational culture was supportive of change was a point of disagreement between the senior

administrators. Just as the motivation of change was limited at the Teaching and Learning Center Director's institution, the Director identified the idea of moving more courses online as counter to the institutional goal of becoming more traditional and residential. This was in line with the perspective of the CIO that described the variation in institutional categories, specifically between research and non-research institutions. The Teaching and Learning Center Director based at research institution may have a different experience than one at a non-research institution. This is a topic for future investigation.

Research Question #3: What are the key change restraining factors within the Southeastern State University System?

Based on the CRI™ scores, the top three change resisting factors were: change related systems (μ=2.93), emotional impact of change (μ=3.76), and change mission and strategy (μ=3.78). In the interviews with the senior administrators there was a discussion of the role that compensation and funding models played in the change towards online learning. The CAO described the financial incentives provided by collaborative efforts within the system as a benefit, which contrasted with the view that the funding models were insufficient by the CIO. The Teaching and Learning Center Director acknowledged the role that financial incentives made on faculty participating in a hybrid course development program, but also identified the lack of formal incentive structures within his institution. Very little was discussed regarding the emotional impact of change during the interviews, with some discussion of individual faculty resistance and the need for a change in the faculty role brought up in discussion. There was a great deal of consensus regarding the perceive lack of a change mission of strategy, but there was a

sense that things were improving, A Southeastern State University System initiative to increase the number of college graduates was acknowledged by the CAO and CIO as a way that the discussion of online learning has moved to a more active discussion within the system. There was some unease on the part of the CAO regarding a new interest in online learning from the university system as he perceived that the individual flexibility for each campus has been effective in allowing for growth in online learning at institutions.

Differences between groups

While the overall response scores are informative, it is also interesting to review how the two groups of respondents differed in their response. Two different groups were invited to complete the CRI™. As described previously, Institutional Distance Education Representatives (IDERs) are appointed by the chief academic officer for each institution within the university system and they are the primary point of contact between the central system office for issues regarding distance education. In contrast, the Learning Management System Administrators (LMSAs) are the contact for the institutions regarding matters related to the learning management system. In general, LMSAs primarily deal with issues related to the LMS technology, whereas the IDERs deal with administrative and policy issues in a broader context (which also may include at times the learning management system).

Other Findings From This Study

Disconnects between the IDER and LMSA Groups

The largest differences between the IDER and LMSA groups appeared in the organizational structure dimension. The IDER group scored μ=3.39, with the LMSA

group scoring μ=4.39. A closer look at the individual items on the CRI™ revealed 4 items on which the IDEA and LMSA groups had mean scores that were significant at the 95% level. The items that were questions dealing with:

- The flexibility of the business structure for change
- Decision making across all levels of the business
- Flexibility in job descriptions
- Ease of change of work procedures

On these four items related to organizational structure, the IDER mean was significantly lower (in the change resisting range) compared to higher LMSA ratings. While the sample sizes were small in this study, this is of note, and should be explored in future studies. Based on the frequency counts from the interview data the appears to be a conflict regarding organizational structure dimension within the IDER group that was interviewed, and it is of note that organizational structure was included in the top restraining and facilitating dimension list from the interviews.

Implications for Future Research

The findings for this study provide many possible avenues for future research. The question of the orientation of the university system (transformational or transactional) did not result in a strong orientation in either direction. The real value of the instrument appears to be at the level of the dimensions within the transformational and transactional categories. The key change facilitating factors in this particular context inform future research in other systems, or even research within individual units with the university system. There is value in knowing the enabling and facilitating factors when considering a planned change for an organization. A researcher would be able to tackle

the dimensions identified by this instrument. By using the tools and concepts of organizational change and development, or even human performance technology, a researcher would have a starting point for enabling change. This study provides an approach for investigating the current state of a university system. While future researchers may not use the same proprietary instrument, future researchers may base their university focused instruments on the conceptual foundation provided by the Burke-Litwin Model. With respect to the specific findings of the study, a major disconnect between the two groups in the study was the organizational structure dimension. The difference in the perception of the university system's organizational structure between the IDER and LMSA groups merits further investigation. Overall there was more contentment with the existing structure from the LMSA group. With no interview data with which to compare it is difficult to speculate the cause. One theory could be that there is a longer history of technology roles within the system, whereas the IDER group is not clearly aligned with a distinct leadership structure. The one example related to organizational structure from the IDER interview dealt with a move of the online learning organization into academic affairs. This is insufficient data to make an informed judgment, but based on the researcher's personal experience this may be related to the question. There were also interesting disconnects between the perception of the financial resources and compensation within the system. The conversation with one interview subject regarding their frustration regarding the motivational factors for online learning growth is worth exploring. Financial incentives have driven some of the growth in online learning, both direct (payment to faculty) as well as in less individual ways (enrollment growth). This concern that was expressed in the interview may

indicate some internal conflict with respect to the purpose of online learning, and the broader social implications. Also at an emotional level, the individual faculty emotional impact of online learning growth was something that was not part of the study design. This is a factor that may be worth exploring in detail, as this has real implications for resistance at the personal level. There are existing measures for personal acceptance of innovation and change. Exploring these issues would provide another level of analysis that could help with organizational diagnostics, and change plans for large-scale organizational change. This study was focused on the first stage of a planned change, which includes a description of the current state of the system. Making use of these diagnostic tools and taking the next steps towards making a change within the system would be an extremely worthy action research project. A description of the means employed for this change, as well as ways to ensure the change persists would be valuable for future researchers. While the instrument used for this study, the CRI™ was useful, it may be beneficial to develop an instrument based on the Burke-Litwin model that is focused on higher education, with terminology, as well as items that are particular to the higher education environment. The types of interventions necessary to make changes will most likely differ in a higher education institution. This also may be true between university systems, as well as system characteristics. There may be key factors that may not be present in some systems that are in others. For example, the role of the legislature, board governance structure, unions, localized versus centralized control of institutions, or even communication methods within the institutional setting may vary. The lack of response from the LMSA group is perplexing in this study, so a further investigation of why this group did not participate would be a worthy follow-up study.

Are these issues related to the role of the LMSA staff at the institutional or system level? The IDER positions are appointed by the chief academic officer of the institution, and may be more connected to the academic strategic discussions within their institutions or the system. Does the LMSA group feel qualified to answer the questions asked in the CRI™? Further study is needed to find out the reasons for a lack of response. There may be differences in communication channels and the messages received by the LMSA versus the IDER group. The role of flexibility within the institutions and the overall system would be worth exploring. One of the items discussed in the interviews was that there was too much flexibility at the institutional level. A few of the interviews included an indication that there was a desire for more central leadership in the area of online learning. The recent hiring of an administrator at the system level may be an indication of future plans for more central leadership. The extent localized flexibility helps or hinders a system wide move towards a strategic goal is worth exploring in both a university system environment as well as in large organizations in general.

