AN EXAMINATION OF MOTIVATING FACTORS ON FACULTY PARTICIPATION IN ONLINE HIGHER EDUCATION

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Dedication and Acknowledgements

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Abstract

Online education has become a vital component of the American higher education system. Demand for online education is expected to grow, as online education offers a number of tangible benefits to potential students. Faculty member participation in online education has been found to be crucial to the success of new or expanded online education initiatives. This research was conducted to determine the extent to which a number of extrinsic and intrinsic factors influence a faculty member’s decision to participate in online education. Ten subscale factors across four motivational dimensions were identified in the literature as potentially important to faculty participation in online education. This research study employed survey research and quantitative methods to determine the extent to which these factors influenced faculty member participation in online education at one liberal arts institution. Both extrinsic and intrinsic factors were found to have a positive, statistically significant relationship with faculty member willingness to participate in online education. Intrinsic factors, including a faculty member’s beliefs regarding the efficacy of online education, a faculty member’s desire to increase student access to education, and opportunities for professional growth were found to have the strongest relationship with faculty member willingness to participate in online education. Higher education administrators who are seeking to increase faculty participation in online education are advised to implement encouragement programs that, while emphasizing the aforementioned intrinsic factors, incorporate a broad range of motivational factors.

Keywords: higher education, online education, faculty, motivation, participation.
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An Examination of Motivating Factors on Faculty Participation in Online Higher Education

Chapter I: Introduction

Statement of the Problem

In the past decade enrollments in distance education, and specifically online education, have grown dramatically in the United States. According to the 2009 Sloan Report (I. E. Allen & Seaman, 2010) enrollments in online courses increased from 9.6% of total postsecondary enrollments in 2002 to 25.3% in 2009. Higher education institutions also report that student demand for online education programs is increasing (I. E. Allen & Seaman, 2010). Research conducted by Moloney and Oakley (2010) not only supports the notion of increasing demand, but also suggests that higher education institutions are unable to meet the current student demand for online programs. As such, it is critical that higher education institutions be in a position to meet this increased demand. Unfortunately, a number of barriers exist that may result in an inability of higher education institutions to provide quality online education programming in sufficient scale to meet the expected student demand.

The Managing Online Education report (K. Green, 2010) identifies ten distinct factors that “impede institutional efforts to expand online education programs” (p. 1). Primary among these factors is the resistance of faculty towards teaching in an online environment (K. Green, 2010). Indeed, faculty resistance to online education was reported by higher education institutions as more detrimental to the expansion of new online programs than scarce resources, accreditation concerns or financial aid regulations (K. Green, 2010). Specifically, of the 183 institutional respondents, fully 73% cited faculty resistance as a barrier to the expansion of online education (K. Green, 2010).

The intersection of increasing student demand for online programs and faculty resistance
has resulted in a significant barrier for institutions seeking to increase online program offerings (K. Green, 2010). An understanding of the factors that both motivate and discourage faculty member participation in online education programs is critical if institutions are to leverage their existing faculty to meet the current and future demand for online education.

**Significance of the Problem**

Higher education enrollments in the United States increased from just over 16.5 million students in 2002 to over 19 million in 2009 (E. Allen & Seaman, 2010). Of the 19 million higher education students in 2009, over twenty percent completed at least one online course (E. Allen & Seaman, 2010). Continuing growth in higher education enrollments will necessitate an even greater reliance on online learning. Indeed the temporal flexibility, potential for reduced attendance expense and geographic reach afforded by online education will continue to appeal to large numbers of students and higher education institutions (Appana, 2008; K. Betts, Hartman, & Oxholm III, 2009; Geith & Vignare, 2008; Lei & Govra, 2010). As such, it will be increasingly important that higher education institutions be positioned to meet the needs of online learners, both to ensure student access as well as to remain competitive relative to peer institutions.

Increasing numbers of online higher education courses will naturally require additional online instructors. Unfortunately, higher education institutions report that faculty resistance to online education is the primary impediment to institutional efforts to expand online education programs (K. Green, 2010). If current higher education faculty members are resistant or unwilling to teach online courses, institutions may be forced to abandon new online learning initiatives. Alternatively, institutions may instead elect to staff online courses with disproportionately large numbers of adjunct, or part-time, instructors (Bedford, 2009). Neither approach is ideal, as altogether abandoning new online learning programs may reduce access to
higher education while an overreliance on adjunct instructors may jeopardize program quality and accreditation status (K. S. Betts & Sikorski, 2008; Ehrenberg & Zhang, 2005). As such, it is critical that higher education institutions be positioned to offer new online education programming and be able to do so, at least in part, by leveraging their current instructor base.

**Practical and Intellectual Goals**

The primary intellectual goal for the proposed study is the exploration of the influence a range of potential factors has on faculty member motivation to participate in online education. Indeed, member participation is important to organizational change initiatives (Fernandez & Rainey, 2006). Encouraging faculty member participation in online education is vitally important to the success of new online education initiatives. As such, I would like to explore the extent to which a wide range of factors may encourage or discourage faculty member participation in online education.

The aforementioned research (Chapman, 2011; T. Green et al., 2009; B. Mitchell & Geva-May, 2009; Tabata & Johnsrud, 2008; Wickersham & McElhany, 2010) also largely focuses on either tangible motivating factors such as compensation or on less tangible variables such as faculty perceptions. I would like to consider a wide range of potential motivating factors to better understand how relationships between the factors influence faculty participation in online education. Additionally, the research (Chapman, 2011; T. Green et al., 2009) principally explores the motivating factors of those faculty members whom are teaching, or have previously taught, in an online education environment. It may be informative to determine the extent to which motivating factors may be dissimilar among experienced online educators as opposed to those with no online education experience. This may prove to be particularly salient for institutions seeking to initiate new online education program yet have limited or no previous
institutional experience with online education programs. Such an institution may not have access to a sufficient number of experienced online educators, thereby increasing the importance of identifying potential motivating factors among those faculty members whom have no experience teaching in an online education environment.

**Research Questions**

The purpose of this research is to determine the extent to which a variety of factors motivate or inhibit faculty participation in online higher education. This research will attempt to answer to primary research questions:

1. To what extent do extrinsic factors influence a faculty member’s willingness to participate in an online education environment?
2. To what extent do intrinsic factors influence a faculty member’s willingness to participate in an online education environment?

**Paper Contents and Organization**

This paper is organized into five chapters. This first introductory chapter has introduced the research problem, the significance of the problem, and the subsequent research questions. The second chapter will offer a theoretical research framework which is a compilation of several relevant theories from prominent studies in the areas of institutional change and individual adoption of technology. The second chapter also includes a comprehensive literature review which will present a number of research studies into the broad area of online education and, more specifically, faculty member participation in online education. The third chapter contains a comprehensive review of the research design in which the research questions, research methodology, threats to validity, and measures to protect human subjects will be presented. The research findings are presented in detail in the fourth chapter. The fifth and final chapter will
offer a discussion of the results, including implications for research and practice.

**Definition of Terms**

While there is little expressly technical language used in this research study, it is important that several important terms be defined.

1. Online education refers to education delivered via the Internet. Fully online instruction is defined as “a course where most or all of the content is delivered online” with “typically no face-to-face” meeting (I. E. Allen & Seaman, 2011, p. 7).

2. Asynchronous online education refers to online education conducted in a manner whereby students and instructors interact at different times (Olson & Hale, 2007). Asynchronous online education is often facilitated by the use of a learning management system and incorporates technologies such as discussion boards, online assignments, and multi-media content delivery.

3. Synchronous online education refers to online education conducted in a manner whereby students and instructors interact at the same time (Olson & Hale, 2007). Synchronous online education is often delivered by means of real-time, web-based collaboration software such as Adobe Connect or WebEx.

4. A learning management system is a web-based computer system that enables online instruction through facilitation of such activities as online discussions, assignments, and content delivery. Both Blackboard and Moodle are examples of commonly used learning management systems.
Chapter II: Theoretical Framework and Literature Review

This chapter will introduce the theoretical framework which will be used to structure this research study. A comprehensive literature review will also be presented. Both the theoretical framework and literature review are crucial to further the understanding of faculty participation in online education and to allow for a basis by which the aforementioned research questions can be explored.

A compilation of several theories will form a theoretical framework by which the problem of faculty member participation in online education can be analyzed. Rogers’s (2003) theory of the diffusion of innovations offers a useful context for exploring how the innovation of online education may be adopted by some and resisted by others. Davis’s (1989) technology acceptance model (TAM) and Venkatesh, Morris, Davis and Davis (2003) Unified Theory of User Acceptance and Use of Technology (UTAUT) contributes a useful theory for understanding an individual’s decision to accept or reject a given technology system. Finally, Fullan’s (2008) theory of educational change will provide a model for examining the role innovation plays in organizational change. Fullan’s change theory also provides insight into the general importance of employee motivation and the specific importance of peer support. Each of these theories will be leveraged to create a theoretical framework for examining the willingness of faculty to participate in an online education environment.

Motivation Theory

In his seminal work, Maslow (1943) argues that individuals are motivated by a range of needs. The focus of Maslow’s work involves categorizing and prioritizing human needs. Maslow argues that individuals first seek to meet lower-order needs such as food and shelter. Only when these needs are met, do individuals seek to meet higher-level needs such as self-
esteem and self-fulfillment (Maslow, 1943). Deci and Ryan (1991) discuss the roles that intrinsic and extrinsic factors play in motivating an individual. Intrinsic motivators are those that represent “internal causality”, while extrinsic motivators are “…those that are coerced or seduced by external forces” (Deci & Ryan, 1991, p. 249). The concept of need prioritization, along with intrinsic and extrinsic motivation, will be central to the overall theoretical research framework of this study.

Impact on Innovation Attributes on the Rate of Adoption

In his seminal work, Rogers (2003) articulates a comprehensive view of the process of how innovations are accepted and adopted. This “Diffusion of Innovations” (Rogers, 2003) is truly a seminal work, having been cited over 7,000 times by authors in social science journals. Furthermore, Rogers’s framework has been utilized by many studies seeking to explore the adoption of online education in higher education (Hixon, Buckenmeyer, Barczyk, Feldman, & Zamojski, 2012). The focus of Rogers’s work is the exploration of how innovations are adopted, the categorization of innovation adopters and the important innovation characteristics that impact the rate of adoption.

An innovation is, as defined by Rogers (2003), “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (p. 12). Rogers argues that there are a number of variables that influence the rate at which an innovation is adopted including the perceived relative advantage of an innovation, the degree to which an innovation is perceived as being compatible, the perceived degree of complexity of an innovation, the extent to which an innovation can be experimented with, and the degree to which an innovation can be observed prior to adoption. These variables each work to explain the rate at which an individual adopts a particular innovation (see Figure 1).
Figure 1. Roger’s Variables Determining the Rate of Adoption of Innovations (Rogers, 2003).
Rogers (2003) suggests that foremost among these variables in predicting the rate of adoption is the extent to which an innovation is “…perceived as being better than the idea it supersedes”, also known as the innovation’s relative advantage (p. 229). The perceived relative advantage of online education by a faculty member is therefore likely to act as a strong predictor of the faculty member’s willingness to participate in an online education environment.

According to Rogers (2003), categories of variables such as incentives and mandates can directly influence an individual’s perception of an innovation’s relative advantage. Specific extrinsic potential motivators from these categories will be identified by a review of the literature and then examined in this study in an attempt to gauge the extent to which faculty members view online education as having a relative advantage over traditional teaching methods.

Rogers (2003) also suggests that an individual’s level of compatibility with an innovation can be used as a predictor of the rate of adoption. The intrinsic motivator of compatibility, as defined by Rogers, is the “…degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” (p. 240). The acceptability of online education by a faculty member will be examined to determine the extent to which a faculty member’s compatibility of online education influences their willingness to participate in an online education environment. The degree to which a faculty member perceived online education as compatible is particularly cogent given the tendency for some faculty members to view online education as inferior to traditional education (Koenig, 2010; Schulte, 2010; Ward, Peters, & Shelley, 2010; Wasilik & Bolliger, 2009).

The degree to which an innovation is perceived by an individual as being complex, or difficult to effectively utilize, is negatively related to an individual’s adoption of said innovation
(Rogers, 2003). This concept of a correlation between perceived complexity and innovation adoption is directly applicable to the adoption of online technology by faculty members. Indeed, several scholars have pointed to the importance of the relationship between technology proficiency of faculty members and their acceptance of online education (Cook, Ley, Crawford, & Warner, 2009; Regan et al., 2012; Shea, 2007; Waheed & Farooq, 2010). As such, Roger’s (2003) theory on the impact of perceived complexity on the rate of innovation adoption will be integrated into the overall theoretical research framework in an attempt to determine the extent to which an individual faculty member’s comfort with online education technology, and indeed technology in general, influences the faculty member’s willingness to participate in online education.

Roger’s (2003) concept of observability, defined as “the degree to which the results of an innovation are visible to others” (p. 258), is similarly suited for inclusion in the theoretical research framework seeking to identify factors influencing a faculty member’s willingness to participate in an online education environment. Roger’s (2003) posits that the level to which an innovation can be easily observed and communicated to others is positively related to the innovation’s rate of adoption. The literature suggests that the extent to which online education is viewed, either favorably or unfavorably, by a faculty member’s colleagues does in fact influence the faculty member’s decision to accept online education (Huang & Hsia, 2009; Osika, Johnson, & Buteau, 2009; Sieber, 2005; Ulmer, Watson, & Derby, 2007). Roger’s (2003) concept of observability will be included in the overall theoretical research framework to explore the influence that extrinsic factors related to observability have on a faculty member’s willingness to participate in online education.

**Adopter Categories**
In addition to his work on the impact of innovation attributes on their rate of adoption, Rogers (2003) also offers a compelling theoretical framework for categorizing innovation adopters. Rogers posits that adopters fall into one of five categories including innovators, early adopters, early majority, late majority and laggards.

Rogers (2003) theorizes that the rate at which these adopter categories adopt innovations can be represented by a bell-curve distribution (see Figure 2). Innovators are the smallest group and are comprised of those individuals that are the first adopters of an innovation. Innovators are not always respected by the majority but do play an important role in importing new innovations into an organization. The second adopter category, early adopters, is the next group to accept an innovation in an organization. Early adopters play a key role by being near the front of the aforementioned adoption curve, yet are typically accepted and looked to for advice by other members of an organization. Early adopters are often seen as the idea leaders in an organization. The third category of adopters, referred to as the early majority, still adopt innovations sooner than most individuals in an organization. They can be thought of as early followers, as opposed to the innovation leadership position characterized by the early adopters. The late majority category is found further down the adoption distribution curve. The late majority adopts innovations later than the average adopter in an organization and may be pressured to do so by organizational incentives or their peers. Finally, “laggards” is used to describe the last category of innovation adopters. Laggards are characterized by a general suspicion of innovations, a historical outlook and lengthy decision processes. It is important to note that laggards will likely resist adoption of an innovation for what are, from their perspective, entirely logical reasons.

Rogers’s (2003) adopter framework provides a useful lens through which to examine how innovations are accepted by individuals. Specifically, the adopter framework can be used to
explore the differences in faculty willingness to participate in online education. Indeed, the

Figure 2. Roger’s Adopter Categorization Curve (Rogers, 2003).
literature suggests that a range of faculty experiences, both online education specifically and technology in general, influence how faculty view online education (Huang & Hsia, 2009; Osika et al., 2009; Shea, 2007; Ulmer et al., 2007). The adopter framework will assist and inform the exploration of the influence of experiences on faculty participation in online education.

**Technology Acceptance Model (TAM)**

First developed by Davis in 1989, and then refined by Bagozzi, Davis, and Warshaw in 1991, the Technology Acceptance Model, or TAM, has been used by numerous researchers as a tool to explore how individuals accept technology (King & He, 2006). The TAM model seeks to explain the motivation or intent of an individual towards usage of a new technology (Waheed & Farooq, 2010). The TAM posits that the extent to which an individual perceives a technology as being easy to use and useful is directly related to the individual’s acceptance of said technology (Bagozzi, Davis, & Warshaw, 1992; F. D. Davis, 1989) (see Figure 3). In a meta-analysis of 88 studies using the TAM model, King and He (2006) found the TAM measures to be “… highly reliable and may be used in a variety of contexts” (p. 751). Kim (2008) found in his study that the TAM model can help explain the reasons for faculty to develop and teach online courses. As previously mentioned, the TAM suggests that the extent to which an individual perceives a technology as being useful is directly related to the individual’s acceptance of the technology. In fact, Davis (1989) found that perceived usefulness is even more strongly related to technology acceptance than is perceived ease of use. The TAM seems ideally suited to investigating the influence the extrinsic factor of a faculty member’s perceptions of the usefulness of online education have on said faculty members willingness to participate in online education. Indeed, Osika et al. (2009) posit that faculty members are more willing to accept online education if they
perceive a need for online education.