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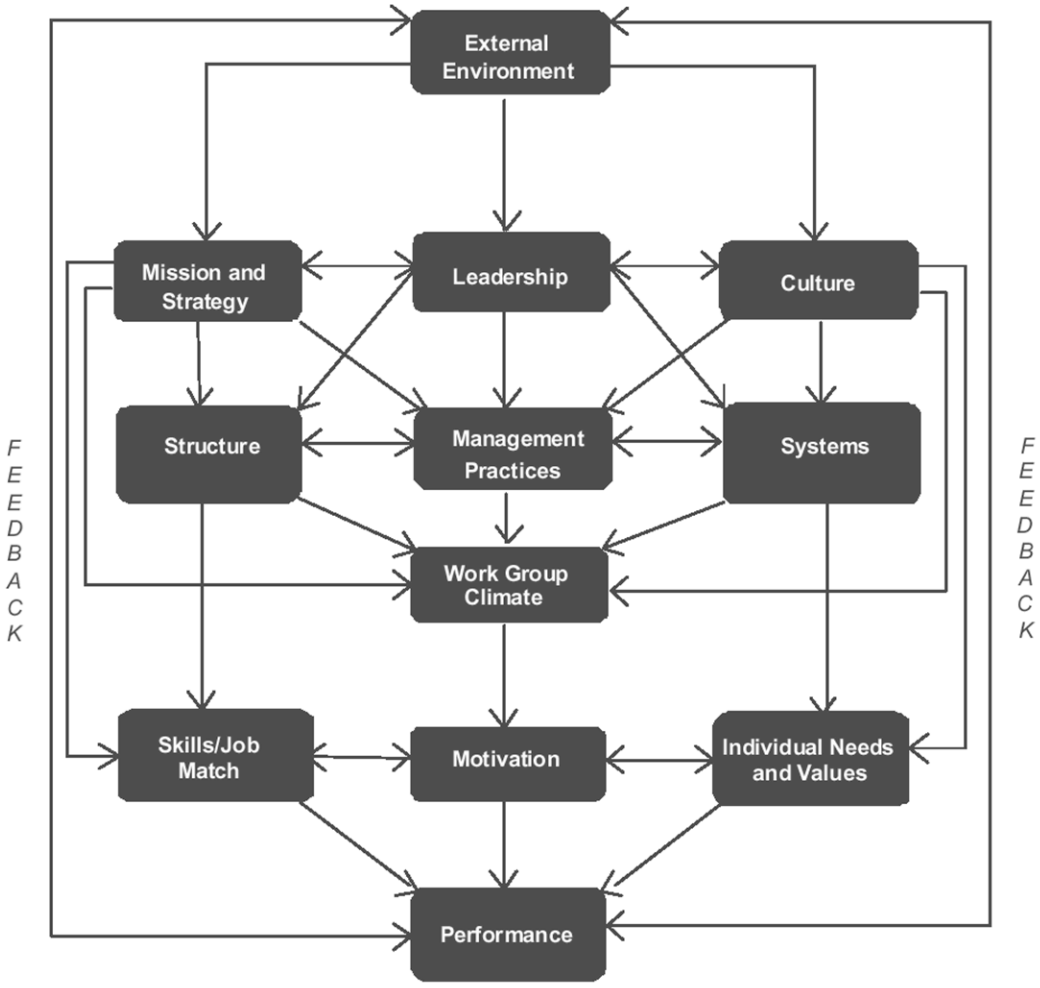
APPENDIXES

APPENDIX A

Burke-Litwin Model of Organizational Change and Development



APPENDIX B

Burke-Litwin model of Organizational Performance and Change as defined for the CRI™

Transformational Category

This category of dimensions measures the degree to which the organization responds to the external change demands and consists of the following four dimensions:

- The **change mission and strategy** measures the degree to which the change mission and strategy is necessary, clearly understood and administered with ease.
- The **external environment** measures the degree to which the impact of external forces is understood and considered in the change strategy.
- **Change leadership** measures the degree to which the change vision is shared, communicated and understood.
- The **Organizational culture supportive of change** measures the degree to which organizational members are allowed to participate and influence the change process, or to experiment with alternative ideas.

Transactional Category

This category of dimensions refers to the degree to which the change process is planned, structured and executed and consists of the eight following dimensions:

- **Organizational structure** measures the extent to which the structure and policies in the organization are flexible to accommodate the change.
- **Change management** practices measures the extent to which the change practices are championed by key organizational members, other members involved in the process and whether the process is structured and planned.
- **Change related systems** measures the extent to which compensation and reward systems support the intended changes and whether sufficient resources are allocated.
- **Work Unit climate** measures the degree to which members support the change and are affected by the change processes.
- **Job/task requirements** measure the degree to which organizational members' work practices are affected by the change and the changes they have to make in this respect.

- **Motivation to change** measure the degree to which organization members look forward to and are inspired by the changes.
- **Personal impact of change** measures the extent to which organization members are personally affected by the changes, or how their circumstances and benefits may be affected.
- **Emotional impact** of change measures the degree to which the organization members are emotionally affected by the change (p9-10)

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APPENDIX C

t-test between IDER and LMSA groups by dimension

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TRANSFORMATIONAL	Equal variances assumed	8.013	.014	-.667	13	.517	-.29287	.43941	-1.24217	.65642
	Equal variances not assumed			-.640	8.874	.538	-.29287	.45746	-1.32995	.74421
TRANSACTIONAL	Equal variances assumed	2.365	.148	-1.233	13	.239	-.36110	.29281	-.99367	.27147
	Equal variances not assumed			-1.176	8.133	.273	-.36110	.30703	-1.06711	.34491

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
A_MEAN	Equal variances assumed	6.206	.027	-.220	13	.829	-.15873	.72031	-1.71487	1.39741
	Equal variances not assumed			-.211	8.517	.838	-.15873	.75246	-1.87576	1.55829
B_MEAN	Equal variances assumed	.639	.438	.207	13	.839	.09439	.45637	-.89154	1.08032
	Equal variances not assumed			.204	11.512	.842	.09439	.46361	-.92050	1.10928
C_MEAN	Equal variances assumed	1.392	.259	-1.267	13	.227	-.58929	.46509	-1.59404	.41547
	Equal variances not assumed			-1.236	10.523	.243	-.58929	.47693	-1.64485	.46628
D_Mean	Equal variances assumed	.393	.541	-1.096	13	.293	-.51786	.47229	-1.53818	.50247
	Equal variances not assumed			-1.066	10.190	.311	-.51786	.48579	-1.59755	.56183
E_Mean	Equal variances assumed	.114	.741	-2.884	13	.013	-.99777	.34594	-1.74513	-.25040
	Equal variances not assumed			-2.828	11.125	.016	-.99777	.35277	-1.77315	-.22239
F_Mean	Equal variances assumed	1.738	.210	-.116	13	.909	-.05238	.45144	-1.02765	.92289
	Equal variances not assumed			-.113	10.152	.912	-.05238	.46450	-1.08526	.98049
G_Mean	Equal variances assumed	1.353	.266	-.433	13	.672	-.30357	.70129	-1.81862	1.21148
	Equal variances not assumed			-.440	12.866	.667	-.30357	.68921	-1.79410	1.18695
H_Mean	Equal variances assumed	2.518	.137	-1.120	13	.283	-.44866	.40053	-1.31396	.41664
	Equal variances not assumed			-1.071	8.407	.314	-.44866	.41886	-1.40647	.50915