Figure 3. The Technology Acceptance Model (TAM). EOU – Ease of Use, USF – Perceived Usefulness, IU – Intent to Use (Bagozzi et al., 1991).
In addition to perceived usefulness, the TAM also states that an individual’s perception of a technology’s ease of use is related to the individual’s acceptance of the technology. The literature identifies several factors that may influence a faculty member’s perception of the ease of use of online education including the level of flexibility afforded by online education, the level of concern about online education technology failures, the amount of experience a faculty member has with learning management systems, and concerns regarding the amount of work online education may entail (Alshare, Kwun, & Grandon, 2006; Boerema, Stanley, & Westhorp, 2007; Gibson, Harris, & Colaric, 2008; Kampov-Polevoi, 2010; Shea, 2007; Sieber, 2005; Ulmer et al., 2007). The TAM provides an excellent contribution to the overall research framework for this study in that it provides rationale for examining factors related to a faculty member’s perception of usefulness and ease of use of online education.

**Unified Theory of Acceptance and Use of Technology**

Building upon the Technology Acceptance Model, Venkatesh et al. (2003) have created an even more robust model of technology acceptance knows as the Unified Theory of User Acceptance and Use of Technology (UTAUT). The UTAUT builds upon TAM by integrating the concepts of several other technology theories to present a more comprehensive theory of technology acceptance. Specifically, the UTAUT integrates the core concept of social influence as a predictor of intention to use technology along with perceived usefulness, or performance expectancy, and ease of use, or effort expectancy (see Figure 4). Social influence is described by Venkatesh et al. (2003) as “… the degree to which an individual perceives that important others believe he or she should use the new system” (p. 451). This is particularly cogent to the study of faculty participation in online education given the importance the literature places on factors
related to social influence

Figure 4. Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003)
(Huang & Hsia, 2009; Osika et al., 2009; Shea, 2007; Sieber, 2005; Tabata & Johnsrud, 2008; Ulmer et al., 2007). For example, Osika et al. (2009) suggest that positive pressure from peer faculty members can influence a faculty member to adopt online education. Similarly, Ulmer et al. (2007) posit that negative peer pressure regarding online education can act as a powerful disincentive for a faculty member to participate in online education. Tabata and Johnsrud (2008) argue that the perceived value a higher education institution places on online education can influence a faculty member’s participation. Adding the concept of social influence, as described by the UTAUT, to this study’s overall research framework will allow for a more robust and complete examination of faculty participation in online education.

**Change Theory**

Fullan’s (2008) theory of change describes six vital components to successful and sustainable change efforts (see Figure 5). Fullan’s (2008) six components of change consist of “love your employees, connect peers with purpose, capacity building prevails, learning is the work, transparency rules, and systems learn” (p.11). Specifically, Fullan’s (2008) concept of “learning is the work” suggests that organizations need to carefully balance consistency and innovation to ensure successful and sustainable change. This theory of equilibrium between consistency and innovation provides an ideal lens through which the problem of faculty support for online learning can be examined. Organizational consistency involves utilizing the information an organization has already accumulated (Fullan, 2008). Innovation, by contrast, involves the discovery of new information or techniques to encourage organizational improvement (Fullan, 2008).

Fullan (2008) suggests that organizations should ideally seek to achieve equilibrium
between consistency and innovation in everyday practice. A successful online education
program would preferably combine elements of both innovation and consistency. For example, if faculty members lean too heavily towards consistency at the expense of innovation, stagnation can result which may impede efforts to expand online learning initiatives. If, however, faculty members overemphasize innovation, the result may be new online programs that abandon the core academic principles of the institution. In either case, Fullan’s (2008) theory of equilibrium between consistency and innovation seems ideally suited to examining the apparent lack of faculty member support for online education initiatives.

Fullan’s (2008) concept of loving your employees suggests that treating employees well will result in long-term benefits to the organization. At the core of this concept is Fullan’s (2008) belief that motivated employees are central to organizational success. Indeed, Fullan argues that it is critical that organizations align employee and organizational goals. Fullan’s (2008) concept of employee motivation is an integral component of the overall theoretical research framework in that it confirms that employee motivations are, in fact, important. When applied to the research questions, Fullan’s (2008) theory suggests that it is valuable to consider faculty motivations for participating in online education as opposed to simply trying to force faculty to teach online. An examination of faculty motivations will be central to soliciting their participation in any new or expanded online education initiatives.

The value of peer interactions is also cited by Fullan (2008) as important to any organizational change effort. As previously mentioned, if an institution seeks to expand online education initiatives, institutional administrators should consider how faculty peer interaction will impact the new initiatives. Fullan’s (2008) change theory suggests that it is important to
consider the influence that peer support for, or resistance to, online education has on faculty members. More broadly, Fullan’s (2008) change theory suggests that extrinsic factors in general, and peer support in particular, are useful to consider when seeking to determine the factors that most influence faculty member participation in online education and, as such, will be integrated into the overall theoretical research framework.

**Theoretical Framework**

The aforementioned theories all seek to explain individual motivation. Maslow’s theory seeks to explain very general individual motivational factors, including both intrinsic and extrinsic needs. Maslow’s theory provides the basis for examining motivational factors based on their intrinsic and extrinsic value. The Diffusion of Innovation theory seeks to explain the motivational forces behind an individual’s adoption or rejection of an innovation. Specifically, The Diffusion of Innovation theory contributes the Relative Advantage category to the synthesized theoretical model. The Technology Acceptance Model and UTAUT provide an even greater level of specificity, seeking to explain the motivators behind an individual’s decision to accept or reject a technology solution. Support for inclusion in the synthesized framework of the motivational categories of Ease of Use, Usefulness, and Social Influence is found in the TAM and UTAUT. Finally, Fullan’s Change Theory provides an in-depth exploration of an individual’s acceptance of change, including factors that support or inhibit such acceptance. Fullan’s theory contributes the basis for the importance of employee motivation to organizational initiatives. The compilation of these theories provides an overall theoretical framework for the exploration of faculty willingness to participate in online education (see Figure 6).

**Literature Review**

There has been an abundance of research on the topic of online education during the past
decade. The following review of the literature will first offer a brief overview of the importance of online learning to higher education. Relevant literature will then be presented to explore the

Figure 5. Theoretical Framework
importance of faculty to institutional efforts at offering new or expanded online education programming. The review will then address issues involving faculty participation in online education including such issues as acceptance of technology, support for the online education medium, compensatory concerns and apprehensions over perceived increases in faculty workload.

**The Importance of Online Learning to Higher Education**

Higher education institutions often seek to implement online education initiatives as a means to increase student enrollments (Schiffman, Vignare, & Geith, 2007). Higher education online enrollments continue to surge in the United States, as evidenced by the finding from the most recent Sloan Consortium report (I. E. Allen & Seaman, 2011) indicating that the number of students taking at least one online course grew by an annualized rate of 18.3 percent between fall 2002 and fall 2010. This is compared to an approximate two percent annualized growth rate for enrollments in all of higher education during the same time period (I. E. Allen & Seaman, 2011). This promise of increased enrollments has elevated online education to a position of great strategic importance for higher education institutions. Indeed, 65.5% of chief academic officers at higher education institutions reported that online education is “critical to the long-term strategy of my institution” (I. E. Allen & Seaman, 2011, p. 7). Research (Chau, 2010; Hoskins, 2011; McCord, 2007; Moloney & Oakley, 2010) supports the argument that online education has become a critical component of the higher education system.

There are several reasons for the explosive growth of online education and the promise of
future increases in online postsecondary enrollments. Geith and Vignare (2008) argue that online education has the potential to allow higher education institutions to extend their geographic reach, thereby allowing institutions to recruit and service students from a much larger physical area. Indeed, the increased geographic flexibility of online education can even allow higher education institutions to market programs internationally (Appana, 2008; Lei & Govra, 2010).

Equally important is the ability for higher education institutions to enroll non-traditional students whom would otherwise be unable to attend classes due to time constraints (Lei & Govra, 2010; Picciano, Seaman, & Allen, 2010). Asynchronously delivered online courses do not require students to participate in coursework at a specific time. Rather, mechanisms such as discussion boards, posted assignments, and recorded lectures can be used to facilitate learning in a manner which allows students a great deal of temporal flexibility (Olson & Hale, 2007). Asynchronous online education can introduce a great deal of freedom for students from the rigid time constraints of traditional coursework (Geith & Vignare, 2008).

Adult learners are one type of student that may benefit to a great degree from the flexibility of an online education program (K. Betts et al., 2009; O'Lawrence, 2006). For example, Betts et al. (2009) suggest that unemployed adults may elect to use online education as a means to pursue a degree while still allowing them the freedom to seek employment. According to Picciano et al. (2010), adult students may also be subject to schedule constraints such as employment or family responsibilities. Online education, and in particular asynchronous online learning, offers a degree of flexibility for these life-long learners that may enable them to continue their education when doing so would have been otherwise impossible (Picciano et al., 2010).
There are a variety of additional reasons for the growth potential of online education. For example, Lei and Govra (2010) posit that online education allows for enrollment growth without the same need to invest in physical facilities that the significant expansion of traditional programs would likely require. New or expanded online education programs can allow higher education institutions to support new student enrollments without expending resources to increase classroom or residential facility capacities (K. Betts et al., 2009; Meyer, 2008). Furthermore, Kasraie and Kasraie (2010) indicate that higher education institutions can also save money on the variable costs of facility expansion that would likely be required to support growth in traditional programs.

Online education may also allow higher education institutions to appeal to a greater number of physically disabled students; as such disabilities may make it difficult for such students to physically attend traditional classes (Cooper, 2006). Barnard-Brak and Sulak (2010) suggest that disabled students may also be attracted to online education programs by the opportunity it affords them to participate in higher education without having to disclose their disability to their peers. If properly implemented, particularly with techniques to accommodate visual or audiological impairments (Edmonds, 2004), online education can increase access to higher education for disabled students (Cooper, 2006).

Indeed, research (I. E. Allen & Seaman, 2010; Lei & Govra, 2010; Picciano et al., 2010; Pontes, Hasit, Pontes, Lewis, & Siefring, 2010) supports the notion that the inherent flexibility of online education may allow higher education institutions to recruit students that would have been otherwise unable to attend due to a variety of constraints. Online education may also be attractive to students seeking to lower the costs of attending college. For instance, Betts et al. (2009) and Chau (2010) posit that online courses may be leveraged by students in such a way
that allows them to attend a higher education institution from their homes or places of work, thereby potentially reducing travel or child care expenses. Additionally, the ability to attend an institution from home may allow some students to save on the expenses associated with room and board (K. Betts et al., 2009; Lei & Govra, 2010). Li and Irby (2008) suggest that even the opportunity cost of the time saved from not having to commute can be advantageous to online students.

The advantages of online education have likely resulted in the aforementioned explosive growth in online education enrollments. Allen and Seaman (2011) found that the rapid growth rate of online education enrollments continues to outpace overall higher education enrollment growth. The realization of continued growth in online education programs will be important to meeting future enrollment demand (Moloney & Oakley, 2010). Moloney and Oakley (2010) argue that demand for online higher education courses is currently exceeding the available supply. Similarly, Wickersham and McElhany (2010) suggest that student demand will continue to grow due to changing student demographics and economic factors. It is therefore vital to understand key variables that may support, or hinder, growth in online education. Among the principal barriers is the potential for faculty resistance to online education (K. Green, 2010), thus making it important to understand the role faculty play in efforts to expand online higher education.

**The Role of Faculty in Expanding Online Education**

Numerous research studies cite the importance of faculty support for, and participation in, online education to future growth in online learning (D. Davis, 2009; T. Green et al., 2009; Moloney & Oakley, 2010; Orr, Williams, & Pennington, 2009; Styron, Wang, & Styron Jr., 2009; Wasilik & Bolliger, 2009). For example, Orr et al. (2009) conducted a qualitative study of
faculty and administrators and found that faculty motivation is critical to the success of institutional efforts to expand online education. T. Green et al. (2009) suggest that, if their online education programs are to be successful, it is vital for higher education institutions to have programs in place to address turnover rates of online instructors, and particularly online adjunct instructors. Similarly, Wasilik and Bolliger (2009) posit that “faculty satisfaction is an important factor influencing the overall success of online education programs” (p. 173). Kern (2010) goes even further, arguing that “faculty are essential” to new online learning initiatives (p. 79).

Unfortunately, the Managing Online Education report (K. Green, 2010) suggests that faculty reluctance is a major barrier to the adoption of online education. The most recent Sloan Consortium report indicates that “less than one third of chief academic officers believe that their faculty accept the value and legitimacy of online education” and that “this percentage has changed little over the last eight years” (I. E. Allen & Seaman, 2011, p.5). An even more recent study jointly published by the Babson Survey Research Group and Inside Higher Ed confirms this challenge (I. E. Allen, Seaman, Lederman, & Jaschik, 2012). I.E. Allen et al. (2012) found that while 80% of higher education administrators reported “more excitement than fear” at the prospect of online education growth, 58% of faculty reported “more fear than excitement” (p. 5). Similarly, Al-Salman (2011) argues that “… the gap between administration and faculty in the acceptance of online initiatives has been one of the major impediments to online learning in many colleges and universities” (p. 9). This dichotomous view of online education growth between higher education faculty and administrators suggests there is need for exploration into faculty motivators and inhibitors for participating in online education.

**Faculty Motivators to Participate in Online Education**

Increased demand for online education programs has outpaced the supply of instructors at
many higher education institutions, thus forcing a greater reliance on adjunct instructors (Picciano, 2006; Puzziferro-Schnitzer & Kissinger, 2005). Policies that enable institutions to capitalize on this ability to recruit new instructors will be important if higher education institutions are to be able to grow online enrollments (Moloney & Oakley, 2010).

In her review of the literature, Maguire (2005) broadly categorized motivators and inhibitors to faculty participation in online education as intrinsic, extrinsic, and institutional. The literature has identified a number motivators and inhibitors that can be considered extrinsic including faculty member perceptions of flexibility, workload concerns, incentives and rewards, perception of peer support, and perceived level of institutional support (I. E. Allen et al., 2012; Boerema et al., 2007; Chapman, 2011; Conceição, 2006; Cook et al., 2009; Gautreau, 2011; T. Green et al., 2009; Huang & Hsia, 2009; Kampov-Polevoi, 2010; Orr et al., 2009; Osika et al., 2009; Shea, 2007; Ulmer et al., 2007). Institutional motivators, which include technology and administrative support as categorized by Maguire (2005), have been included in this review in the institutional support category. Intrinsic motivators and inhibitors have been cited in the literature as including technology self-efficacy, perceptions regarding the efficacy of online education, faculty technology experiences, desires for professional growth and desire for increased student access (Batts, Pagliari, Mallett, & McFadden, 2010; Gibson et al., 2008; Regan et al., 2012; Schulte, 2010; Styron et al., 2009; Waheed & Farooq, 2010; Ward et al., 2010; Wickersham & McElhany, 2010).

**Extrinsic Motivators for Faculty Participation in Online Education**

**Perception of flexibility.** As previously mentioned, students often benefit from the inherent geographic and temporal flexibility of online education (K. Betts et al., 2009; Olson & Hale, 2007a; Picciano et al., 2010). The literature suggests that faculty members can also find
the flexibility of online education to be advantageous (T. Green et al., 2009; Osika et al., 2009; Wasilik & Bolliger, 2009). In a quantitative study of experienced online instructors at a large, land-grant University, Wasilik and Bolliger (2009) found that “flexibility” was the highest-rated positive motivator for teaching online (p. 176). Similarly, T. Green et al. (2009) surveyed 135 active online instructors in an attempt to determine their motivations for teaching online. “Flexible working conditions” was cited by approximately 82% of the participants as a motivating factor, making it the single greatest faculty motivator for participating in online education (T. Green et al., 2009, p. 7). In a qualitative focus-group study of experienced online educators, Hiltz, Kim and Shea (2007) found that the flexibility of “anytime/anywhere” instruction was cited by the focus groups as the top motivator for teaching online. Nagel, Maniam and Leavell (2011) suggest that the temporal and geographic flexibility of online education is a “major benefit” for online instructors (p. 137.). A quantitative study of faculty and administrators conducted by Stewart, Bachman and Johnson (2010) found that more online courses were intended to be taught by those faculty members that valued the flexibility of online education.

Interestingly, in a survey of 386 online instructors, Shea (2007) found that female instructors were more positively motivated by flexibility than their male colleagues. Shea (2007) concluded that female instructors found the flexibility of online education accommodated other life needs such as child care and family obligations. Kampov-Polevoi’s (2010) qualitative research also found that the flexibility of online education is important to instructors due to a desire to balance work with other life responsibilities.

Flexibility also appears to be equally important to both full-time as well as adjunct instructors. Chapman’s (2011) study of online education motivators for full-time and adjunct
faculty found that both groups identified flexibility as the number one motivator for teaching online. Flexibility is clearly an important motivator for faculty participation in online education and measures of such will be included in the research study.

**Workload concerns.** While the perceived level of flexibility offered by online education has been established by the literature as a powerful faculty motivator, faculty member concerns regarding increased workloads associated with online education can be a powerful inhibitor to participation in online education (Boerema et al., 2007; Orr et al., 2009; Shea, 2007; Wasilik & Bolliger, 2009). Both Conceição (2006) and Mitchell (2009) posit that online education requires a great deal of work on the part of online instructors. In his study at a large community college, Mitchell (2009) found that the increased frequency of instructor-student interactions was largely the cause for the large workload. Orr et al. (2009), by contrast, found in their qualitative study that the requisite time investment for faculty to develop a quality online course is the prime driver behind faculty member workload concerns. Sieber (2005) contends that online courses actually require much more work than faculty initially expect, due primarily to having to learn both the technology and pedagogy necessary for online instruction.

Faculty member concerns about the aforementioned workload associated with online education can act as a demotivating factor in faculty participation. For example, Boerema et al. (2007) performed a qualitative study of instructors for a single online course and concluded that “…tension exists between aspiring to provide high quality interesting learning opportunities and the workload and time demand realities of enacting this online” (p. 764). Shea’s (2007) research found that while all faculty were demotivated to some extent by the prospect of increased work as a result of teaching online, full-time faculty were demotivated to a greater extent than were adjunct faculty. In their quantitative study, Wasilik and Bolliger (2009) also found that the “high
workload” of online courses was cited by a number of participants as a “negative aspect of online teaching” (p. 176). Bair and Bair (2011) found that while certain aspects of online education actually resulted in a decreased workload, there was significantly more workload associated in developing content as well as with providing online students with high-quality feedback. Workload concerns will need to be examined as part of the research project to determine the extent to which they influence faculty member decisions to participate in online education.

**Incentives and rewards.** Higher education institutions have offered a variety of incentives to faculty members in an effort to encourage faculty participation in online education. For example, Styron et al. (2009) suggest that faculty incentives could take the form of monetary compensation or university recognition. Sellani and Harrington (2002) argue that “… a substantial payment differential is an absolute requirement to sustain excellent online instructors” (p. 140). This argument is bolstered by the results of Chapman’s (2011) study, which found that “stipends for professional development” and “higher pay” ranked first and second, respectively, as motivators for traditional faculty to teach online (p. 9). Additionally, Beck (2012) found in his dissertation that a correlation existed “…between exposure to incentives and enthusiasm to teach online” (p. 128). Hartman, Dziuban and Moskal (2007) suggest that higher education administrators need to be aware of the need for incentives for online teaching and that faculty incentives should be integrated into an institution’s online education plan.

Financial incentives for participation in online education may be more effective for different sub-groups of faculty. For example, Shea (2007) found that financial incentives were a more powerful motivator among less experienced instructors. Osika et al. (2009) found that financial incentives were more effective for faculty members who do not already utilize
technology. In their study, T. Green et al. (2009) concluded that adjunct faculty members are more highly motivated to teach online by the prospects of financial incentives than are other sub-groups of faculty members.

Incentives or rewards for faculty participation in online education are not limited to financial compensation. For example, Cook et al. (2009) define rewards as “… salary increase, merit pay, promotion, release time, royalties and recognition” (p. 154). Huang and Hsia’s (2009) study of Taiwanese faculty members found that “tenure and promotion incentives” was an encouraging factor for faculty participation in online education. Similarly, Chapman (2011) found that approximately 22% of tenured faculty identified “opportunities for promotion or increase in rank” as a motivator for participation in online education. Styron et al. (2009) found that administrators may create letters of commendation for faculty participation in online education. Such letters could then be placed in the faculty member’s file and used to support tenure and/or promotion applications (Styron et al., 2009).

While incentives can be a powerful motivator, the perceived inadequacy of incentives can demotivate faculty from participating in online education. In research conducted by Cook et al. (2009), “insufficient rewards” was found to be the top barrier to faculty adoption of online education. Likewise, research conducted by T. Green et al. (2009) found that approximately 49% of faculty respondents cited “lack of sufficient financial compensation in comparison to workload” as a demotivating to participation in online education (p. 7). Shea (2007) found that non-tenure track and untenured faculty are more likely to be discouraged by inadequate financial compensation for the development and teaching of online courses.

Interestingly, the recent Conflicted: Faculty and Online Education report (I.E. Allen et al., 2012) found that a dichotomy exists between higher education administrators and faculty
members regarding compensation for online teaching. Indeed, approximately 58% of the 591 higher education administrator respondents either “agree” or “strongly agree” that their institution has a fair system for compensating online instructors. By contrast, only 30% of the 4,564 faculty member participants shared this view. Tabata and Johnsrud (2008) may be able to partially explain these disparate views, as they indicate that while the practice of compensating online course development is commonplace, providing extra compensation for the delivery of online courses is not. Certainly the issues of incentives, rewards and compensation for online instruction are important to faculty participation in online education and, as such, will be included in the research study.

**Perception of peer support.** Several studies cite the importance of a faculty member’s perception of peer support, or lack thereof, for online education as important to the faculty member’s willingness to participate in an online education environment (Huang & Hsia, 2009; Osika et al., 2009; Shea, 2007; Ulmer et al., 2007). Ulmer et al. (2007), for example, found in their survey of 137 faculty members that experienced faculty members did not believe that their department colleagues viewed online education positively, which may in turn act as a disincentive for faculty to teach online. Shea (2007) found that younger instructors were more highly demotivated than their older colleagues by fears that others may question the quality of online instruction. While not described as a powerful inhibitor, Huang and Hsia (2009) did find in their study that a “lack of peer support” is a moderately demotivating factor in faculty member participation in online education (p. 397).

The aforementioned studies suggest that negative peer support can act as an inhibitor to faculty member participation in online education. Positive peer support can, however, work as a motivating force for faculty member involvement in online education. For instance, Osika et al.
(2009) conducted research that found that instructors with little technology experience were motivated to use technology, including online learning technology, by positive peer pressure. In a study of online instructors, Lefebvre (2009) found that formal peer mentoring systems were highly regarded instructor resources. Lesht and Windes (2011) found in their qualitative study that faculty members who are skeptical of online instruction can be positively motivated to participate by seeing their faculty peers be successful in a higher education online learning environment.

The recent Conflicted: Faculty and Online Education report (I.E. Allen et al., 2012) suggests there is cause for concern, as only 38% of faculty respondents “agreed” or “strongly agreed” with the statement “online education can be as effective in helping students learn as in-person instruction” (p. 13). The influence of the perception of peer support, both positive and negative, will be included as a variable for study in the research project.

**Perception of institutional support.** Research suggests that the extent to which a faculty member perceives their institution supports online education can influence the faculty member’s motivation to teach online (Cook et al., 2009; T. Green et al., 2009; Kampov-Polevoi, 2010; Orr et al., 2009; Osika et al., 2009). A faculty member’s perception of their institution’s level of support for online education includes the extent to which they believe their institution truly values online education and is committing appropriate training, technology resources, and human resources to online education initiatives (T. Green et al., 2009; Huang & Hsia, 2009; Kampov-Polevoi, 2010; Orr et al., 2009; Tabata & Johnsrud, 2008). For example, in a survey of 135 faculty members conducted by T. Green et al. (2009) it was found that approximately 72% of respondents indicated that “increased institutional support” would act as a motivating factor for them to teach online (p. 7). Orr et al. (2009) conclude that integration of online education
into an institution’s mission will help to build acceptance for online learning. The importance of
the support of institutional leaders to the success of online education initiatives is highlighted by
Christie and Jurado (2009).

Technology and training support are also crucial components of institutional support for
online education. Borrego (2010) posits that adequate technology support infrastructure is
crucial to the success of any online learning initiative and urges institutions to ensure such is in
place prior to moving to an online education environment. Tabata and Johnsrud (2008) cite the
importance of the availability of training for faculty in online learning technologies as an
important influence in their decision to participate in online instruction. Adequate institutional
support of the actual online learning environment is highlighted by Cook et al. (2009) as an
important factor in faculty motivation to teach online. Al-Salman (2011) agrees, citing the
importance of university sponsored technology training workshops to faculty participation in
online education.

While overt institutional support for online education has been shown to be a positive
motivator for faculty participation, lack of support can be a significant inhibitor. Huang and
Hsia (2009), for instance, concluded from their study that “lack of administrative support” and
“lack of technical support” are two of the top barriers to faculty participation in online education
(p. 396). Similarly, Cook et al. (2009) found that non-online education adopters shared concerns
regarding insufficient institutional technology support for online education. Interestingly, in
their quantitative study of 2,048 faculty members, Tabata and Johnsrud (2008) found an inverse
relationship between faculty member participation in distance education and the extent to which
faculty members believe their institution values distance education. Tabata and Johnsrud (2008)
suspect this surprising finding may be due to tensions between administrators and faculty or due
Intrinsic Motivators for Faculty Participation in Online Education

**Faculty member technology self-efficacy.** Faculty members can also be motivated to participate in online education by positive self-efficacy regarding their ability to teach in an online environment (Tabata & Johnsrud, 2008; VanHorn, Pearson, & Child, 2008). Indeed, Gibson et al. (2008) indicate that faculty members often express concerns regarding the stability of online education technology. In their study of 240 communications faculty members, VanHorn et al. (2008) found that “Computer self-efficacy was positively related to teacher motivation in the online course” (p. 17). Likewise, Tabata and Johnsrud (2008) discovered a positive relationship between an individual faculty member’s perceived technology aptitude and his or her likelihood of participating in online education. Tabata and Johnsrud (2008) also found that the perception of strong instructional skills is also a motivator for faculty to participate in online education. Online technology self-efficacy was found by Wang and Wang (2009) to increase a faculty member’s perceived ease of use of online learning systems. Computer self-efficacy was also identified by Waheed and Jam (2010) as a significant motivating factor for faculty to teach online. In a meta-analysis of four studies, Cook and Ley (2004) found “personal motivation to use technology” as one of the strongest motivators for faculty to participate in online education.

The literature also suggests a strong link exists between technology self-efficacy and institutional training programs (T. Green et al., 2009; Tabata & Johnsrud, 2008; VanHorn et al., 2008). Research conducted by T. Green et al. (2009) found that the prospect of continuous technology training is the strongest motivating factor for faculty participation in online education. Vanhorn et al. (2008) posit that lack of technical proficiency will discourage faculty
participation in online education and, as such, institutions should seek to make technology training readily available to improve the technology self-efficacy of faculty members and thereby increase faculty member participation in online education. Tabata and Johnsrud (2008) argue that such training should also include pedagogical instruction on how best to transition from a traditional classroom learning environment to an online classroom. Faculty member technology self-efficacy, and the extent to which training can improve self-efficacy, are important factors to be considered in this research study.

**Faculty member perceptions regarding the efficacy of online education.** Several researchers including Styron et al. (2009), Koenig (2010), Sellani and Harrington (2002), and Regan et al. (2012) have found that many faculty members harbor negative perceptions regarding the efficacy of online education. Schulte (2010) found that much of the doubt faculty express towards the efficacy of online education is a result of comparisons made between online learning and traditional instruction. Regan et al (2012) found in their qualitative study that faculty participants felt “disconnected” from students when teaching in an online environment (p. 208). This disconnect was primarily a result of the faculty members’ perception that online education communication tools are insufficient for creating engaging learning environments (Regan et al., 2012). By comparison, Koenig (2010) found in his quantitative study of 160 faculty members that while instructors reported a similar difficulty connecting with students, many of the negative opinions of online education were driven by a belief of the medium’s unsuitability for instruction in quantitative subjects. Results from a study conducted by Ward et al. (2010) agreed with Koenig’s (2010) findings, indicating that many faculty members doubt the efficacy of online instruction for teaching complex topics.

Negative perceptions regarding the efficacy of online education have been found by
several studies to be a negative motivator for faculty participation in online education environments (Cook et al., 2009; Osika et al., 2009; Styron et al., 2009; Wickersham & McElhany, 2010). Oskia et al. (2009) found that, among faculty who do not regularly utilize technology, a negative perception of online education was the primary inhibitor of their involvement in online education. Similarly, faculty member concerns about the quality of online courses were cited by Cook et al. (2009) as a top inhibitor to faculty participation in online learning. Administrators were found by Styron et al. (2009) to agree that faculty support for the efficacy of online education is crucial to the success of online learning initiatives. Wickersham and McEhlany (2010) found that faculty concerns regarding the efficacy of online learning can be addressed, at least in part, by providing sufficient time and support for the development of quality online courses. The extent to which faculty members perceive online learning as having value is important when considering their probability of participating in online education and, as such, will be included in the research study.

**Faculty member technology experiences.** The literature suggests that a range of technology experiences can influence a faculty member’s perception of online education as well as their motivation to participate in online education (Huang & Hsia, 2009; Kampov-Polevoi, 2010; Osika et al., 2009; Ulmer et al., 2007; Wasilik & Bolliger, 2009). Ulmer et al. (2007) conducted a quantitative study which included data from 137 faculty members. In their study, Ulmer et al. (2007) found that experienced online instructors were much more positively inclined towards the modality of online teaching than were those faculty members that had not previously taught online. Likewise, Shea’s (2007) research found that less experienced online instructors reported the “… absence of face-to-face interaction decreased their desire to teach online” (p. 80). Ulmer et al. (2007) suggest that faculty experience utilizing online learning technologies is
a key component to successful online education programming. McMurty (2012) posits that higher education institutions consider hiring faculty with previous online teaching experience both because they are likely to be more comfortable teaching online and as a way to help encourage other faculty to participate in online education.

Positive experiences with technology can also act as a motivating force for faculty to participate in online education. For instance, Osika et al. (2009) found in their survey of 36 faculty members that previous successes with other technologies, such as email and word processing tools, was the top factor influencing faculty member decisions to utilize online education technology. Similarly, Kampov-Polevoi (2010) found that most of the online educators in her study had previously used online learning tools to augment their traditional classroom instruction. The results from Wasilik and Bolliger’s (2009) study, however, caution that negative experiences with technology can be a key inhibitor to faculty participation in online education.

Faculty member experiences with formal training in online instruction can also play an important motivational role in their decision to participate in online education. In their study, Huang and Hsia (2009) found that those faculty members that had previously participated in formal web-based training were more likely to want to participate in online education than were those faculty members that did not have such training. A major conclusion from a study conducted by Batts et al. (2010) was a need for more training and development opportunities for faculty to teach online. McMurty (2012) agrees, and goes further by suggesting that such training is critically important for those faculty members with a culture of traditional instruction that have had little or no exposure to online education. Experiences with technology in general, and online technology in particular, will be examined as part of the research project to determine
the extent to which they influence faculty member’s willingness to participate in online education.

**Desire for professional growth.** A personal, intrinsic desire for professional growth is cited by the literature as being another potential motivator for faculty participation in online education (Conceição, 2006; Hiltz et al., 2007; Kampov-Polevoi, 2010; Wasilik & Bolliger, 2009). Wasilik and Bolliger (2009) found, for instance, that some faculty cited the availability of opportunities for professional development as a positive aspect of participating in online education. Similarly, Kampov-Palovoi found that “professional growth” and “skill expansion” were both cited as positive motivators for faculty (p. 5). Likewise, Hiltz et al. (2007) found in their focus group research that the prospect of professional development was a positive motivating influence for online instructors. Research conducted by Chapman (2011) found that “opportunities to use new technologies” and “opportunities to develop new competencies” were both highly rated motivational factors for faculty members to teach online (p. 6). Conceição (2006) suggests that the opportunity for faculty members to learn something new can be a rewarding aspect of faculty member participation in online education.