I_Mean	Equal variances assumed	1.681	.217	1.003	13	.334	.31494	.31398	-.36337	.99324
	Equal variances not assumed			.964	8.917	.361	.31494	.32674	-.42525	1.05512
J_Mean	Equal variances assumed	.726	.410	-.805	13	.436	-.37500	.46605	-1.38184	.63184
	Equal variances not assumed			-.809	12.949	.433	-.37500	.46336	-1.37642	.62642
K_Mean	Equal variances assumed	2.585	.132	-1.648	13	.123	-.59184	.35921	-1.36787	.18419
	Equal variances not assumed			-1.572	8.155	.154	-.59184	.37658	-1.45738	.27371
L_Mean	Equal variances assumed	.237	.635	-1.193	13	.254	-.43452	.36415	-1.22123	.35218
	Equal variances not assumed			-1.174	11.482	.264	-.43452	.37004	-1.24482	.37577

APPENDIX D

t-test for all items

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
A1	Equal variances assumed	.525	.482	.875	13	.398	.67857	.77585	-.99755	2.35469
	Equal variances not assumed			.865	11.965	.404	.67857	.78436	-1.03096	2.38810
A2	Equal variances assumed	2.544	.135	-.208	13	.839	-.23214	1.11864	-2.64881	2.18453
	Equal variances not assumed			-.201	10.032	.844	-.23214	1.15226	-2.79842	2.33414
A3	Equal variances assumed	7.231	.019	.064	13	.950	.07143	1.10922	-2.32490	2.46776
	Equal variances not assumed			.062	8.680	.952	.07143	1.15691	-2.56045	2.70330
A4	Equal variances assumed	4.027	.066	.000	13	1.000	.00000	1.13025	-2.44176	2.44176
	Equal variances not assumed			.000	9.962	1.000	.00000	1.16496	-2.59705	2.59705

A5	Equal variances assumed	7.008	.020	-.474	13	.644	-.42857	.90459	-2.38283	1.52568
	Equal variances not assumed			-.458	9.657	.657	-.42857	.93496	-2.52187	1.66473
A6	Equal variances assumed	.337	.571	.344	13	.736	.28571	.82993	-1.50723	2.07866
	Equal variances not assumed			.341	12.164	.739	.28571	.83707	-1.53537	2.10680
A7	Equal variances assumed	2.717	.123	-.398	13	.697	-.33929	.85288	-2.18183	1.50326
	Equal variances not assumed			-.390	11.016	.704	-.33929	.87062	-2.25516	1.57659
A8	Equal variances assumed	.006	.942	-1.580	13	.138	-1.05357	.66696	-2.49445	.38731
	Equal variances not assumed			-1.582	12.813	.138	-1.05357	.66584	-2.49417	.38703
A9	Equal variances assumed	.383	.547	-.606	13	.555	-.41071	.67790	-1.87523	1.05380
	Equal variances not assumed			-.609	12.945	.553	-.41071	.67409	-1.86763	1.04620
A10	Equal variances assumed	.131	.723	.230	13	.822	.17857	.77585	-1.49755	1.85469
	Equal variances not assumed			.230	12.676	.822	.17857	.77673	-1.50383	1.86097
A11	Equal variances assumed	5.105	.042	.117	13	.908	.10714	.91189	-1.86287	2.07715

	Equal variances not assumed			.113	9.403	.912	.10714	.94469	-2.01602	2.23030
A12	Equal variances assumed	.003	.960	1.381	13	.191	1.16071	.84072	-.65554	2.97697
	Equal variances not assumed			1.395	13.000	.186	1.16071	.83216	-.63707	2.95849
A13	Equal variances assumed	.026	.875	-.368	13	.719	-.26786	.72815	-1.84092	1.30520
	Equal variances not assumed			-.370	12.948	.717	-.26786	.72397	-1.83253	1.29682
B14	Equal variances assumed	.148	.707	1.379	13	.191	.89286	.64765	-.50630	2.29201
	Equal variances not assumed			1.384	12.894	.190	.89286	.64517	-.50210	2.28782
B15	Equal variances assumed	.210	.655	-.319	13	.755	-.17857	.55989	-1.38815	1.03101
	Equal variances not assumed			-.311	10.547	.762	-.17857	.57403	-1.44864	1.09150
B16	Equal variances assumed	1.177	.298	-.368	13	.719	-.26786	.72815	-1.84092	1.30520
	Equal variances not assumed			-.358	10.298	.728	-.26786	.74823	-1.92850	1.39279
B17	Equal variances assumed	.291	.599	-.308	13	.763	-.21429	.69479	-1.71529	1.28671
	Equal variances not assumed			-.304	11.499	.767	-.21429	.70590	-1.75978	1.33121

B18	Equal variances assumed	5.663	.033	-.545	13	.595	-.26786	.49166	-1.33003	.79432
	Equal variances not assumed			-.523	8.828	.614	-.26786	.51208	-1.42970	.89398
B19	Equal variances assumed	1.820	.200	.115	13	.910	.08929	.77703	-1.58939	1.76797
	Equal variances not assumed			.112	10.179	.913	.08929	.79933	-1.68750	1.86607
B20	Equal variances assumed	.590	.456	1.046	13	.315	.60714	.58054	-.64704	1.86133
	Equal variances not assumed			1.052	12.957	.312	.60714	.57698	-.63978	1.85406
C21	Equal variances assumed	2.126	.169	-1.402	13	.184	-1.08929	.77703	-2.76797	.58939
	Equal variances not assumed			-1.363	10.179	.202	-1.08929	.79933	-2.86607	.68750
C22	Equal variances assumed	1.864	.195	-1.011	13	.330	-.85714	.84747	-2.68800	.97371
	Equal variances not assumed			-.984	10.288	.348	-.85714	.87092	-2.79034	1.07605
C23	Equal variances assumed	2.598	.131	-.452	13	.658	-.33929	.75005	-1.95967	1.28110
	Equal variances not assumed			-.441	10.550	.668	-.33929	.76896	-2.04061	1.36204
C24	Equal variances assumed	.297	.595	-.175	13	.864	-.12500	.71592	-1.67164	1.42164

	Equal variances not assumed			-.172	11.641	.866	-.12500	.72631	-1.71293	1.46293
C25	Equal variances assumed	3.538	.083	-1.249	13	.234	-.85714	.68626	-2.33973	.62544
	Equal variances not assumed			-1.202	9.077	.260	-.85714	.71309	-2.46820	.75392
C26	Equal variances assumed	4.315	.058	-1.991	13	.068	-1.05357	.52915	-2.19673	.08959
	Equal variances not assumed			-1.885	7.435	.099	-1.05357	.55892	-2.35969	.25255
C27	Equal variances assumed	2.456	.141	-.026	13	.980	-.01786	.69928	-1.52855	1.49284
	Equal variances not assumed			-.025	9.472	.981	-.01786	.72397	-1.64322	1.60751
C28	Equal variances assumed	.814	.383	-.574	13	.576	-.32143	.55989	-1.53101	.88815
	Equal variances not assumed			-.581	12.986	.571	-.32143	.55290	-1.51603	.87317
C29	Equal variances assumed	.071	.794	-.416	13	.684	-.25000	.60048	-1.54726	1.04726
	Equal variances not assumed			-.410	11.523	.689	-.25000	.60994	-1.58506	1.08506
C30	Equal variances assumed	.751	.402	-1.192	13	.255	-.71429	.59925	-2.00889	.58032
	Equal variances not assumed			-1.219	12.630	.245	-.71429	.58612	-1.98430	.55573