Higher education administrators seem to agree that professional growth can be a positive motivator for faculty to participate in online education. A recent qualitative study of higher education administrators conducted by Lesht and Windes (2011) concluded that administrators perceive that opportunities for skills expansion for those faculty members participating in online learning provide an incentive for their participation. Hillman and Corkery (2010) suggest that higher education institutions make clear to faculty members that formal opportunities for professional development are available for those seeking to participate as online education instructors.
**Desire to increase student access.** The benefits of increased student access due to the geographic and temporal flexibility of online education have been well established in the literature (Appana, 2008; Geith & Vignare, 2008; Lei & Govra, 2010; Olson & Hale, 2007b; Picciano et al., 2010). Nagel et al. (2011) argue that online education “decreases limitations and increases diversity among the student population” (p. 138). The literature suggests that faculty members often value the ability to increase student access to higher education (Hiltz et al., 2007; Meyer & McNeal, 2011; Nagel et al., 2011; Orr et al., 2009). Meyer and McNeal’s (2011) qualitative study of ten faculty found that the faculty participants perceived that online education “definitely increased students’ access to them” (p. 43). Results from another qualitative study conducted by Orr et al. (2009) highlighted faculty member regard for both the temporal and geographic flexibility of online education. Faculty participants appreciate how online education can “meet the needs of place-bound students” as well as allow students to “complete their degrees in a timelier manner” (p. 262).

Faculty members may be motivated to participate in online education by their perception that doing so will increase student access to higher education and, as a result, increase student diversity. Hiltz et al. (2007) conducted a mixed-methods study of faculty members in an effort to identify motivating and de-motivating factors for faculty participation in online education. The authors discovered that the ability of online education to “reach more diverse students” was rated as a top faculty member motivator for their participation in online education. The extent to which faculty members are motivated to participate in online education by the prospect of increased student access will be explored in the research study.

**Gaps in the Literature**

While research has been conducted regarding faculty motivation to adopt technology and,
more specifically, motivation to teach online, several gaps in the literature exist. First, the
aforementioned studies have not employed a theoretical research framework which explores the
full range of extrinsic and intrinsic motivators for faculty participation in online education.
Additionally, previous studies have principally been conducted at large, public universities, the
results of which may not be as applicable to smaller higher education institutions. Finally, the
studies focus primarily on faculty members who either have experience teaching online courses
or have expressed an interest in online teaching. This research will add to the literature by
employing a synthesized theoretical framework to explore the full range of potential motivating
factors for participation in online education at a small, liberal-arts institution among faculty
member participants with all levels of experience and interest in online education.
Chapter III: Research Design

A thorough explanation of the research design employed in this study will be presented in this chapter. Specifically, this chapter contains a detailed description of the research design in which the research design, sampling strategy, data collection, data analysis, threats to validity and reliability, and measures to protect human subjects will be presented.

Research Questions

This study seeks to determine the extent to which a variety of factors motivate or inhibit faculty participation in online higher education. This study seeks to address the following primary and secondary research questions:

1. To what extent do intrinsic factors influence a faculty member’s willingness to participate in an online education environment?
   a. To what extent do a faculty member’s perceptions of the relative advantage/usefulness of online education influence their willingness to participate in an online education environment?
   b. To what extent do social influence factors influence a faculty member’s willingness to participate in an online education environment?

2. To what extent do extrinsic factors influence a faculty member’s willingness to participate in an online education environment?
   a. To what extent does a faculty member’s perceived level of compatibility with online technology influence their willingness to participate in an online education environment?
   b. To what extent does a faculty member’s perception of the intrinsic value of online education influence their willingness to participate in an online education environment?
The first research question attempts to determine the extent to which extrinsic factors influence a faculty member’s decision to participate in an online education environment, while the second question looks to intrinsic factors. The questions seek to include input from all types of faculty members at a small, liberal arts university including tenure track, non-tenured, full professors, adjunct professors, and instructors from various different disciplines. The sub-questions will attempt to determine the extent to which a number of factor categories influence faculty willingness to participate in an online education environment. The overall goal of the questions is to isolate those factors that are most important to faculty participation in online education in an attempt to inform institutional efforts aimed at increasing faculty member participation rates.

The dependent variable in this study is faculty member willingness to participate in an online education environment. A review of the literature has identified a number of independent variables which will be included:

1. Perceived relative advantage/usefulness – perceived flexibility, rewards & incentives, perceived workload
2. Social influence - perception of peer support, perception of institutional support
3. Perceived level of compatibility – self-efficacy, perception of online education, experience with technology
4. Perceived intrinsic value – desire for professional growth, desire for increased student access

Research hypotheses.

1. To what extent does a faculty member’s perception of the relative advantage/usefulness
of online education influence their willingness to participate in an online education environment?

Independent variable: relative advantage/ usefulness

Dependent variable: willingness to participate in an online education environment

H₀: There is no significant relationship between a faculty member's perception of the usefulness/relative advantage of online education and their willingness to participate in an online education environment.

2. To what extent do social influence factors influence a faculty member’s willingness to participate in an online education environment?

Independent variable: social influence factors

Dependent variable: willingness to participate in an online education environment

H₀: There is no significant relationship between social influence factors and a faculty member's willingness to participate in an online education environment.

3. To what extent does a faculty member’s perception of compatibility with online education influence their willingness to participate in an online education environment?

Independent variable: perception of level of compatibility with online education

Dependent variable: willingness to participate in an online education environment

H₀: There is no significant relationship between a faculty member's willingness to participate in an online education environment and their perception of compatibility with online education.

4. To what extent does a faculty member’s perception of the intrinsic value of online education influence their willingness to participate in an online education environment?

Independent variable: perception of the intrinsic value of online education
Dependent variable: willingness to participate in an online education environment

H₀: There is no significant relationship between a faculty member’s willingness to participate in an online education environment and his/her perception of the intrinsic value of online education.

Research Design

The purpose of this study is to identify the factors that have influenced a faculty member’s willingness to participate in online teaching in a small, private liberal arts higher education institution. The results of this study will be used to inform efforts by institutional strategic planning to develop the climate, policy, and possible incentives, to increase the rate of faculty participation in online higher education. The research question and sub-questions are constructed in such a way as to determine the extent to which the variables contribute to the outcome of faculty willingness to participate in online education. As such both questions can be, according to Maxwell (2005), categorized as variance questions.

A quantitative research methodology is ideally suited to examining variance questions (Gall, Gall, & Borg, 2007). This study will use both a descriptive and correlational design. Descriptive research is employed in educational research primarily as a means to describe a given situation and determine “what is” (Gall et al., 2007). Correlational research, by contrast, uses statistical methods to identify relationships between variables (Gall et al., 2007). A number of potential independent variables have been identified through a review of the literature. Descriptive research will be used along with a survey questionnaire to identify the independent variables that influence a faculty member’s willingness to participate in an online education environment. The average scores of each of the potential variables will be analyzed via descriptive methods. This will allow for inclusion of the most influential variables in the
subsequent correlational analysis.

While descriptive research is ideal for identifying important variables, it lacks the ability to allow for meaningful statistical comparison of independent variables (Gall et al., 2007). Rather, the need to compare the relationships of a large number of variables at a single point in time is ideally met by a correlational research design (Gall et al., 2007). As such, a correlational research design will be employed sequentially after the descriptive research. Correlational research will allow the researcher to employ various statistical methods, including multiple linear regressions, to statistically determine the degree of influence of the various aforementioned independent variables on the dependent variable of faculty willingness to participate in an online education environment.

Though a combination of descriptive and correlational research will provide information regarding the relative influence of factors on faculty willingness to participate in an online education environment, the results will not be able to decisively determine a cause-and-effect relationship. The results of this study will ideally be leveraged by institutional planning efforts as part of a future experimental study. The outcomes of an experimental study can then be used to confirm any suspect causal relationships among the variables (Gall et al., 2007).

**Research site and participants.** The population for this study included all faculty members at St. Bonaventure University, a liberal arts university in the northeast United States. St. Bonaventure University enrolls approximately 2,000 undergraduate and 500 graduate students in its approximately 50 undergraduate and 20 graduate degree programs from the schools of Arts & Sciences, Business, Education, Journalism & Mass Communications, and Franciscan Studies. The St. Bonaventure University faculty is comprised of 154 full-time and 101 part-time faculty members. Approximately 54.5% of the faculty holds a terminal degree.
Females make up approximately 45% of the faculty population. Full-time faculty at St. Bonaventure are on a 4/4 teaching load. Approximately 92% of the faculty identified their race as “white”, with the remaining 8% identified as “Nonresident alien”, “Hispanic/Latino”, “American Indian or Alaska Native”, “Asian”, or “Black or African American.” St. Bonaventure University currently offers only a limited number of fully online courses during the summer term. The University does, however, have plans to offer fully online degree programs beginning in the fall of 2013.

This site was selected due to its low number of currently available online courses coupled with its desire to expand its online offerings. The researcher is currently employed in a technology leadership position at the research site and is aware of apathy and outward hostility towards online education on part of some members of the faculty. The combination of low numbers of online courses, a strong desire on the part of the administration to increase online course offerings, and the aforementioned knowledge of conflicting levels of support for online education made this site an ideal location to research factors that influence faculty participation in online education.

The population group for this study was inclusive of all types of faculty members including full-time faculty, part-time faculty, tenured faculty, tenure-track faculty, non-tenure track faculty and all levels of faculty rank. The study population was also drawn from each of the research site’s five schools including the Schools of Business, Education, Arts & Sciences, Journalism & Mass Communication, and Clare College. The study population totaled all 255 faculty members and included both graduate and undergraduate instructors. All faculty of record during the fall 2012 semester were invited to participate in the study via an electronically distributed survey instrument.
The study employed a simple random sample method whereby all faculty of record were invited to participate. A simple random sample allows the researcher to select study participants from the population in an independent and equal manner (Gall et al., 2007). Simple random sampling has the advantage of being able to “generalize to a larger population within margins of error that can be determined by statistical formulas” (Gall et al., 2007, p. 170). While respondent demographic information were gathered during data collection, none of the research questions are based upon demographics. As such, no sampling stratification was needed and simple random sampling was appropriate (Gall et al., 2007).

A priori power analysis of the necessary sample size for the aforementioned population yielded a desired sample size of 154. A sample size of 154 participants would provide for a 95% confidence level with a 5% confidence interval. A 90% confidence level with a 5% confidence interval can be achieved with 132, whereas 185 participants would be needed to achieve a 99% confidence level with a 5% confidence interval.

While the researcher has professional relationships with several members of the study population, no research relationship was established outside of electronic invitations to participate in the research study. The invitations were constructed in such a way as to be clear that participation in the research study is voluntary and that all responses will remain confidential. An incentive of a choice between a free drink at the campus coffee shop and an online retailer gift certificate was offered to each research participant in an effort to encourage participation.

**Data collection.** Quantitative research data was gathered to determine the extent to which categories of intrinsic and extrinsic motivating factors influence a faculty member’s willingness to participate in an online education environment. A cross-sectional survey design
was employed to allow for the collection of data at one point in time (Muijs, 2011). The research data was collected via a web-based survey instrument that was administered to the entire faculty. The faculty participants were only asked to complete the survey instrument. The survey instrument was designed to solicit data regarding faculty member motivations for participating in an online education environment.

Questions from two existing surveys were synthesized into a survey instrument for this study. Contributing instruments were from the works of Stewart et al. (2010) and Shea (2007). Both instruments were informed by literature reviews. Stewart et al. (2010) performed a principle component analysis with Varimax rotation to determine which items to include in their survey. Shea (2007) used a combination of a pilot test and focus group reviews to ensure the validity and reliability of his survey. Shea (2007) also performed a factor analysis to determine the extent to which his instrument items measured faculty motivators and inhibitors to teach online.

The theoretical framework and the literature review have informed the structure of the survey instrument. A normalized, 7-point Likert scale was used for all but demographic questions. The survey instrument questions were designed to solicit ordinal data from respondents regarding the strength of extrinsic and intrinsic factors on their willingness to teach online. Additional question types were included in an effort to obtain nominal data regarding respondent demographic characteristics.

Survey items were grouped into one of several dimensions as informed by both the literature review and theoretical framework (see Appendix A). These dimensions included perceived relative advantage/usefulness, social influence, perceived level of compatibility, and perceived intrinsic value. Questions were then further categorized into ten subscales relative to
each dimension as seen in Figure 7.

Figure 7. Survey Instrument Organization
The subscale of “perceived flexibility” seeks to determine the value respondents place on the flexibility advantage of online education. The “incentives” subscale was designed to determine the extent to which respondents value compensation and other rewards that may be associated with online teaching. The “perceived workload” subscale solicited responses concerning respondents’ beliefs regarding the workload involved with online instruction. The subscales of “peers” and “institution” seek to determine the influence faculty perceptions of peer and institutional support, respectively, for online education. Questions in the “self-efficacy” subscale were intended to determine respondents’ views on their technology capabilities in general and online teaching capabilities in particular. The “perception of online education” subscale seeks to determine how respondents feel about the efficacy of online education. The “experience with technology” subscale contains items intended to determine the level of a respondent’s experience with general and online learning technologies. The intent of the “professional growth” subscale is to determine the extent to which respondents look to teaching online as a professional growth opportunity. Finally, the “student access” subscale seeks to determine the extent to which respondents believe online education can help reach new students. Variations of a seven-point Likert scale are used with all questions save demographic questions.

The instrument also included a section to measure respondent intent to participate in online education. Two open-ended questions were also included to solicit from each respondent a list of motivating and inhibiting factors impacting their willingness to teach in an online education environment. As previously mentioned, the survey instrument concluded with a series of demographic questions. Concluding a questionnaire with demographic questions is advisable.
as they will be less likely to deter respondents from beginning the survey (Muijs, 2011).

Questions were presented to gather nominal demographic data including respondent age, gender, tenure status, rank, academic school, and years of teaching. Demographic questions were written and included in accordance with the guidelines offered by Patten (2011), including sub-categorization of demographic answer categories and placing the demographic questions at the end of the questionnaire.

Qualtrics, a web-based survey tool, was used to distribute the electronic survey. A web-based instrument was preferred due to its ability to eliminate the need for separate data entry and also for the extent to which a web-based survey instrument can reduce the administrative overhead of survey research (Nulty, 2008). A pilot survey was distributed to 10% of the study population. The pilot survey contained additional space for completer comments and suggestions which resulted in several changes to the instrument.

Pilot respondents were precluded from participating in the main study. A pilot survey allowed for quality improvements to be made to the instrument (Gall et al., 2007). The pilot survey concluded one week prior to the distribution of the survey instrument, which provided time for necessary adjustments to be made to the instrument.

Pre-contact letters have been found to increase survey response rates (Gall et al., 2007) and, as such, a pre-contact letters were printed and mailed to participants to inform them of the importance of the survey one week prior to the distribution of the electronic survey. Periodic reminders were sent to participants in an attempt to increase the response rate due to the propensity of web-based survey instruments to have lower average response rates relative to other instruments (Jin, 2011). Non-responders were sent an initial reminder four days after the initial survey has been distributed. A second reminder was sent eight days after the initial
survey. A final reminder was sent two weeks after the initial survey distribution.

Ensuring reliability and validity of research instruments is crucial in quantitative research (Muijs, 2011). Reliability, or the extent to which a measurement is consistent, was confirmed via a series of internal consistency tests as recommended by Muijs (2011). Internal consistency reliability concerns the extent of correlation between subscale items (Muijs, 2011). The research instrument was designed to employ multiple questions in each sub scale to help improve the level of internal consistency. Cronbach’s alpha tests were used to establish internal consistency for all scale items with ten or more variables. Mean inter-item correlation values were used to validate the consistency of scale items with less than ten items.

Instrument validity is a multi-dimensional concept composed of three distinct measurements; content validity, criterion validity and construct validity (Muijs, 2011). Content validity seeks to determine if the content of the instrument is appropriate to measure the research concept (Muijs, 2011). Content validity of the survey instrument in this study has been provided by a thorough review of the literature. Indeed the literature provides the basis for many of the research instrument’s items. Content validity was further established through a face validity test conducted during the survey pilot. Criterion validity, or the extent to which survey instrument items correlate with other established measures (Muijs, 2011), was established by comparing the study’s results with results from similar studies. Finally, construct validity refers to the extent to which survey subscales measures the effect intended by the sub-scale (Muijs, 2011). Construct validity was established by a factor analysis of the subscales.

Data analysis. Descriptive research methods were first utilized to cleanse the data. Descriptive statistics will be reported for each of the items. Frequencies were calculated for each item to remove missing responses. Composite variables were then created for each of the ten
survey instrument subscales. Reverse-coding was then used when needed to ensure all variables included in each composite variable scale in the same direction. A reliability analysis was conducted to confirm the appropriateness of the makeup of each composite variable. Central tendency and spread were then calculated for each composite variable to determine which subscales had the highest factor score.

Each of the research hypotheses seeks to determine the extent to which each of four dimensions, perceived relative advantage/usefulness, social influence, perceived level of compatibility, and perceived intrinsic value influences a faculty member’s willingness to participate in an online education environment. As such a second level of composite variables needed to be created for each of the four dimensions. The second-level composite variables are comprised of their corresponding subscale composite variables (see Figure 6). Central tendency and spread were calculated for each of the second level composite variables, again to determine which have the highest factor scores. A third, and final, level of composite variables was created for the categories of “intrinsic” and “extrinsic.” These two third-level composite variables were necessary to answer the two primary research questions which seek to determine the extent to which extrinsic and intrinsic factors influence faculty member willingness to participate in online education.

While each of the composite independent variables and the dependent variable are ordinal variables measured on a 7-point Likert scale, the variables were treated as continuous to allow for analysis by parametric statistical tests. Treating ordinal Likert values as continuous for purposes of parametric analysis has been found to be valid (Norman, 2010). While there is debate on this topic in the research community, many researchers have long advocated for the efficacy of parametric statistical tests on ordinal data (J. Kim, 1975; Labovitz, 1967; Norman,
2010; Rasmussen, 1989). This approach is particularly effective when used with composite ordered variables (Bollen & Barb, 1981). Factor analysis and Cronbach’s alpha testing were utilized in an effort to ensure the composite variable sub scales are valid and reliable. Furthermore, use of the 7-point Likert scale also increases the reliability of the statistical tests, as reliability generally increases as the number of scale points increases (Bollen & Barb, 1981; Rasmussen, 1989).

Correlational research techniques were used to determine if a relationship existed between each of the independent composite variables and the dependent variable. Multiple linear regressions are best suited to determining if independent variables are predictors of a dependent variable (Muijs, 2011). A multiple linear regression is a statistical technique for examining the relationships between a number of independent variables and a dependent variable (Muijs, 2011). Use of multiple linear regressions does assume, however, that there is a linear relationship between the independent and dependent variables and that the independent variables are not too strongly correlated to each other (Muijs, 2011). Each of the research hypotheses seeks to determine the extent to which a number of dimensions influence a faculty member’s willingness to teach online. Each dimension is comprised of multiple independent composite variables. Multiple linear regression testing was therefore used to isolate the influence each composite variable had on the dependent variable of faculty willingness to teach online.

To ensure the validity of the use of multiple linear regressions, the aforementioned assumptions for using multiple linear regressions were tested via a casewise diagnostic test to confirm linearity and tolerance testing to ensure multicollinearity did not exist between the independent variables. Regressions and assumption testing were also conducted for the second and third level composite independent variables, providing for three layers of hierarchical
Adjusted $r$ square values were calculated for all three layers of analysis to determine the statistical fit of each layer. B coefficients were calculated for each factor to determine the direction of any relationships between the dependent and independent variables. Coefficient betas were used to determine the strength of relationships between each of the independent variable factors and the dependent variable. Finally, significance levels of each independent variable were examined to determine the extent to which their relationship with the dependent variable is statistically significant at the 95% confidence level. The Statistical Package for Social Sciences Software (SPSS) version 20.0 was used to assist in all data analysis, including regression testing.

The instrument pilot commenced immediately upon reception of approval for both the research proposal and institutional review board assessment. Two weeks after the pilot test the survey instrument was administered to the population. Data collection lasted three weeks, after which data analysis commenced. The data was first screened. Composite variables where then created and tested for validity. Regressions were then performed on the composite variables. Data analysis lasted approximately three weeks. Subsequently, the results and conclusions chapters will be drafted for review by the dissertation team.

**Validity, Reliability and Generalizability**

A number of validity, reliability and generalizability threats are inherent to quantitative survey research (Butin, 2010; Creswell, 2009; Light, Singer, & Willett, 1990). Construction of a reliable and valid survey instrument is complex and difficult to accomplish (Butin, 2010). This study therefore employed a synthesized instrument utilizing two previously developed and tested instruments, as recommended by Butin (2010). The contributing instruments had previously been tested for validity. Permission for use in this study had been granted by the authors of both
contributing instruments (see Appendix B). A pilot test was also conducted with a random sample of the study population, as doing so is “... the best way to confirm the credibility and quality of your measures” (Light et al., 1990, p. 215). Pilot subjects were also asked to provide qualitative comments regarding their perception of the efficacy of instrument’s questions.

A further threat to validity of survey research is the extent to which individual survey items are susceptible to measurement error (Light et al., 1990). Each variable was, to the extent possible, measured by multiple questions for each sub scale in an attempt to mitigate this risk, as recommended by Light et al. (1990). The items included for each sub scale were informed by the theoretical framework and literature review. Additionally, a reliability analysis was performed on each composite variable to ensure the appropriateness of each included item.

Yet another threat to the generalizability of the research study is the population selection procedure utilized in quantitative survey research. At its core, quantitative research seeks to determine trends, opinions, or attitudes of a population by generalizing the study of a sample of the population (Creswell, 2009). Selection of the population is therefore crucial to ensure results from the sample population can be generalized to the population as a whole (Light et al., 1990). A simple random sample, whereby all members of the population have an equal chance to participate in the study, was employed as such a sampling method is best for generalizing sample results (Creswell, 2009; Light et al., 1990).

Non-response bias, or the extent to which the excluded responses of non-responders would impact the results of a study, is another threat to the validity of the study (Light et al., 1990). A variety of tactics were employed in an effort to achieve a high response rate including an introduction letter informing the participants of the survey, an incentive for completing the survey, and numerous follow-up messages to non-responders. In a further effort to reduce non-
response bias, a comparison of the respondent demographics to the population was conducted to ensure the respondents were demographically similar to the study population as suggested by Miller and Smith (1983).

**Limitations**

Several limitations exist with this research study. First, this study was conducted at a small, liberal arts university with little experience in the online higher education marketplace. Care should be taken in generalizing these results and recommendations to other institutions, and in particular institutions with a dissimilar profile from the study institution. It is possible, for example, that motivating factors for faculty members of a state, research-level institution would be different than were those found in this research study. Faculty members belonging to fully online institutions, such as several of the for-profit online educators, may also have different motivators and inhibitors than those included in this study.

Another limiting factor of this research is the inherent nature of the quantitative statistical analysis which was performed. The analysis, including the multiple linear regressions, was able to confirm with a high degree of confidence that relationships existed between the aforementioned variables and faculty willingness to participate in online education. This does not mean, however, that the relationship is causal. For example, while this research found a positive relationship between intrinsic factors and faculty member willingness to participate in online education, it is not definitive that any of the intrinsic factors caused faculty to want to participate in online education. Experimental research would be needed to help determine the degree of causality between any of the variables identified in this study and faculty willingness to participate in online education.

**Protection of Human Subjects**
As previously mentioned, this study was conducted at the institution of the researcher’s employment. As such, the researcher enjoyed a collegial relationship with several of the anticipated faculty member participants. The survey research was conducted in such a way as to ensure that the names of individual respondents are not directly attached to the survey answers. Even so, self-reported demographic information may allow the researcher to identify one or more participants. As such, the respondents’ answers will remain confidential. Data will only be published in aggregate form.

The population of respondents was drawn from instructional faculty at a higher education institution and, as such, did not include vulnerable subjects as defined by Creswell (2009). Nonetheless an informed consent form was developed and administered to each survey participant to ensure they were aware of how their information will be used and protected, as recommended by Light et al. (1990). Study participants were selected via a simple random sample, allowing for equal and independent opportunity for all members of the study population to participate in the study (Gall et al., 2007).

Additionally, the researcher’s role as Executive Director for Information Technology at the research site presented a possible threat to the validity of the study. The researcher is a strong proponent of online education and is actively involved in campus strategic planning regarding the expansion of online education initiatives. Such knowledge of the researcher’s bias had the potential to influence the responses of some participants (Trowler, 2011). To mitigate any such bias the participant invitation letter was carefully constructed with a clear statement of purpose as well as reassurance regarding the anonymity and confidentiality of all recipient responses. The research protocol, instrument, and communication materials were reviewed and approved by the Northeastern University Institutional Review Board (see Appendix C).
Summary

This study seeks to determine the extent to which a variety of factors motivate or inhibit faculty participation in online higher education. Survey research and quantitative methods were employed to gather and analyze data regarding motivating and inhibiting factors impacting faculty participation in online education. A survey instrument was developed to solicit information from faculty at the study site, St. Bonaventure University, regarding the identified dimensions and subscales. The survey instrument is a compilation of two previously tested and implemented survey instruments, and is grounded in the aforementioned theoretical framework and literature review. The survey was first piloted with a small group of respondents to ensure the validity of the instrument. Data was then collected from the full sample population via a web-based survey. Respondent data was analyzed with parametric statistical methods, including multiple linear regressions, to determine the extent to which each of the dimensions and subscales of motivational factors influence a faculty member’s decision to participate in online education. Survey responses have been kept strictly confidential and reported only in aggregate to protect the privacy of individual respondents. The results of this research will likely assist higher education administrators as they seek methods for encouraging faculty members to participate in new or expanded online education programming.
Chapter IV: Research Findings

The purpose of this research was to find the extent to which a variety of motivating factors influence a faculty member’s willingness to participate in an online education environment. As previously mentioned, a survey instrument was constructed and distributed in an effort to measure the influence of a number of potentially motivating variables on faculty member willingness to teach online. Data was collected and analyzed via a variety of statistical methods, the results of which are presented below.

Survey Administration

The survey instrument was first piloted with a random sample of 10% of the research population. Minor adjustments were made to the survey based upon feedback from the pilot completers. Surveys were then distributed to the entire population of teaching faculty at St. Bonaventure University, less the aforementioned pilot group. In total, 229 St. Bonaventure University instructors were invited to complete the survey instrument. Upon the conclusion of the data collection period, 142 surveys were completed and submitted. This yielded a survey response rate of 62%, which is slightly below the pilot group response rate of 65.3%. The aforementioned a priori power analysis of the target population concluded that 154 responses were necessary for a 95% confidence level with a 5% confidence interval. While this response rate was not achieved, the 142 responses did exceed the responses needed to achieve a 90% confidence level with a 5% confidence interval.

Respondents’ Demographic Profile

A demographic comparison of respondents and the population was conducted to determine the extent to which the respondents were demographically similar to the population. Demographic comparisons were limited to demographic data collected by the survey instrument.
as well as the availability of comparable demographic information on the target population as
collected and archived by the St. Bonaventure University Office of Institutional Research.

Demographic comparison categories included gender, tenure status, academic rank and academic
school. The complete demographic analysis can be found in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Category</th>
<th>Population</th>
<th>Pop %</th>
<th>Sample</th>
<th>Sample %</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>139</td>
<td>55%</td>
<td>75</td>
<td>53%</td>
<td>0.02</td>
</tr>
<tr>
<td>Female</td>
<td>116</td>
<td>45%</td>
<td>67</td>
<td>47%</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Tenured</td>
<td>98</td>
<td>38%</td>
<td>59</td>
<td>42%</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Non-Tenured</td>
<td>157</td>
<td>62%</td>
<td>82</td>
<td>58%</td>
<td>0.03</td>
</tr>
<tr>
<td>Full Professor</td>
<td>47</td>
<td>18%</td>
<td>28</td>
<td>20%</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>41</td>
<td>16%</td>
<td>22</td>
<td>16%</td>
<td>0.00</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>41</td>
<td>16%</td>
<td>31</td>
<td>22%</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Lecturer</td>
<td>25</td>
<td>10%</td>
<td>18</td>
<td>13%</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Adjunct</td>
<td>101</td>
<td>40%</td>
<td>42</td>
<td>30%</td>
<td>0.10</td>
</tr>
<tr>
<td>Arts &amp; Sciences</td>
<td>128</td>
<td>50%</td>
<td>69</td>
<td>48%</td>
<td>0.02</td>
</tr>
<tr>
<td>Business</td>
<td>30</td>
<td>12%</td>
<td>22</td>
<td>15%</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Clare</td>
<td>26</td>
<td>10%</td>
<td>9</td>
<td>6%</td>
<td>0.04</td>
</tr>
<tr>
<td>Education</td>
<td>51</td>
<td>20%</td>
<td>32</td>
<td>22%</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Journalism</td>
<td>20</td>
<td>8%</td>
<td>11</td>
<td>8%</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The target population was comprised of 55% males and 45% females. The respondent
group was comprised of 53% males and 47% females, resulting in a very similar gender profile.
Tenured faculty members accounted for 38% of the target population, with 62% being non-
tenured. The respondent group was comprised of 42% tenured faculty members, which
represents a slight oversampling of tenured at the expense of non-tenured instructors.
The academic rank of the respondents was similar to the target population in all academic rank categories, save one. Full professors represent 18% of the target population and comprise 20% of the respondent group. Associate professors were equally represented in both the target population and respondent group at 16%. Assistant professors were slightly over-represented in the respondent group, with 22% of respondents identifying as an “Assistant Professor”, as compared to the target population’s percentage of associate professors of 16%. Lecturers accounted for 10% of the respondent group which is comparable to their 13% representation in the target population. The largest demographic difference in the academic rank category, and indeed in the entire demographic comparison, was a marked under-representation of adjunct faculty in the respondent group. Indeed, while adjunct comprised 40% of the target population, they only represented 30% of the respondent group. Several adjuncts declined to complete the evaluation and indicated to the researcher that the study did not seem to apply to them, as they only taught one or two courses.

Academic school, the final demographic category, was similar across all areas. Faculty members from the School of Arts and Sciences represent 50% of the target population and accounted for 48% of the respondent group. The School of Business faculty members comprise 12% of the target population and were slightly over-represented in the respondent group at 15%. Clare College, the institution’s general education college, faculty members were, by contrast, slightly under-represented in the respondent group at 6%, whereas they account for 10% of the target population. The School of Education faculty members comprised 20% of the target population, which is slightly lower than the 22% they represented in the respondent group. Finally, the 8% representation of faculty from the School of Journalism was consistent across both the target population and the respondent group.
Overall the demographic characteristics of the respondent group were similar to those of the target population. As previously mentioned, one area for improvement is the extent to which adjunct faculty members participated in the research study. Future research may consider ways in which to encourage greater participation among adjunct instructors. Generally, however, the demographic similarity of the target and respondent groups provides a level of confidence that the research results reflect the characteristics of the target population.

Demographic information was also gathered on several dimensions that were not comparable to institutional research data. Nevertheless these data provide interesting insight into the demographic characteristics of the survey respondent group. For example, the median age of the respondent group was between 41 and 50 years old, with 23.8% of respondents falling into this age group. Only 9.1% of respondents identified as being less than 30 years old, while approximately 24% identified as being older than 60 (see Table 2). Similarly, the median years of teaching experience of the respondent group was between 11 and 15 years, with only 1.4% having no teaching experience (see Table 3). Additionally, the respondent group heavily identified as undergraduate instructors, with only 21% identifying as teaching primarily graduate students (see Table 4).

Table 2

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30 years old</td>
<td>13</td>
<td>9.0</td>
<td>9.1</td>
</tr>
<tr>
<td>31-40 years old</td>
<td>25</td>
<td>17.4</td>
<td>17.5</td>
</tr>
<tr>
<td>41-50 years old</td>
<td>34</td>
<td>23.6</td>
<td>23.8</td>
</tr>
<tr>
<td>51-60 years old</td>
<td>37</td>
<td>25.7</td>
<td>25.9</td>
</tr>
</tbody>
</table>

Respondent Age
Table 3

*Years of Experience Teaching College Courses*

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid</th>
<th>Cumulative</th>
<th>Percent</th>
<th>Valid</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>1-5</td>
<td>30</td>
<td>20.8</td>
<td>21.1</td>
<td>22.5</td>
</tr>
<tr>
<td>6-10</td>
<td>27</td>
<td>18.8</td>
<td>19.0</td>
<td>41.5</td>
</tr>
<tr>
<td>11-15</td>
<td>21</td>
<td>14.6</td>
<td>14.8</td>
<td>56.3</td>
</tr>
<tr>
<td>16-20</td>
<td>23</td>
<td>16.0</td>
<td>16.2</td>
<td>72.5</td>
</tr>
<tr>
<td>21-25</td>
<td>10</td>
<td>6.9</td>
<td>7.0</td>
<td>79.6</td>
</tr>
<tr>
<td>26+</td>
<td>29</td>
<td>20.1</td>
<td>20.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>142</td>
<td>98.6</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 4

*Students Taught*

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Undergraduates</td>
<td>113</td>
<td>78.5</td>
<td>79.0</td>
</tr>
<tr>
<td>Graduates</td>
<td>30</td>
<td>20.8</td>
<td>21.0</td>
<td>100.0</td>
</tr>
<tr>
<td>-----------</td>
<td>----</td>
<td>------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>Total</td>
<td>143</td>
<td>99.3</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Missing System</th>
<th>1</th>
<th>.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>144</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Scale Consistency and Validity**

The survey instrument contained 43 question items designed to determine the extent to which a variety of motivating factors influence a faculty member’s willingness to participate in an online education environment. As previously mentioned, these factors fell into three dimensions. The first dimension included the motivating factors of incentives, flexibility, perceived workload, institutional support, peer support, self-efficacy, technology experience, opinion of online education, professional growth and student access. The second dimension consolidates the aforementioned first dimension factors into the four factors of perceived relative advantage/usefulness, social influence, level of compatibility/ease of use, and intrinsic value. The third and final dimension further consolidates the factors into two categories; extrinsic and intrinsic motivating factors.