C31	Equal variances assumed	.119	.736	-1.878	13	.083	-1.25000	.66558	-2.68789	.18789
	Equal variances not assumed			-1.877	12.709	.084	-1.25000	.66592	-2.69199	.19199
C32	Equal variances assumed	.330	.576	-.184	13	.857	-.19643	1.07023	-2.50851	2.11565
	Equal variances not assumed			-.182	12.007	.859	-.19643	1.08145	-2.55256	2.15971
D33	Equal variances assumed	1.054	.323	-.088	13	.931	-.07143	.80836	-1.81779	1.67494
	Equal variances not assumed			-.086	9.853	.933	-.07143	.83401	-1.93349	1.79063
D34	Equal variances assumed	.791	.390	-.743	13	.470	-.46429	.62451	-1.81346	.88488
	Equal variances not assumed			-.729	11.063	.481	-.46429	.63721	-1.86581	.93724
D35	Equal variances assumed	.412	.532	-1.192	13	.255	-.71429	.59925	-2.00889	.58032
	Equal variances not assumed			-1.160	10.288	.272	-.71429	.61583	-2.08126	.65269
D36	Equal variances assumed	.903	.359	-.931	13	.369	-.50000	.53709	-1.66030	.66030
	Equal variances not assumed			-.882	7.493	.405	-.50000	.56695	-1.82293	.82293
D37	Equal variances assumed	1.577	.231	-.965	13	.352	-.76786	.79575	-2.48697	.95126

	Equal variances not assumed			-.990	12.387	.341	-.76786	.77557	-2.45185	.91614
D38	Equal variances assumed	1.782	.205	-1.129	13	.279	-.71429	.63270	-2.08116	.65259
	Equal variances not assumed			-1.093	9.756	.301	-.71429	.65335	-2.17500	.74643
D39	Equal variances assumed	.797	.388	.171	13	.867	.08929	.52356	-1.04179	1.22036
	Equal variances not assumed			.165	9.496	.873	.08929	.54193	-1.12696	1.30553
D40	Equal variances assumed	2.925	.111	-1.642	13	.125	-1.00000	.60900	-2.31566	.31566
	Equal variances not assumed			-1.572	8.512	.152	-1.00000	.63621	-2.45188	.45188
E41	Equal variances assumed	1.683	.217	-.266	13	.794	-.21429	.80472	-1.95277	1.52420
	Equal variances not assumed			-.258	9.896	.802	-.21429	.82993	-2.06611	1.63754
E42	Equal variances assumed	.516	.485	-3.176	13	.007	-1.26786	.39914	-2.13016	-.40556
	Equal variances not assumed			-3.220	12.973	.007	-1.26786	.39380	-2.11880	-.41692
E43	Equal variances assumed	.189	.671	-1.833	13	.090	-1.32143	.72078	-2.87858	.23572
	Equal variances not assumed			-1.876	12.578	.084	-1.32143	.70440	-2.84839	.20554

E44	Equal variances assumed	1.019	.331	-2.159	13	.050	-1.57143	.72789	-3.14394	.00109
	Equal variances not assumed			-2.137	12.021	.054	-1.57143	.73540	-3.17342	.03056
E45	Equal variances assumed	.082	.779	-3.059	13	.009	-1.33929	.43783	-2.28516	-.39341
	Equal variances not assumed			-3.006	11.355	.012	-1.33929	.44548	-2.31605	-.36252
E46	Equal variances assumed	.058	.813	-.463	13	.651	-.17857	.38555	-1.01149	.65435
	Equal variances not assumed			-.460	12.238	.654	-.17857	.38850	-1.02323	.66608
E47	Equal variances assumed	.760	.399	-.850	13	.411	-.55357	.65133	-1.96068	.85354
	Equal variances not assumed			-.826	10.132	.428	-.55357	.67030	-2.04445	.93731
E48	Equal variances assumed	.384	.546	-2.600	13	.022	-1.53571	.59060	-2.81162	-.25981
	Equal variances not assumed			-2.655	12.710	.020	-1.53571	.57845	-2.78829	-.28314
F49	Equal variances assumed	4.522	.053	-.776	13	.452	-.48214	.62126	-1.82429	.86001
	Equal variances not assumed			-.741	8.305	.479	-.48214	.65034	-1.97230	1.00802
F50	Equal variances assumed	1.376	.262	-.519	13	.612	-.30357	.58465	-1.56662	.95948

	Equal variances not assumed			-.510	11.325	.620	-.30357	.59503	-1.60865	1.00151
F51	Equal variances assumed	.010	.921	.725	13	.481	.51786	.71386	-1.02434	2.06005
	Equal variances not assumed			.728	12.875	.480	.51786	.71153	-1.02082	2.05653
F52	Equal variances assumed	1.501	.242	-1.097	13	.293	-.82143	.74882	-2.43916	.79630
	Equal variances not assumed			-1.068	10.361	.310	-.82143	.76903	-2.52689	.88403
F53	Equal variances assumed	3.272	.094	.179	13	.861	.14286	.79737	-1.57975	1.86546
	Equal variances not assumed			.172	9.030	.867	.14286	.82890	-1.73129	2.01701
F54	Equal variances assumed	.096	.762	.743	13	.470	.46429	.62451	-.88488	1.81346
	Equal variances not assumed			.751	13.000	.466	.46429	.61825	-.87135	1.79993
F55	Equal variances assumed	2.515	.137	-.757	13	.463	-.51786	.68438	-1.99638	.96067
	Equal variances not assumed			-.728	9.018	.485	-.51786	.71153	-2.12694	1.09123
F56	Equal variances assumed	13.756	.003	.186	13	.855	.16071	.86488	-1.70774	2.02917
	Equal variances not assumed			.176	7.391	.865	.16071	.91398	-1.97751	2.29894

F57	Equal variances assumed	2.126	.169	-.437	13	.670	-.33929	.77703	-2.01797	1.33939
	Equal variances not assumed			-.424	10.179	.680	-.33929	.79933	-2.11607	1.43750
F58	Equal variances assumed	.391	.542	-1.308	13	.214	-.85714	.65555	-2.27338	.55909
	Equal variances not assumed			-1.315	12.938	.211	-.85714	.65205	-2.26650	.55221
F59	Equal variances assumed	.163	.693	-.512	13	.617	-.33929	.66253	-1.77060	1.09203
	Equal variances not assumed			-.514	12.856	.616	-.33929	.66071	-1.76830	1.08972
F60	Equal variances assumed	2.094	.172	.503	13	.623	.41071	.81584	-1.35180	2.17323
	Equal variances not assumed			.489	10.173	.635	.41071	.83929	-1.45502	2.27645
F61	Equal variances assumed	.008	.931	.115	13	.910	.08929	.77703	-1.58939	1.76797
	Equal variances not assumed			.115	12.759	.910	.08929	.77667	-1.59183	1.77040
F62	Equal variances assumed	.441	.518	.748	13	.468	.55357	.74017	-1.04548	2.15262
	Equal variances not assumed			.742	12.228	.472	.55357	.74595	-1.06836	2.17551
F63	Equal variances assumed	.301	.592	.779	13	.450	.53571	.68733	-.94918	2.02061

	Equal variances not assumed			.775	12.413	.453	.53571	.69099	-.96428	2.03571
G64	Equal variances assumed	.516	.485	-.367	13	.719	-.32143	.87566	-2.21317	1.57032
	Equal variances not assumed			-.366	12.622	.720	-.32143	.87749	-2.22290	1.58005
G65	Equal variances assumed	2.362	.148	.284	13	.781	.25000	.87901	-1.64899	2.14899
	Equal variances not assumed			.277	10.525	.787	.25000	.90139	-1.74493	2.24493
G66	Equal variances assumed	.049	.828	-1.215	13	.246	-.98214	.80859	-2.72900	.76471
	Equal variances not assumed			-1.225	12.989	.242	-.98214	.80198	-2.71487	.75058
G67	Equal variances assumed	.331	.575	-1.062	13	.308	-.83929	.79018	-2.54637	.86780
	Equal variances not assumed			-1.075	12.988	.302	-.83929	.78049	-2.52558	.84701
G68	Equal variances assumed	.211	.654	.535	13	.602	.37500	.70138	-1.14023	1.89023
	Equal variances not assumed			.538	12.958	.600	.37500	.69704	-1.13136	1.88136
H69	Equal variances assumed	.010	.921	-1.066	13	.306	-.80357	.75396	-2.43241	.82527
	Equal variances not assumed			-1.060	12.427	.309	-.80357	.75782	-2.44846	.84131

H70	Equal variances assumed	1.735	.211	-1.580	13	.138	-1.05357	.66696	-2.49445	.38731
	Equal variances not assumed			-1.627	12.084	.130	-1.05357	.64772	-2.46374	.35659
H71	Equal variances assumed	1.493	.244	-2.636	13	.021	-1.64286	.62333	-2.98948	-.29623
	Equal variances not assumed			-2.717	11.983	.019	-1.64286	.60469	-2.96057	-.32515
H72	Equal variances assumed	3.166	.099	.168	13	.869	.12500	.74414	-1.48261	1.73261
	Equal variances not assumed			.160	7.971	.877	.12500	.78158	-1.67845	1.92845
H73	Equal variances assumed	.982	.340	-.087	13	.932	-.08929	1.02814	-2.31045	2.13188
	Equal variances not assumed			-.085	10.933	.934	-.08929	1.05034	-2.40279	2.22422
H74	Equal variances assumed	6.865	.021	.368	13	.719	.33929	.92252	-1.65369	2.33226
	Equal variances not assumed			.353	8.745	.733	.33929	.96158	-1.84568	2.52425
H75	Equal variances assumed	.800	.387	-.589	13	.566	-.42857	.72789	-2.00109	1.14394
	Equal variances not assumed			-.570	9.790	.581	-.42857	.75142	-2.10771	1.25056
H76	Equal variances assumed	.026	.874	-.034	13	.974	-.03571	1.06385	-2.33402	2.26259

	Equal variances not assumed			-.034	12.726	.974	-.03571	1.06406	-2.33953	2.26810
I77	Equal variances assumed	.543	.474	2.081	13	.058	1.41071	.67790	-.05380	2.87523
	Equal variances not assumed			2.093	12.945	.057	1.41071	.67409	-.04620	2.86763
I78	Equal variances assumed	.327	.577	1.316	13	.211	.89286	.67872	-.57342	2.35913
	Equal variances not assumed			1.294	11.473	.221	.89286	.68976	-.61769	2.40341
I79	Equal variances assumed	3.894	.070	.212	13	.835	.12500	.58966	-1.14888	1.39888
	Equal variances not assumed			.202	7.831	.845	.12500	.62022	-1.31061	1.56061
I80	Equal variances assumed	.873	.367	1.367	13	.195	.69643	.50931	-.40386	1.79672
	Equal variances not assumed			1.402	12.464	.185	.69643	.49691	-.38179	1.77464
I81	Equal variances assumed	.070	.796	1.059	13	.309	.98214	.92729	-1.02114	2.98543
	Equal variances not assumed			1.053	12.400	.312	.98214	.93240	-1.04214	3.00642
I82	Equal variances assumed	.014	.907	-1.306	13	.214	-1.05357	.80677	-2.79649	.68935
	Equal variances not assumed			-1.299	12.423	.217	-1.05357	.81095	-2.81381	.70667

I83	Equal variances assumed	.014	.909	-.197	13	.847	-.10714	.54389	-1.28215	1.06787
	Equal variances not assumed			-.197	12.609	.847	-.10714	.54515	-1.28860	1.07432
I84	Equal variances assumed	.810	.384	1.087	13	.297	.55357	.50931	-.54672	1.65386
	Equal variances not assumed			1.064	10.931	.310	.55357	.52031	-.59252	1.69966
I85	Equal variances assumed	5.312	.038	.786	13	.446	.46429	.59060	-.81162	1.74019
	Equal variances not assumed			.817	11.063	.431	.46429	.56807	-.78516	1.71373
I86	Equal variances assumed	1.238	.286	.466	13	.649	.30357	.65133	-1.10354	1.71068
	Equal variances not assumed			.479	12.256	.640	.30357	.63378	-1.07413	1.68127
I87	Equal variances assumed	.067	.800	-1.205	13	.250	-.80357	.66696	-2.24445	.63731
	Equal variances not assumed			-1.207	12.813	.249	-.80357	.66584	-2.24417	.63703
J88	Equal variances assumed	1.834	.199	-.382	13	.708	-.30357	.79390	-2.01868	1.41154
	Equal variances not assumed			-.369	9.479	.720	-.30357	.82188	-2.14858	1.54144
J89	Equal variances assumed	.001	.971	-1.275	13	.225	-.87500	.68653	-2.35816	.60816

	Equal variances not assumed			-1.248	10.942	.238	-.87500	.70130	-2.41955	.66955
J90	Equal variances assumed	4.848	.046	-.535	13	.602	-.37500	.70138	-1.89023	1.14023
	Equal variances not assumed			-.552	11.889	.591	-.37500	.67975	-1.85757	1.10757
J91	Equal variances assumed	.344	.568	-1.017	13	.328	-.58929	.57959	-1.84142	.66284
	Equal variances not assumed			-1.036	12.802	.319	-.58929	.56873	-1.81987	.64130
J92	Equal variances assumed	.024	.880	.179	13	.861	.07143	.39868	-.78987	.93273
	Equal variances not assumed			.179	12.575	.861	.07143	.39983	-.79533	.93819
J93	Equal variances assumed	.234	.636	-.463	13	.651	-.17857	.38555	-1.01149	.65435
	Equal variances not assumed			-.460	12.238	.654	-.17857	.38850	-1.02323	.66608
K94	Equal variances assumed	1.853	.197	.021	13	.983	.01786	.83368	-1.78321	1.81892
	Equal variances not assumed			.021	9.959	.984	.01786	.85931	-1.89787	1.93359
K95	Equal variances assumed	3.105	.102	-.394	13	.700	-.25000	.63387	-1.61938	1.11938
	Equal variances not assumed			-.410	11.111	.690	-.25000	.60994	-1.59083	1.09083