All but three of the first dimension factors, all of the second dimension factors, and all of the third dimension factors were measured by more than one survey question item. First, second, and third-level scales were therefore created to measure all but two of the factors across all three dimensions. The first dimension factor of peer support was measured by only one item, thus requiring no scale. Additionally, five of the question items were worded in such a way as to require recoding the answers to reverse the answer scales. IBM’s SPSS was used to automatically recode and reverse the data for question items four, five, twelve, twenty eight and
In total seven first-level, four second-level, and three third-level scales were created to measure factors in each of the three motivational dimensions. Internal consistency of each scale was confirmed via a Cronbach’s alpha test. The Cronbach’s alpha score was used as an internal consistency measure for all scale items which contained 10 or more individual items. Each of these scales achieved acceptable Cronbach’s alpha scores of greater than 0.7 (DeVellis, 2003). Mean inter-item correlation scores were used to confirm internal consistency for all scale items with less than 10 individual items. Acceptable mean inter-item correlation scores were judged to fall between .15 and .50, as recommended by Clark & Watson (1995). All scales achieved acceptable inter-item correlation scores within this threshold range. The first dimension factor of workload was intended to be measured by two items, yet the scale failed subsequent reliability testing necessitating the abandonment of the workload scale in favor of a single item analysis. Indeed, the mean inter-item correlation score for the workload scale yielded .143, which falls below the aforementioned .15 threshold for sufficient inter-item correlation. The first dimension factor of professional growth also failed reliability testing, as the mean inter-item correlation score of .708 indicated a high level of redundancy among the questions. Therefore, the personal growth scale was dropped in favor of a single item for purposes of subsequent regression analysis. A summary of each scale’s internal consistency scores can be found in Table 5.

Table 5

<table>
<thead>
<tr>
<th>Scale Consistency Tests</th>
<th>Cronbach’s</th>
<th>Mean Inter-item Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td># Questions</td>
<td>Alpha</td>
</tr>
<tr>
<td>Flexibility</td>
<td>8</td>
<td>0.361</td>
</tr>
</tbody>
</table>
An exploratory factor analysis test was also performed via a principal component analysis for each third-level dimension to ascertain the level of scale validity. The factor analysis for the extrinsic factors scale found seven distinct factors which explained approximately 71% of the total variance (see Table 6). This is in contrast to the five extrinsic categories identified and defined by the literature. There was, however, significant overlap between the previously defined extrinsic scales and the scales identified by the factor analysis test. The factor analysis did, however, suggest splitting the flexibility and institutional support scales into a larger number of scales. All regression testing was run on the previously defined scales as informed by the literature.

Table 6

<table>
<thead>
<tr>
<th>Total Variance Explained – Extrinsic Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Incentives</td>
</tr>
<tr>
<td>Workload</td>
</tr>
<tr>
<td>Institutional Support</td>
</tr>
<tr>
<td>Self-Efficacy</td>
</tr>
<tr>
<td>Opinion of Online Education</td>
</tr>
<tr>
<td>Technology Experience</td>
</tr>
<tr>
<td>Professional Growth</td>
</tr>
<tr>
<td>Student Access</td>
</tr>
<tr>
<td>Perceived Relative Advantage/Usefulness</td>
</tr>
<tr>
<td>Social Influence</td>
</tr>
<tr>
<td>Level of Compatibility/Ease of Use</td>
</tr>
<tr>
<td>Intrinsic Value</td>
</tr>
<tr>
<td>Extrinsic Factors</td>
</tr>
<tr>
<td>Intrinsic Factors</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>13</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>16</td>
</tr>
<tr>
<td>17</td>
</tr>
<tr>
<td>18</td>
</tr>
<tr>
<td>19</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>21</td>
</tr>
</tbody>
</table>

Each of the aforementioned subscales was comprised of multiple variables. To allow for the use of parametric statistical tests these items where combined to create single composite variables for each subscale. IBM’s SPSS was used to create the composite variables to allow for further statistical analysis of the influence each subscale had on faculty willingness to participate in online education.

The intrinsic factor analysis test also found seven distinct factors. These seven factors were found to explain 69.5% of the total variance among the intrinsic items (see Table 7). The results of the intrinsic factor analysis deviated from the previously defined intrinsic scale items in two primary ways. First, the factor analysis suggested items from the professional growth and student access scales are part of the same factor. Second, the technology experience and opinion
subscales were, according to the factor analysis, actually comprised of five different factors.

Fortunately the vast majority of the factor items corresponded to the appropriate second-level dimension. For purposes of data analysis the first-level scales as previously defined will be utilized.

Table 7

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>2</td>
<td>2.829</td>
<td>12.861</td>
</tr>
<tr>
<td>3</td>
<td>1.637</td>
<td>7.440</td>
</tr>
<tr>
<td>4</td>
<td>1.256</td>
<td>5.711</td>
</tr>
<tr>
<td>5</td>
<td>1.181</td>
<td>5.367</td>
</tr>
<tr>
<td>6</td>
<td>1.156</td>
<td>5.256</td>
</tr>
<tr>
<td>7</td>
<td>1.057</td>
<td>4.804</td>
</tr>
<tr>
<td>8</td>
<td>0.901</td>
<td>4.095</td>
</tr>
<tr>
<td>9</td>
<td>0.758</td>
<td>3.444</td>
</tr>
<tr>
<td>10</td>
<td>0.643</td>
<td>2.923</td>
</tr>
<tr>
<td>11</td>
<td>0.582</td>
<td>2.647</td>
</tr>
<tr>
<td>12</td>
<td>0.555</td>
<td>2.521</td>
</tr>
<tr>
<td>13</td>
<td>0.527</td>
<td>2.396</td>
</tr>
<tr>
<td>14</td>
<td>0.523</td>
<td>2.378</td>
</tr>
<tr>
<td>15</td>
<td>0.435</td>
<td>1.976</td>
</tr>
<tr>
<td>16</td>
<td>0.400</td>
<td>1.820</td>
</tr>
<tr>
<td>17</td>
<td>0.350</td>
<td>1.592</td>
</tr>
<tr>
<td>18</td>
<td>0.281</td>
<td>1.276</td>
</tr>
<tr>
<td>19</td>
<td>0.234</td>
<td>1.063</td>
</tr>
<tr>
<td>20</td>
<td>0.192</td>
<td>0.871</td>
</tr>
<tr>
<td>21</td>
<td>0.169</td>
<td>0.766</td>
</tr>
<tr>
<td>22</td>
<td>0.158</td>
<td>0.717</td>
</tr>
</tbody>
</table>

Descriptive Statistics
IBM’s SPSS was used to calculate descriptive statistics for all survey instrument items. Central tendency and spread were also calculated for each of the three subscale levels. All descriptive variables, including both individual variables and composites, have scores ranging from one to seven which correspond to the seven-point Likert scale used on the survey instrument. The first-level extrinsic factor subscales included the composite variable items of flexibility, incentives, and institutional support. Peer support and workload were included as individual variable items (see Table 8). The highest central tendency score, out of a seven-point scale, was achieved by the workload variable at 5.04. The highest composite variable score was flexibility at 4.13. The lowest overall central tendency score in the first-level intrinsic subscale was incentives at 3.34. The spread of the three composite variables was similar, as had standard deviations within one-tenth of a point of 1.0. Not surprisingly, the individual variables had a much greater spread, with standard deviations of 1.44 for the workload variable and 1.64 for the peer support variable. First-level intrinsic factor subscales included the composite variable items of self-efficacy, opinion of online technology, technology experience and student access (see Table 9).

Table 8

<table>
<thead>
<tr>
<th></th>
<th>Flexibility</th>
<th>Incentives</th>
<th>Institutional Support</th>
<th>Workload</th>
<th>Peer Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td>141</td>
<td>143</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Mean</td>
<td>4.1345</td>
<td>3.3351</td>
<td>4.0950</td>
<td>5.04</td>
<td>3.64</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.07585</td>
<td>.92945</td>
<td>1.02224</td>
<td>1.441</td>
<td>1.642</td>
</tr>
</tbody>
</table>
Table 9

Central Tendency and Spread – First Level Intrinsic Variables

<table>
<thead>
<tr>
<th></th>
<th>SelfEfficacy</th>
<th>OpinionOnline</th>
<th>TechExperience</th>
<th>StudentAccess</th>
<th>NewPedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td>142</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mean</td>
<td>5.5819</td>
<td>4.1435</td>
<td>5.2546</td>
<td>5.6644</td>
<td>5.81</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.10963</td>
<td>1.09878</td>
<td>.80446</td>
<td>.87428</td>
<td>1.071</td>
</tr>
</tbody>
</table>

An individual variable item was included to measure professional growth. The highest central tendency score was achieved by the professional growth variable at 5.81 out of a seven-point scale. The four composite variables achieved mean central tendency scores ranging from opinion of online technology at 4.14 to student access at 5.66. The spread for all of the first-level intrinsic factor items was within a range of approximately 0.2 standard deviations. The composite variable technology experience was lowest with a spread of .80 standard deviations. The self-efficacy composite variable had the highest spread with 1.11 standard deviations.

Descriptive statistics were also generated for the second-level composite variables (see Table 10). A wide range of mean central tendency scores were calculated for the second-level composite variables. The lowest central tendency mean score was the 3.98 achieved by the relative advantage/usefulness composite variable. In contrast, the highest central tendency mean score of 5.71 was calculated for the intrinsic value composite variable. This reflects a difference in the mean scores between the highest and lowest mean items of 1.73, or 36%. The spread for all second-level composite variables ranged from a standard deviation of .72 for the relative
advantage/usefulness composite variable to a standard deviation of 1.04 for the social influence composite variable.

Table 10

Central Tendency and Spread – Second Level Variables

<table>
<thead>
<tr>
<th></th>
<th>Relative Advantage/Usefulness</th>
<th>Social Influence</th>
<th>Compatibility/Ease of Use</th>
<th>Intrinsic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid N</td>
<td>144</td>
<td>144</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>Missing N</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>3.9783</td>
<td>4.0638</td>
<td>5.0666</td>
<td>5.7057</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>.72189</td>
<td>1.04130</td>
<td>.82990</td>
<td>.86333</td>
</tr>
</tbody>
</table>

Central tendency and spread were also calculated for both third-level subscales (see Table 11). Central tendency mean scores for the third-level composite variables of extrinsic factors and intrinsic factors were 4.00 and 5.26, respectively. This represents more than a full point mean differential between the two third-level composite variables. The spread measurements for the two third-level composite variables were, however, much closer. The standard deviation for extrinsic factors was .68 and was .76 for intrinsic factors, indicating that both third-level composite variables exhibited similar spreads.

Table 11

Central Tendency and Spread – Third Level Variables

<table>
<thead>
<tr>
<th></th>
<th>Extrinsic Factors</th>
<th>Intrinsic Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid N</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>Missing N</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Mean 4.0020 5.2625
Std. Deviation .68347 .75500

**Linear Regression Testing**

Multiple linear regression tests were first run on the third-level subscale in an attempt to answer the following research questions:

1. To what extent do intrinsic factors influence a faculty member’s willingness to participate in an online education environment?
2. To what extent do extrinsic factors influence a faculty member’s willingness to participate in an online education environment?

This initial multiple linear regression test included both third-level subscale composite variables as the independent variables. The first dependent variable tested was the survey item “I am interested in teaching an online course.” A linear regression was conducted to determine the extent to which a relationship existed between the dependent and independent variables.

Diagnostics were first conducted on the linear regression to ensure the appropriateness of the linear regression test. Specifically, a casewise diagnostic test was performed to confirm linearity and tolerance testing was done to ensure multicollinearity does not exist between the independent variables. The casewise diagnostic test detected no outlying cases, which was expected as all variables conform to the seven-point Likert scale. The tolerance test yielded tolerance values of 7.62 for each independent variable (see Table 12). A tolerance value of greater than 6.0 is an acceptable level according toMuijs (2011) and suggests that no significant level of multicollinearity existed between the independent variables.
Table 12

*Tolerance Test – Level 3 Subscale Regression, Teaching Willingness*

<table>
<thead>
<tr>
<th></th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.762</td>
<td>1.313</td>
</tr>
<tr>
<td>Extrinsic Factors</td>
<td>0.762</td>
<td>1.313</td>
</tr>
<tr>
<td>Intrinsic Factors</td>
<td>0.762</td>
<td>1.313</td>
</tr>
</tbody>
</table>

The results of the regression model summary for the multiple linear regression test on the third-level subscale composite variables can be found in Table 13. The third-level subscale had an adjusted R square value of .515 which, according to Muijs (2011), suggests the model is a strong predictor of the data set. The B coefficient values for the regression coefficients are positive for both independent variables (see Table 14). This suggests that a positive relationship exists between both independent variables and a faculty member’s willingness to teach an online course. The beta, or standardized coefficient value, for the intrinsic factor subscale was .534. This was significantly higher than the extrinsic factor subscale beta of .292. This suggests that while both independent variables are positively related to faculty member willingness to teach online, the intrinsic factors have a much stronger positive predictive relationship than do the extrinsic factors. Finally, the p-value significance levels for both independent variables were 0.000, which is well below the .05 threshold for a 95% confidence level of significance (Muijs, 2011). This suggests that the positive relationships indicated by the coefficient results for both independent variables are statistically significant.
Linear regression testing was also conducted on the relationship between the third-level subscales and the second dependent variable; the survey item “I am interested in my discipline offering an online degree program.” Diagnostic tests were again conducted to ensure the appropriateness of the linear regression model. As expected, the casewise diagnostic test detected no outlying cases. The tolerance test yielded acceptable tolerance values of 7.65 for each independent variable (see Table 15). The adjusted R square value of .358 suggests the model is a moderate fit with the data (Muijs, 2011). A positive relationship between both of the independent variables and the dependent variable is indicated by the positive B coefficient values (see Table 16). The beta for the intrinsic factor subscale was .463, and was .226 for the extrinsic factor subscale. The p-value significance level for extrinsic and intrinsic subscales were .004
and .000, respectively. These results suggest a statistically significant positive relationship exists between both independent variables and the dependent variable.

Table 15

*Tolerance Test – Level 3 Subscale Regression, Discipline Willingness*

<table>
<thead>
<tr>
<th>Collinearity Statistics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>.765</td>
</tr>
<tr>
<td>Extrinsic Factors</td>
<td>.765</td>
</tr>
<tr>
<td>Intrinsic Factors</td>
<td>.765</td>
</tr>
</tbody>
</table>

Table 16

*Regression Coefficients – Level 3 Subscale, Discipline Willingness*

<table>
<thead>
<tr>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-5.939</td>
<td>1.074</td>
<td>-5.527</td>
</tr>
<tr>
<td>Extrinsic Factors</td>
<td>.698</td>
<td>.238</td>
<td>.226</td>
</tr>
<tr>
<td>Intrinsic Factors</td>
<td>1.290</td>
<td>.214</td>
<td>.463</td>
</tr>
</tbody>
</table>

Regression testing was also conducted to address the research sub questions relating to the second-level subscales. Specifically, linear regressions were performed to answer the following sub questions:

1. To what extent do a faculty member’s perceptions of the relative advantage/usefulness of online education influence their willingness to participate in an online education
environment?

2. To what extent do social influence factors influence a faculty member’s willingness to participate in an online education environment?

3. To what extent does a faculty member’s perceived level of compatibility with online technology influence their willingness to participate in an online education environment?

4. To what extent does a faculty member’s perception of the intrinsic value of online education influence their willingness to participate in an online education environment?