K96	Equal variances assumed	2.478	.139	-.950	13	.359	-.35714	.37588	-1.16919	.45490
	Equal variances not assumed			-.918	9.501	.381	-.35714	.38905	-1.23021	.51592
K97	Equal variances assumed	.362	.558	-1.152	13	.270	-.85714	.74389	-2.46422	.74994
	Equal variances not assumed			-1.162	12.991	.266	-.85714	.73771	-2.45099	.73670
K98	Equal variances assumed	1.193	.295	-.883	13	.393	-.76786	.86997	-2.64731	1.11159
	Equal variances not assumed			-.869	11.573	.402	-.76786	.88322	-2.70014	1.16442
K99	Equal variances assumed	7.590	.016	-2.463	13	.029	-1.00000	.40600	-1.87711	-.12289
	Equal variances not assumed			-2.366	8.898	.042	-1.00000	.42258	-1.95760	-.04240
K100	Equal variances assumed	.568	.465	-1.747	13	.104	-.92857	.53158	-2.07697	.21983
	Equal variances not assumed			-1.722	11.645	.112	-.92857	.53927	-2.10753	.25039
L101	Equal variances assumed	.896	.361	-.743	13	.471	-.25000	.33664	-.97726	.47726
	Equal variances not assumed			-.716	9.224	.492	-.25000	.34932	-1.03730	.53730
L102	Equal variances assumed	2.882	.113	-1.890	13	.081	-1.16071	.61411	-2.48742	.16599

	Equal variances not assumed			-1.970	10.776	.075	-1.16071	.58929	-2.46102	.13959
L103	Equal variances assumed	.528	.480	-.834	13	.420	-.51786	.62126	-1.86001	.82429
	Equal variances not assumed			-.845	12.963	.413	-.51786	.61263	-1.84175	.80604
L104	Equal variances assumed	.190	.670	.387	13	.705	.33929	.87671	-1.55473	2.23330
	Equal variances not assumed			.384	12.170	.708	.33929	.88418	-1.58420	2.26277
L105	Equal variances assumed	.242	.631	-2.297	13	.039	-1.41071	.61411	-2.73742	-.08401
	Equal variances not assumed			-2.280	12.235	.041	-1.41071	.61885	-2.75620	-.06523
L106	Equal variances assumed	.170	.686	.267	13	.794	.23214	.86997	-1.64731	2.11159
	Equal variances not assumed			.269	12.990	.792	.23214	.86277	-1.63189	2.09618
L107	Equal variances assumed	.125	.730	-1.140	13	.275	-.82143	.72078	-2.37858	.73572
	Equal variances not assumed			-1.166	12.578	.265	-.82143	.70440	-2.34839	.70554
L108	Equal variances assumed	.277	.608	-1.082	13	.299	-.46429	.42891	-1.39090	.46233
	Equal variances not assumed			-1.060	11.001	.312	-.46429	.43789	-1.42808	.49951

L109	Equal variances assumed	3.683	.077	.278	13	.786	.14286	.51470	-.96908	1.25479
	Equal variances not assumed			.269	9.790	.794	.14286	.53133	-1.04447	1.33019

APPENDIX E

Overall Cronbach's Alpha Scores for CRI™ Dimensions

	Cronbach's Alpha	N Items
Transformational Category	**0.948**	**40**
A. Change Mission and Strategy	0.919	13
B. External Environment	0.821	7
C. Change Leadership	0.881	12
D. Organizational Culture Supportive of Change	0.879	8
Transactional Category	**0.932**	**69**
E. Organizational Structure	0.800	8
F. Change Management Practices	0.883	15
G. Change Related Systems	0.903	5
H. Work Unit Climate	0.545	8
I. Job/Task Requirements	0.645	11
J. Motivation to Change	0.857	6
K. Personal Impact of Change	0.670	7
L. Emotional Impact of Change	0.737	9

APPENDIX F

Interviews Questions for Phase Two Interviews

Question #1: What are the factors that enable growth of online learning within the University System?

Question #2: If you were to characterize the efforts by the entire university system as either transactional (focusing on changing things like organizational structure, management processes, systems, work-group climate, skills/job match, motivation, individual needs and values and performance)) or transformational (Mission and strategy, leadership, culture, and the external environment) in nature. Which would you choose?

Question #3: To what extent do you believe that the current university system strategic plan emphasizes online learning growth?

Question #4 Tell me about your experiences with the support or lack of support for online learning within the university system.

APPENDIX G

Interview Protocol

1. Contact the participants selected and confirm willingness to participate verbally.
2. Set interview time and location (phone, in person, etc)
3. Send an electronic copy of the waiver to the interview participant.
4. Interview initiation
    a. Welcome the participant
        i. Thank participant
        ii. Explain that this is part of my dissertation study
        iii. Remind them that the date will be confidential, and you will not be identified
        iv. Describe the research study purpose
        v. Describe the process for the interview
        vi. Inform them I will send a copy of my notes for their review.
    b. Conduct Interview
    c. Make arrangements for getting a signed copy of the waiver if they are interviewing over the phone.

Interview

. Follow questions, allowing interviewee to volunteer additional information. Limit the number of follow up questions in general to the main questions. If there is a interesting example, make note.
    a. Keep the interview to less than one hour.
    b. Take careful notes during the interview and write up a summary immediately following the interview.
    c. Thank the interview for their time and their help with the study.

Post-Interview

. Send a thank you email to the interviee, along with a summary of the interview.
    a. Instruct them to contact me within a week if they have any feedback regarding the notes.

APPENDIX H

Researcher's Response to Interview Questions

These responses were written prior to any of the participant interviews.

Question #1: What are the factors that enable growth of online learning within the University System?

- Centralized Learning Management System
- University System Strategic Goal for increasing capacity
- External competition both within the system, and outside
- Financial pressure for enrollment growth.

Question #2: If you were to characterize the efforts by the entire university system as either transactional (focusing on changing things like organizational structure, management processes, systems, work-group climate, skills/job match, motivation, individual needs and values and performance)) or transformational (Mission and strategy, leadership, culture, and the external environment) in nature. Which would you choose?

Transactional. I think that institutions have not incorporated the distance learning operations in to the mainstream culture of the institutions. There has not been historically, a focus at the system level (beyond supporting individual campus efforts).

Question #3: To what extent do you believe that the current university system strategic plan emphasizes online learning growth?

I think it emphasizes it a good bit, but not nearly enough compared to where is should be at this time. This may change with the new strategic plan in the works.

Question #4 Tell me about your experiences with the support or lack of support for online learning within the university system.