A linear regression test was conducted to determine the relationship between the first dependent variable, faculty willingness to teach an online course, and the four independent composite variables including the relative advantage/usefulness of online education, social influence, perceived level of compatibility/ease of use, and intrinsic value. Regression diagnostics confirmed the appropriateness of the model, as no outlier cases were detected and all tolerance values were greater than .60 (see Table 17). The adjusted R square value of .568 suggests a strong model fit with the data (see Table 18). Statistically significant results at the 95% confidence level were found for the composite independent variables of relative advantage/usefulness of online education (p=.000), perceived level of compatibility/ease of use (p=.008), and intrinsic value (p=.000) (see Table 19). The social influence variable, by contrast, did not meet the test for a 95% significance level, with a p-value of .966. For each of these independent variables, the linear regression testing yielded positive B coefficient values, indicating each independent composite variable has a positive relationship with the dependent variable of faculty willingness to teach an online course. The strongest relationship was reported for the intrinsic value composite variable, whereas the weakest relationship was found for the perceived level of compatibility/ease of use composite variable (see Table 19).
Table 17

*Tolerance Test – Level 2 Subscale Regression, Teaching Willingness*

<table>
<thead>
<tr>
<th>Collinearity Statistics</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.466</td>
<td>.682</td>
</tr>
<tr>
<td>Relative Advantage/Usefulness</td>
<td>.682</td>
<td>1.466</td>
</tr>
<tr>
<td>Social Influence</td>
<td>.857</td>
<td>1.167</td>
</tr>
<tr>
<td>Compatibility/Ease of Use</td>
<td>.693</td>
<td>1.443</td>
</tr>
<tr>
<td>Intrinsic Value</td>
<td>.642</td>
<td>1.557</td>
</tr>
</tbody>
</table>

Table 18

*Regression Model Summary – Level 2 Subscale, Teaching Willingness*

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>.762(^a)</td>
<td>.580</td>
<td>.568</td>
<td>1.339</td>
</tr>
</tbody>
</table>

Table 19

*Regression Coefficients – Level 2 Subscale, Teaching Willingness*

<table>
<thead>
<tr>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-7.058</td>
<td>.875</td>
<td>8.067</td>
</tr>
</tbody>
</table>
Relative Advantage/Usefulness | .824 | .188 | .292 | 4.390 | .000
Social Influence | -.005 | .116 | -.003 | -.043 | .966
Compatibility/Ease of Use | .433 | .162 | .176 | 2.671 | .008
Intrinsic Value | 1.083 | .162 | .459 | 6.696 | .000

The second dependent variable, the survey item “I am interested in my discipline offering an online degree program”, was also regression tested against the four independent, second-level subscale composite variables. Regression diagnostic tests indicated that all independent composite variables exhibited acceptable tolerance levels of greater than .60 (see Table 20). Diagnostic testing further confirmed that no outlier cases were present. The adjusted R square value of .417 indicates the regression model is a moderate fit with the data set (see Table 21). Regression coefficients can be found in Table 22. Only two of the independent composite variables, relative advantage/usefulness of online education and intrinsic value, passed the 95% level significance testing with p-values of .002 and .000, respectively. Both of these independent composite variables yielded positive b coefficient values, indicating a positive relationship with the dependent variable. Neither the social influence variable nor the compatibility/ease of use variable were found to be statistically significant, recording significance values of .535 and .108, respectively. The intrinsic value independent composite variable had the strongest positive relationship, with an independent beta coefficient value of .441. The relative advantage/usefulness composite variable’s relationship, with a beta coefficient value of .243, was somewhat weaker.
**Table 20**

*Tolerance Test – Level 2 Subscale Regression, Discipline Willingness*

<table>
<thead>
<tr>
<th></th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
</tr>
<tr>
<td>Relative Advantage/Usefulness</td>
<td>.686</td>
</tr>
<tr>
<td>Social Influence</td>
<td>.860</td>
</tr>
<tr>
<td>Compatibility/Ease of Use</td>
<td>.695</td>
</tr>
<tr>
<td>Intrinsic Value</td>
<td>.645</td>
</tr>
</tbody>
</table>

**Table 21**

*Regression Model Summary – Level 2 Subscale, Discipline Willingness*

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.659(^a)</td>
<td>.434</td>
<td>.417</td>
<td>1.609</td>
</tr>
</tbody>
</table>

**Table 22**

*Regression Coefficients – Level 2 Subscale, Discipline Willingness*

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-6.555</td>
<td>1.055</td>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>
The final set of linear regression tests was performed to test the relationship between each of the first-level subscale variables with each of the dependent variables. The dependent variable “willingness to teach online” was regression tested against each of the first-level subscale variables including incentives, flexibility, perceived workload, institutional support, peer support, self-efficacy, technology experience, opinion of online education, professional growth and student access. The workload, peer support, and professional growth independent variables were all derived from single survey element questions. The remaining independent variables were composite variables comprised of multiple survey question items. Regression diagnostics were conducted to ascertain the efficacy of the regression model (see Table 23). The casewise diagnostic test found no outlier cases. The tolerance test, however, found several possible instances of multicollinearity. Specifically, the self-efficacy independent variable had a tolerance level of .458, which suggests the variable may be too closely associated with another variable. The remaining independent variables reported tolerance levels of greater than 5.0. According to Muijs (2011), the adjusted R square value of .575 indicates a strong regression model fit (see Table 24). Only four of the independent variables passed the 95% significance level with a p-value of .05 or lower; flexibility (p=.000), opinion of online education (p=.032), student access (p=.000), and “online teaching can provide an opportunity to experiment with new pedagogical approaches” (p=.029) (see Table 25). Each of these independent variables did report positive B coefficients, indicating each has a positive relationship with the dependent variable. The student access independent variable had the strongest relationship with the
dependent variable, with an adjusted beta coefficient of .325. The flexibility, opinion of online education, and “online teaching can provide an opportunity to experiment with new pedagogical approaches” independent variables recorded adjusted beta coefficient values of .293, .162, and .163, respectively.

Table 23

*Tolerance Test – Level 1 Subscale Regression, Teaching Willingness*

<table>
<thead>
<tr>
<th>Collinearity Statistics</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td>.631</td>
<td>1.584</td>
</tr>
<tr>
<td>Incentives</td>
<td>.781</td>
<td>1.280</td>
</tr>
<tr>
<td>InstSupport</td>
<td>.569</td>
<td>1.756</td>
</tr>
<tr>
<td>SelfEfficacy</td>
<td>.458</td>
<td>2.182</td>
</tr>
<tr>
<td>OpinionOnline</td>
<td>.554</td>
<td>1.806</td>
</tr>
<tr>
<td>TechExperience</td>
<td>.584</td>
<td>1.712</td>
</tr>
<tr>
<td>StudentAccess</td>
<td>.508</td>
<td>1.968</td>
</tr>
<tr>
<td>Online teaching can provide an opportunity to experiment with new pedagogical approaches</td>
<td>.575</td>
<td>1.738</td>
</tr>
<tr>
<td>Online teaching takes more time than classroom teaching</td>
<td>.859</td>
<td>1.164</td>
</tr>
<tr>
<td>I would be motivated to teach an online course because colleagues may refer to online teaching in a...</td>
<td>.504</td>
<td>1.986</td>
</tr>
</tbody>
</table>
Table 24

**Regression Model Summary – Level 1 Subscale, Teaching Willingness**

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>.778a</td>
<td>.606</td>
<td>.575</td>
<td>1.299</td>
</tr>
</tbody>
</table>

Table 25

**Regression Coefficients – Level 1 Subscale, Teaching Willingness**

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-5.084</td>
<td>1.068</td>
<td>-4.760</td>
<td>.000</td>
</tr>
<tr>
<td>Flexibility</td>
<td>.537</td>
<td>.128</td>
<td>.293</td>
<td>4.183</td>
</tr>
<tr>
<td>Incentives</td>
<td>-.032</td>
<td>.133</td>
<td>-.015</td>
<td>-.242</td>
</tr>
<tr>
<td>InstSupport</td>
<td>.081</td>
<td>.142</td>
<td>.042</td>
<td>.569</td>
</tr>
<tr>
<td>SelfEfficacy</td>
<td>.223</td>
<td>.147</td>
<td>.125</td>
<td>1.517</td>
</tr>
<tr>
<td>OpinionOnline</td>
<td>.297</td>
<td>.137</td>
<td>.162</td>
<td>2.168</td>
</tr>
<tr>
<td>TechExperience</td>
<td>-.186</td>
<td>.180</td>
<td>-.075</td>
<td>-1.033</td>
</tr>
<tr>
<td>StudentAccess</td>
<td>.771</td>
<td>.185</td>
<td>.325</td>
<td>4.164</td>
</tr>
</tbody>
</table>

Online teaching can provide an opportunity to experiment with new pedagogical approaches

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online teaching can provide an opportunity to experiment with new pedagogical approaches</td>
<td>.300</td>
<td>.135</td>
</tr>
<tr>
<td>Online teaching takes more time than classroom teaching</td>
<td>-.052</td>
<td>.083</td>
</tr>
</tbody>
</table>

Online teaching takes more time than classroom teaching

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online teaching takes more time than classroom teaching</td>
<td>-.052</td>
<td>.083</td>
</tr>
</tbody>
</table>
I would be motivated to teach an online course because colleagues may refer to online teaching in a...

The final linear regression test was conducted to examine the extent to which the third-level subscales had a relationship with the second dependent variable of “I am interested in my discipline offering an online degree program.” As before, the first-level subscale independent variables were comprised of composite variables to measure incentives, flexibility, institutional support, self-efficacy, technology experience, opinion of online education and student access. The same three individual survey items were used to measure the first-level subscale variables of perceived workload, peer support, and professional growth. Tolerance testing was conducted to determine the extent to which the variables exhibited multicollinearity. Casewise diagnostics were also conducted to determine the number of outlier cases. The results of the casewise diagnostics were negative, as no outlier cases were detected. The tolerance testing again found a possible instance of multicollinearity with the self-efficacy composite variable (see Table 26). The model summary found a strong model fit with the data, as the adjusted $R^2$ value was greater than .50 (see Table 27). The regression returned results significant at a 95% confidence level for the independent variables of flexibility ($p=.001$), opinion of online teaching ($p=.002$), and student access ($p=.000$). Each of these independent variables had a positive $B$ coefficient value, indicating a positive relationship between each of these three independent variables and the dependent variable. The standardized beta coefficient was largest for the student access variable, indicating the relationship was strongest between the dependent variable and the student access variable. The regression yielded standardized beta coefficients of .252 and .256 for the independent variables opinion of online education and flexibility, respectively (see Table...
Table 26

*Tolerance Test – Level 1 Subscale Regression, Discipline Willingness*

<table>
<thead>
<tr>
<th></th>
<th>Collinearity Statistics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
<td>VIF</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td>.635</td>
<td>1.575</td>
</tr>
<tr>
<td>Incentives</td>
<td>.781</td>
<td>1.280</td>
</tr>
<tr>
<td>InstSupport</td>
<td>.571</td>
<td>1.750</td>
</tr>
<tr>
<td>SelfEfficacy</td>
<td>.460</td>
<td>2.175</td>
</tr>
<tr>
<td>OpinionOnline</td>
<td>.555</td>
<td>1.802</td>
</tr>
<tr>
<td>TechExperience</td>
<td>.585</td>
<td>1.709</td>
</tr>
<tr>
<td>StudentAccess</td>
<td>.510</td>
<td>1.960</td>
</tr>
<tr>
<td>Online teaching can provide an opportunity to experiment with new pedagogical approaches</td>
<td>.573</td>
<td>1.745</td>
</tr>
<tr>
<td>I would be motivated to teach an online course because colleagues may refer to online teaching in a...</td>
<td>.506</td>
<td>1.977</td>
</tr>
<tr>
<td>Online teaching takes more time than classroom teaching</td>
<td>.857</td>
<td>1.166</td>
</tr>
</tbody>
</table>

Table 27

*Regression Model Summary – Level 1 Subscale, Discipline Willingness*

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.735(^a)</td>
<td>.540</td>
<td>.503</td>
<td>1.479</td>
</tr>
</tbody>
</table>
Table 28

Regression Coefficients – Level 1 Subscale, Discipline Willingness

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-3.596</td>
<td>1.222</td>
<td></td>
<td>-2.942</td>
</tr>
<tr>
<td>Flexibility</td>
<td>.493</td>
<td>.146</td>
<td>.256</td>
<td>3.371</td>
</tr>
<tr>
<td>Incentives</td>
<td>-.217</td>
<td>.151</td>
<td>-.098</td>
<td>1.431</td>
</tr>
<tr>
<td>InstSupport</td>
<td>-.134</td>
<td>.162</td>
<td>-.066</td>
<td>-1.824</td>
</tr>
<tr>
<td>SelfEfficacy</td>
<td>-.038</td>
<td>.167</td>
<td>-.020</td>
<td>-1.225</td>
</tr>
<tr>
<td>OpinionOnline</td>
<td>.484</td>
<td>.156</td>
<td>.252</td>
<td>3.104</td>
</tr>
<tr>
<td>TechExperience</td>
<td>-.333</td>
<td>.205</td>
<td>-.128</td>
<td>1.621</td>
</tr>
<tr>
<td>StudentAccess</td>
<td>.908</td>
<td>.211</td>
<td>.364</td>
<td>4.297</td>
</tr>
</tbody>
</table>

Online teaching can provide an opportunity to experiment with new pedagogical approaches

|                        |                |              |      |      |
| Online teaching takes more time than classroom teaching | -.092 | .094 | -.064 | -1.977 | .330 |

Open-ended Question Results
The two final non-demographic survey questions asked respondents to first list factors that would motivate them to teach online and then list factors that would inhibit them from teaching online. This qualitative data was coded and categorized to allow for analysis as described by Gall et al. (2007). Frequency distributions were calculated to report on the relative importance of each category. Not all respondents completed the open ended questions, with 116 completing the motivator question and 119 completing the inhibitor question. Motivator categories matched eight of the ten previously defined first-level subscales including flexibility, incentives, peer support, institutional support, opinion of online education, technology experience, professional growth and student access. One new category was created to include the responses from those instructors that listed “institutional benefit” as a motivating factor. The most frequently listed motivating factors included the categories of flexibility, incentives, institutional support, and professional growth (see Table 29). By contrast, the categories of technology experience and peer support were not widely stated as being motivating factors. Inhibiting factors conformed to the first-level subscale categories of incentives, workload, peer support, institutional support, self-efficacy, opinion of online education, and technology experiences. Two new categories were created to reflect the answers of those respondents that listed “negative impact on the institution” and “large class sizes” as inhibiting factors. Negative opinion of online education was overwhelmingly reported as the most frequent inhibiting factor, with 59 out of the 119 indicating as such (see Table 30). Many of the responses regarding the negative opinion of online learning fell into one of two general areas of concern. The first was a concern regarding the perceived difficulty in enforcing academic honesty in an online education environment. The second concern was a belief that there is no opportunity to engage students in a fact-to-face manner via online education. Concerns regarding workload, incentives,
institutional support and self-efficacy were also commonly reported as inhibiting factors (see Table 30).

Table 29

*Open-ended Motivator Response Frequencies*

<table>
<thead>
<tr>
<th>Motivator</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>26</td>
</tr>
<tr>
<td>Incentives</td>
<td>34</td>
</tr>
<tr>
<td>Peer Support</td>
<td>5</td>
</tr>
<tr>
<td>Institutional Support</td>
<td>34</td>
</tr>
<tr>
<td>Opinion of Online Education</td>
<td>10</td>
</tr>
<tr>
<td>Technology Experience</td>
<td>1</td>
</tr>
<tr>
<td>Professional Growth</td>
<td>16</td>
</tr>
<tr>
<td>Student Access</td>
<td>11</td>
</tr>
<tr>
<td>Institutional Benefit</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 30

*Open-ended Inhibitor Response Frequencies*

<table>
<thead>
<tr>
<th>Inhibitor</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient Incentives</td>
<td>14</td>
</tr>
<tr>
<td>Increased Workload</td>
<td>22</td>
</tr>
<tr>
<td>Insufficient Peer Support</td>
<td>4</td>
</tr>
<tr>
<td>Insufficient Institutional Support</td>
<td>18</td>
</tr>
<tr>
<td>Insufficient Self-Efficacy</td>
<td>14</td>
</tr>
<tr>
<td>Negative Opinion of Online Education</td>
<td>59</td>
</tr>
<tr>
<td>Negative Technology Experiences</td>
<td>4</td>
</tr>
<tr>
<td>Negative Impact on Institution</td>
<td>2</td>
</tr>
<tr>
<td>Large Class Sizes</td>
<td>2</td>
</tr>
</tbody>
</table>
Chapter V: Discussion and Implications

The purpose of this research study is to identify the factors which motivate faculty to participate in online education. The aforementioned survey instrument was constructed and administered to solicit feedback from faculty members at a small liberal arts university regarding factors that may motivate or inhibit their willingness to participate in online education. The theoretical framework and literature review established the broad motivational categories of extrinsic and intrinsic factors. The theoretical framework and review of the literature resulted in further categorization of motivational factors into the four dimensions of perceived relative advantage/usefulness, social influence, perceived level of compatibility, and perceived intrinsic value. Statistical tests were then conducted to determine the extent to which each of these factor categories influenced faculty willingness to participate in online education.