Guidance on copyright resources has been limited. eCore has been good, but does not go far enough to provide resources for online courses that are generalizable (royalty free e-books, learning objects, etc). There have been great efforts by individuals and small groups in the system, but nothing at a strategic, system level.

APPENDIX I

Survey Consent Form

Georgia State University
Department of Middle Secondary Education and Instructional Technology
Informed Consent

Title: CHANGE READINESS FACTORS FOR ONLINE LEARNING WITHIN A SOUTHEASTERN STATE UNIVERSITY SYSTEM

Principal Investigator: Dr. Mary B. Shoffner, MSIT, Georgia State University

Student Principal Investigator: David Edwin Stone, MSIT, Georgia State University

Purpose: You are invited to participate in a research study. The purpose of this study is to describe the readiness of a Southeastern university system to support the growth of online learning.

You are invited to participate because you are either the Regent's Administrative Committee on Distance Education representative or are one of the Vista Institutional Administrators for your institution. Approximately 160 subjects are expected to participate in this study.

The survey will take no more than 20 – 30 minutes of your time.

Procedures: If you decide to participate, you will be asked to complete some online survey questions. You will be asked questions about your view of the university system's readiness to support online learning.

Risks: In this study you will not have any more risks than you would in a normal day of life. The survey questions will focus on your on the job experiences and training.

Benefits: Participation in this study may not benefit you personally. Overall, we hope to gain information about how ready the university system is to support online learning growth within the system.

Voluntary Participation and Withdrawal: Participation in research is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you may exit the survey at any time. You may choose to stop participating at any time. Whatever you decide, you will not lose any benefits to which you are allowed.

Confidentiality: We will keep your records private to the extent allowed by law. Only the principal researcher (Dr. Mary B. Shoffner) and student researcher (David Edwin Stone)

will have access to personally identifiable information you provide. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board and the Office for Human Research Protection (OHRP)). This study uses a proprietary survey instrument. The copyright owner of the instrument will receive a copy of the responses to the instrument without any personally identifiable information. Your name and other facts that might point to you will not appear when we present this study or publish its results. The information you provide will be kept up to one year after the study is completed and destroyed by the second year of the study's completion. The findings will be summarized and reported in group form. Please be aware that data sent over the Internet may not be secure. However, to protect the information that you report in the online survey, we will not collect the IP addresses of the participants and, you will not be identified personally.

Contact Persons: Call Dr. Mary B. Shoffner at (404) 413-8424 or David Edwin Stone (678) 971-9447, e-mail drtone1@student.gsu.edu if you have questions about this study. If you have questions or concerns about your rights as a participant in this research study, you may contact Susan Vogtner in the Office of Research Integrity at 404-413-3513 or svogtner1@gsu.edu.

Copy of Consent Form to Subject: You may print a copy of this consent form to keep for your records.

If you agree to participate in this research, please select the YES option below.

APPENDIX J

Interview Consent Form

Informed Consent

Georgia State University
Department of Middle Secondary Education and Instructional Technology

Informed Consent
Title: CHANGE READINESS FACTORS FOR ONLINE LEARNING WITHIN A SOUTHEASTERN STATE UNIVERSITY SYSTEM

Principal Investigator: Dr. Mary B. Shoffner, MSIT, Georgia State University
Student Principal Investigator: David Edwin Stone, MSIT, Georgia State University

I. Purpose

You are invited to participate in a research study. The purpose of this study is to describe the readiness of a Southeastern university system to support the growth of online learning.
You are invited to participate because you are either the Regent's Administrative Committee on Distance Education representative or are one of the Vista Institutional Administrators for your institution. Approximately 160 subjects are expected to participate in this study.

The interview will take less than 60 minutes of your time.

II. Procedures

If you decide to participate, you will be interviewed about your view of the university system's readiness to support online learning. One interview will be conducted over the phone or at a location that is convenient for you.

III. Risks

In this study you will not have any more risks than you would in a normal day of life. The inteview questions will focus on your on the job experiences and training.

IV. Benefits

Participation in this study may not benefit you personally. Overall, we hope to gain information about how ready the university system is to support online learning growth within the system.

V. Voluntary Participation and Withdrawal

Participation in research is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you may drop out of the study at any time. You may choose to stop participating at any time. Whatever you decide, you will not lose any benefits to which you are allowed.

VI. Confidentiality

We will keep your records private to the extent allowed by law. Only the principal researcher (Dr. Mary B. Shoffner) and student researcher (David Edwin Stone) will have access to personally identifiable information you provide. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board and the Office for Human Research Protection (OHRP)). Your name and other facts that might point to you will not appear when we present this study or publish its results. The information you provide will be kept up to one year after the study is completed and destroyed by the second year of the study's completion. The findings will be summarized and reported in group form. Your responses to the previous survey will not be connected or linked to your interview.

VII. Contact Persons

Call Dr. Mary B. Shoffner at (404) 413-8424 or David Edwin Stone (678) 971-9447, e-mail drtone1@student.gsu.edu if you have questions about this study. If you have questions or concerns about your rights as a participant in this research study, you may contact Susan Vogtner in the Office of Research Integrity at 404-413-3513 or svogtner1@gsu.edu.

Copy of Consent Form to Subject: You may print a copy of this consent form to keep for your records.

VIII. Copy of Consent Form to Subject

We will give you a copy of this consent form to keep.

If you are willing to volunteer for this research and be audio recorded, please sign below.

Participant Date

Principal Investigator or Researcher Obtaining Consent Date

APPENDIX J

Interview Questions

Question #1: In the preliminary findings from a survey and interviews I have not been able to determine if the university system as a whole responds best to transformational transactional actions (focusing on changing things like organizational structure, management processes, systems, work-group climate, skills/job match, motivation, individual needs and values and performance) or to transactional actions transformational (Mission and strategy, leadership, culture, and the external environment). Please describe what kind of actions have worked to support the change towards the goal of growing online learning within the university system.

Question #2: The first phase of this study identified three change-facilitating factors. Describe your experience with these factors and any other factors that have facilitated the growth of online learning within the university system.

Factor #1: **Motivation to change** - measure the degree to which organization members look forward to and are inspired by the changes.
Factor #2: **Job/task requirements** - measures the degree to which organizational members' work practices are affected by the change and the changes they have to make in this respect.
Factor #3: **Organizational culture supportive of change** - measures the degree to which organizational members are allowed to participate and influence the *change process, or to experiment with alternative ideas.*

Question #3: The first phase of this study identified three change-resisting factors. Describe your experience with these factors and any other factors that have restrained the growth of online learning within the university system.

Factor #1: **Change related systems** - measures the extent to which compensation and reward systems support the intended changes and whether sufficient resources are allocated.
Factor #2: **Emotional impact** - measures the degree to which the organization members are emotionally affected by the change.
Factor #3: **Mission and strategy** - measures the degree to which the change mission and strategy is necessary, clearly understood and administered with ease.

Question #4 Tell me about your experiences with the support or lack of support for online learning within the university system.

APPENDIX K

Informed Consent

Georgia State University
Department of Middle Secondary Education and Instructional Technology

Informed Consent
Title: CHANGE READINESS FACTORS FOR ONLINE LEARNING WITHIN A SOUTHEASTERN STATE UNIVERSITY SYSTEM

Principal Investigator: Dr. Mary B. Shoffner, MSIT, Georgia State University
Student Principal Investigator: David Edwin Stone, MSIT, Georgia State University

I. Purpose

You are invited to participate in a research study. The purpose of this study is to describe the readiness of a Southeastern university system to support the growth of online learning.

You are invited to participate because you are an administrator or faculty who is familiar with university system initiatives related to online learning. Approximately three administrators will be interviewed to discuss findings from the first phase of the study and to gain a greater understanding of how the university system approaches online learning.

The interview will take less than 60 minutes of your time.

II. Procedures

If you decide to participate, you will be interviewed twice about your view of the university system's readiness to support online learning. The first interview will be conducted over the phone or at a location that is convenient for you. The second interview will be a discussion of the first interview and will provide you with a chance to review, add, or correct the researchers record from the first interview.

III. Risks

In this study you will not have any more risks than you would in a normal day of life. The inteview questions will focus on your on the job experiences and training.

IV. Benefits

Participation in this study may not benefit you personally. Overall, we hope to gain information about how ready the university system is to support online learning growth

within the system.

V. Voluntary Participation and Withdrawal

Participation in research is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you may drop out of the study at any time. You may choose to stop participating at any time. Whatever you decide, you will not lose any benefits to which you are allowed.

VI. Confidentiality

We will keep your records private to the extent allowed by law. Only the principal researcher (Dr. Mary B. Shoffner) and student researcher (David Edwin Stone) will have access to personally identifiable information you provide. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board and the Office for Human Research Protection (OHRP)). Your name and other facts that might point to you will not appear when we present this study or publish its results. The information you provide will be kept up to one year after the study is completed and destroyed by the second year of the study's completion. The findings will be summarized and reported in group form. Your responses to the previous survey will not be connected or linked to your interview.

VII. Contact Persons

Call Dr. Mary B. Shoffner at (404) 413-8424 or David Edwin Stone (678) 971-9447, e-mail drtone1@student.gsu.edu if you have questions about this study. If you have questions or concerns about your rights as a participant in this research study, you may contact Susan Vogtner in the Office of Research Integrity at 404-413-3513 or svogtner1@gsu.edu.

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Participant	Date
Principal Investigator or Researcher Obtaining Consent	Date

APPENDIX L

Coding for the Burke-Litwin Model as defined by the CRI™

Transformational Factors

Change Mission and Strategy

A1. Understanding of purpose and change
A2. Reason for changing is known to all
A3. Strategy for change is clear

External Environment

B1. Forces of business communities
B2. Relations between institutions
B3. Government controls
B4. Financial markets
B5. Pressure from unions

Change Leadership

C1. Leadership ability to effect change
C2. Success of previous attempts at change
C3. Leadership's support for change
C4. Respect for change leadership
C5. Leadership behavior is congruent with change "talk"

Organizational culture relevant to change

D1. Perceived alignment between change efforts and organizational values
D2. Extent to which innovation is allowed
D3. Extent to which experimentation is allowed
D4. Momentum to reinforce existing culture

Transactional Factors

Organizational Structure

E1. Bureaucratic structure
E2. Size of organization
E3. Age of organization
E4. Momentum
E5. Complexity
E6. Formalization
E7. Centralization

Change Management Practices

F1. Time available to implement the required change.
F2. Change is led at a high level
F3. Planning of change is viewed as comprehensive
F4. Communication re change effort is clear and frequent
F5. Change is managed within systems context – macro vs. micro thinning

F6. Willingness of management to implement change
F7. Pressure for results re change exist
F8. Perception of success and management of previous change efforts
F9. Freedom to fail while attempting to change
F10. Extent to which it is possible to re-establish status quo if change were to fail

Change Related Systems

G1. Reward system for change perceived as adequate
G2. Sufficient resources and budget for change
G3. Extent to which individual operational budget will be lost
G4. Momentum to maintain existing systems

Work Unit Climate

H1. Extent to which social work unit(s) relations will be affected
H2. Peer pressure to resist change
H3. Fear to lose group expertise
H4. Respect for change agent in work unit
H5. Threat of losing resource allocation

Job/Task Requirements

I1. Extent to which job content changes
I2. Extent to which individual is skilled for new position
I3. Individual capacity to change
I4. Extent to which daily activities must change
I5. Momentum in existing job design

Motivation to Change

J1. Potential reward for change outweighs present discomfort
J2. Extent to which the people are looking forward to the change
J3. Extent to which people are committed to the change
J4. Perceived potential for improvement in the business performance

Personal Impact of Change

K1. Fear of losing job, change in status, loss of earnings, failure in new position
K2. Vested interest being threatened, change in habit patterns
K3. Degree to which people must modify their methods of influencing others, utilizing power networking, teamwork, etc.ß
K4. Perceived unfair people practices i.e. retrenchment
K5. Previous experience with unsuccessful change efforts
K6. Impact on social relations

Emotional Impact of Change

L1. Change perceived as an additional source of stress
L2. Change too complex to assimilate
L3. Alignment between personal values and change
K9. Alignment between personal values and change

Note: Adapted from Kinnear & Roodt, 1998, p. 44

APPENDIX M

Code Book for Burke-Litwin Model as defined by the CRI™

Label: Change Mission and Strategy
Definition: "measures the degree to which the change mission and strategy is necessary, clearly understood and administered with ease" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes A1-A3 in the data.

Label: External environment
Definition: "measures the degree to which the impact of external forces is understood and considered in the change strategy" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes B1-B5 in the data.

Label: Change leadership
Definition: "measures the degree to which the change vision is shared, communicated and understood" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes C1-C5 in the data.

Label: Organizational culture relevant to change
Definition: "measures the degree to which organizational members are allowed to participate and influence the change process, or to experiment with alternative ideas" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes D1-D4 in the data.

Label: Organizational structure
Definition: "measures the extent to which the structure and policies in the organization are flexible to accommodate the change" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes E1-E7 in the data.

Label: Change management practices
Definition: "practices measures the extent to which the change practices are championed by key organizational members, other members involved in the process and whether the process is structured and planned" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes F1-F10 in the data.

Label: Change related systems

Definition: "measures the extent to which compensation and reward systems support the intended changes and whether sufficient resources are allocated" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes G1-G4 in the data.

Label: Work unit climate
Definition: "measures the degree to which members support the change and are affected by the change processes" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes H1-H5 in the data.

Label: Job/task requirements
Definition: "measure the degree to which organizational members' work practices are affected by the change and the changes they have to make in this respect" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes I1-I5 in the data.

Label: Motivation to change
Definition: "measure the degree to which organization members look forward to and are inspired by the changes" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of code J1 in the data.

Label: Personal Impact
Definition: "measures the extent to which organization members are personally affected by the changes, or how their circumstances and benefits may be affected" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007 p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes K1-K6 in the data.

Label: Emotional Impact
Definition: "of change measures the degree to which the organization members are emotionally affected by the change" (Jople van Rooyen & Partners SA (Pty) Ltd., 2007, p. 9)
Description: Flag this theme when you notice discussion or evidence of the presence or influence of codes L1-L3 in the data.