Results and Discussion of Research Question One

The first research question seeks to determine the extent to which extrinsic factors influence a faculty member’s willingness to participate in an online education environment. Two sub-questions look to determine the extent to which a faculty member’s perception of the relative advantage/usefulness of online education and the social influence relating to online education influence their willingness to participate in an online education environment. Statistical subscales were created to measure the influence of the broadly defined extrinsic category as well as the sub-question categories of perceived relative advantage/usefulness and social influence. The first 22 survey instrument questions were designed to measure the influence of the extrinsic factors. The specific extrinsic factors which comprised these subscales were identified via the literature review as flexibility, workload concerns, incentives and rewards, perception of peer support, and perceived level of institutional support.
Descriptive statistical tests on the extrinsic factors suggest that both a faculty member’s perceived relative advantage/usefulness of online education and the level of social influence regarding online education are equally important in faculty willingness to participate in online education. Indeed, the mean response values for both subscales were within one-tenth of a point of each other on a seven-point scale (see Table 10). Similarly, the mean respondent score for the overall extrinsic factors scale was 4.00, which is within one-tenth of a point of the mean of both extrinsic subscales. In summary, descriptive statistics suggest that extrinsic factors are moderately important to faculty member willingness to participate in online education.

While descriptive research techniques are useful for identifying the important variables in this study, correlational research techniques were used to explore the relationships between the extrinsic variables and faculty member willingness to participate in an online education environment. Faculty member willingness to participate in online education was measured by respondent answers to the survey items “I am interested in teaching an online course” and “I am interested in my discipline offering an online degree program.” Separate linear regressions were conducted to examine the relationship between each of the three extrinsic subscales and the respondent answers to each of these two questions. The results of the multiple linear regression testing conducted on the first-level extrinsic factors were mixed. The only extrinsic factor found to influence faculty willingness to participate in online education was the increased level of flexibility inherent in an online education environment. No statistically significant relationship was found between the extrinsic factors of workload concerns, incentives and rewards, perception of peer support, perceived level of institutional support and faculty willingness to participate in an online education environment. Indeed, the inherent flexibility of an online education environment was the sole first-level extrinsic factor related to faculty willingness to
participate in an online education environment. The results were, to some extent, contrary to the findings in the literature review. Indeed, while the literature (T. Green et al., 2009; Osika et al., 2009; Wasilik & Bolliger, 2009) agrees with this research finding of the importance of the flexibility of online education to faculty members, the literature (Beck, 2012; Boerema et al., 2007; Chapman, 2011; T. Green et al., 2009; Huang & Hsia, 2009; Kampov-Polevoi, 2010; Orr et al., 2009; Shea, 2007; Tabata & Johnsrud, 2008; Ulmer et al., 2007) also suggests that workload concerns, incentives and rewards, the perception of peer support and the perception of institutional support are also important to faculty participation in online education.

Interestingly, this study only found support for the importance of the flexibility factor. This discrepancy in findings between this research study and the aforementioned literature may be due to a number of factors, including the makeup of the study population and the relatively low level of institutional experience with online education. The study population, for example, was drawn exclusively from a small, private liberal arts institution which stands in contrast to the aforementioned literature, with populations drawn from larger, typically public institutions. The aforementioned studies also typically involved institutions with at least a moderate level of experience with online education, which stands in stark contrast to the minimal amount of experience with online programming at the research site.

Linear regression testing on the second-level extrinsic subscales found a statistically significant relationship between a faculty member’s perception of the relative advantage and usefulness of online education and the faculty member’s willingness to participate in an online education environment. By contrast, no statistically significant relationship was found between social influence and faculty member willingness to participate in online education. The confirmation of a relationship between relative advantage and willingness to participate online
was expected, as the first-level factor of “flexibility” was contained within the relative advantage/usefulness subscale. The lack of a statistical relationship between faculty willingness to teach online and the social influence subscale was also expected, as the social influence subscale is comprised of the first-level subscales of perception of peer support and perception of institutional support, neither of which were found to have a statistically significant relationship with faculty willingness to teach online.

Finally, linear regression testing concluded that the extrinsic factor scale had a positive, statistically significant relationship with faculty member willingness to participate in an online education environment. This result is consistent with the literature, which emphasizes the importance of faculty member workload concerns, incentives and rewards, perception of peer support, perceived level of institutional support and faculty willingness to participate in an online education environment (Beck, 2012; Boerema et al., 2007; Chapman, 2011; T. Green et al., 2009; Huang & Hsia, 2009; Kampov-Polevoi, 2010; Orr et al., 2009; Osika et al., 2009; Shea, 2007; Tabata & Johnsrud, 2008; Ulmer et al., 2007; Wasilik & Bolliger, 2009). While flexibility was the only individual extrinsic factor found in this study to relate to faculty member willingness to participate in online education, when taken together as a composite category the extrinsic factor category had a statistically significant and positive relationship with faculty willingness to participate in online education. Interestingly, the relationship was stronger between extrinsic factors and willingness to teach online than it was between extrinsic factors and willingness of the faculty member to have their discipline offer an online degree program. This may be due to the fact that the strongest extrinsic factor, flexibility, is seen as more of an individual benefit as opposed to a departmental benefit.

Open-ended responses were also collected from those who completed the survey items
“Please list motivating factors that would encourage you to teach an online course” and “Please list inhibiting factors that would discourage you from teaching an online course.” Responses categorized as “incentives” and “institutional support” were the most frequently reported positive motivating factors for faculty to teach an online course. Flexibility was the third most frequently reported extrinsic motivating factor. This contradicts, to some extent, the results of the aforementioned regression analysis which found a positive, statistically significant relationship existed only between the flexibility subscale and faculty willingness to participate in online education. A category of answers relating to workload concerns was the most frequently identified inhibitor. This again contradicts the regression analysis, as no positive, statistically significant relationship between workload concerns and faculty member willingness to participate in online education was found. Concerns relating to insufficient institutional support and lack of incentives were the second and third most frequently reported inhibiting factors, respectively. The seemingly contradictory results generated by the regression testing and open-ended analysis may be due to respondents misunderstanding a number of survey items. The open-ended analysis did, however, reaffirm the importance of flexibility as identified in the literature and confirmed in the quantitative analysis.

In summary, extrinsic factors have been found in this study to have a positive relationship with faculty willingness to participate in online education. Additionally, a faculty member’s perception of the relative advantage/usefulness of online education was found to be positively related to the faculty member’s willingness to participate in an online education environment. Social influence factors, by contrast, have not been found to be related to a faculty member’s willingness to participate in an online education environment.

**Results and Discussion of Research Question Two**
The second research question seeks to determine the extent to which intrinsic factors influence a faculty member’s willingness to participate in an online education environment. Two sub-questions seek to determine the extent to which a faculty member’s perceived level of compatibility with online education and faculty member’s perception of the intrinsic value of online education influence their willingness to participate in an online education environment. Statistical scales were created to measure both the influence of the intrinsic factors scale as well as the subscale categories of perceived compatibility and perceived intrinsic value. Survey questions 23 through 45 were designed to measure the influence of intrinsic factors on faculty member willingness to participate in online education. The specific intrinsic factors which comprised these subscales were identified via the literature review as self-efficacy, technology experience, opinion of online education, professional growth and student access.

Descriptive statistics were calculated for the intrinsic factor scale as well as for both the perceived compatibility and intrinsic value subscales. The intrinsic value subscale was rated higher than perceived compatibility, with average mean scores of 5.70 and 5.07, respectively. Even so, both intrinsic subscales achieved significantly positive central tendency mean scores on the seven-point scale. As expected by these results, the central tendency mean score for the intrinsic factor scale was also strong at 5.26. The descriptive statistics identify each of the second and third level intrinsic scales as important.

Multiple linear regression tests showed that the only first-level intrinsic variables found to have a statistically significant relationship with faculty willingness to participate in an online education environment were opinion of online education, professional growth and student access. Each of these variables, however, was found to have a positive relationship with faculty willingness to participate in online education. Student access was found to have the strongest
positive relationship with faculty willingness to participate in online education, followed by professional growth and opinion of online education. It is important to note, however, that the significance of the positive relationship found between professional growth and faculty willingness was only valid for the question regarding willingness to teach, the relationship was not statistically significant for the question regarding discipline willingness. This result is somewhat intuitive, as a desire for professional growth can likely be satisfied by teaching online courses and does not necessitate an fully online degree program.

In summary, a faculty member’s opinion of online education, opportunity for professional growth, and desire to increase student access were all found by the study to relate positively to the faculty member’s willingness to participate in online education, which agrees with the literature (Conceição, 2006; Cook et al., 2009; Hiltz et al., 2007; Kampov-Polevoi, 2010; Osika et al., 2009; Styron et al., 2009; Wasilik & Bolliger, 2009; Wickersham & McElhaney, 2010). By contrast, the literature (Huang & Hsia, 2009; Kampov-Polevoi, 2010; Osika et al., 2009; Tabata & Jonsrud, 2008; Ulmer et al., 2007; VanHorn et al., 2008; Wasilik & Bolliger, 2009) also indicates that faculty technology experiences and technology self-efficacy are also important to their participation in online education; a conclusion not supported by this research study. This discrepancy between the research findings and the literature may be due to the relatively low level of online technology experience of the research participants.

Both second-level intrinsic subscales were found by means of multiple linear regression testing to have positive, statistically significant relationships with a faculty member’s willingness to participate in online education. Specifically, the intrinsic value subscale was found to have the strongest relationship, followed by a much weaker relationship with the perceived compatibility subscale. In short, both a faculty member’s perceived compatibility with online
education and the intrinsic value a faculty member places upon their participation in online education are positively related to the faculty member’s willingness to participate in online education. The relationship is, however, much stronger between the intrinsic value a faculty member places on their participation in online education and their willingness to participate in an online education environment. Finally, the correlational analysis of the intrinsic factor scale found a statistically significant, positive, and strong relationship between intrinsic factors and faculty willingness to participate in online education. These findings are consistent with the results from the aforementioned literature review. Indeed, the intrinsic value of an innovation is featured prominently in this study’s theoretical framework, and is in particularly emphasized by Rogers (2007) as crucial to innovation adoption.

The results of the data collection from the two open-ended, qualitative questions regarding motivating and inhibiting factors were mixed. Survey respondents indicated that an opportunity for professional growth was the greatest intrinsic factor motivating their participation in online education. The second most common response, categorized as “institutional benefit”, was not an intrinsic factor identified in the theoretical framework or literature review. Opportunities for increased student access to education and their opinion of online education were the third and fourth most commonly reported motivators, respectively. The most common responses inhibiting intrinsic factors were overwhelmingly those responses categorized as “negative opinion of online education.” Indeed, responses categorized as “negative opinion of online education”, were more common than the next closest intrinsic category by more than a factor of four. These results correlate well with the aforementioned regression analysis, as both opinion of online education and student access were identified as having positive, statistically significant relationships with a faculty member’s willingness to
participate in online education.

The importance of faculty member acceptance of the efficacy of online education as well as their belief in the opportunity online education affords to increase student access has been very clearly supported by the results of both the quantitative regression analysis and the open-ended analysis in this research study. An individual’s general level of compatibility with an innovation, as posited by Rogers (2003), was established in the theoretical framework as a major component in the adoption of online education by faculty members. Student access was identified in the literature review as a motivating intrinsic factor (Hiltz et al., 2007). The theoretical framework, literature review, quantitative regression analysis, and open-ended analysis all agree upon the importance of these two factors. As such, any informed efforts at increasing faculty member participation in online education should include efforts to address both a faculty member’s opinion of online education as well as to educate faculty members as to the benefits online education provides to increase educational access to students.

Discussion

Two primary conclusions were derived from this quantitative research study. Each conclusion is listed below and is accompanied by a brief discussion.

1. Both extrinsic and intrinsic factors were found in this study to have a positive relationship with faculty participation in online education. This is consistent with the findings in the literature that a wide range of potential motivators and inhibitors exist which can influence faculty participation in online education. Specifically, the flexibility of online education, a faculty member’s opinion of online education, opportunities for professional growth due to participation in online education, and the opportunity to increase student access due to online education were all found to have a statistically significant relationship with faculty willingness to
participate in online education. More generally, the most important motivational factor
categories were found to be a faculty member’s perception of the relative advantage/usefulness
of online education, the perceived compatibility/ease of use of online education environments,
and the intrinsic value a faculty member derives from participation in online education.
Successful efforts to encourage faculty participation in online education will, therefore, likely
need to be robust enough to promote a wide range of motivational areas and address inhibiting
factors.

2. Intrinsic factors were found in this study to have a much stronger positive relationship
with faculty participation in online education than were extrinsic factors. A greater number of
intrinsic factors were found to have a statistically significant relationship with faculty willingness
to participate in online education and, in general, the relationships were also stronger. This
suggests that, while efforts to encourage faculty participation in online education should be broad
and include both extrinsic and intrinsic motivators, higher education administrators should
consider emphasizing efforts to focus on intrinsic motivators, as doing so will likely result in a
higher impact. Indeed, higher education administrators should not focus their efforts solely on
extrinsic motivators such as increased faculty flexibility and monetary rewards. Rather, higher
education administrators should consider how best to build intrinsic support for online education
initiatives in order to best motivate faculty to participate in said initiatives.

Implications

The results of this research study have implications for a number of populations.
Certainly those higher education administrators seeking to implement new or expanded online
education programs can benefit from the results by leveraging them to construct more effective
faculty encouragement programs. Researchers may consider how these results and the
synthesized theoretical framework can be used to further research in the specific area of faculty participation in online education and, perhaps, a broader focus of study involving faculty adoption of technology.

**Implications for practice.**

As previously mentioned, higher education administrators who seek to increase faculty participation in online education are encouraged to focus their efforts on intrinsic motivating factors. Higher education administrators can reinforce intrinsic motivators by communicating them “through the organization, individual relationships, and the manner in which professional development is planned and delivered” (King, Melia & Dunham, 2005). Specifically, higher education administrators should consider programs which:

1. Educate faculty members regarding the efficacy of online education. This may be accomplished by inviting respected guest speakers to campus to address faculty concerns regarding online education. Ensuring faculty members are consulted and intimately involved in new online education initiatives may also be a manner in which faculty members can become more familiar and comfortable with the efficacy of online education.

2. Provide training to faculty members on sound pedagogical approaches to effective online instruction. For example, experienced and effective online educators could be solicited to offer workshops in online education pedagogy to their colleagues. Alternatively, external resources could be leveraged to provide pedagogical training in the event that no experienced instructors are available.

3. Emphasize the opportunity online education provides to reach new student populations which would otherwise be inaccessible. This may be emphasized by an institution’s
mission statement. The mission statement for the research site, for example, states “…we strive to foster the development of knowledgeable, skilled, compassionate and ethical individuals by mentoring students within vitally engaging learning environments.” Higher education administrators can then emphasize to the campus community the opportunity afforded by online education to reach new populations of potential students. Such programs should seek to include early faculty adopters of online education, as early adopters are often looked up to by others when faced with technology changes (Rogers, 2003). These early adopters could be solicited to help lead faculty online education initiatives in an effort to build support for online education.

A focus on intrinsic factors should not, however, lead higher education administrators to neglect extrinsic factors. Indeed, the broadly defined category of “extrinsic factors” was found to have a positive and statistically significant relationship with faculty willingness to participate in online education. Furthermore, incentives and institutional support were both prominent in faculty member responses to the open-ended portion of the survey instrument regarding motivating factors for participation in online education. The best approach to encouraging faculty participation is likely one that is comprehensive and includes tactics to address both intrinsic and extrinsic factors. For example, the following tactics may be employed by higher education administrators to satisfy the extrinsic needs of faculty members:

1. Increased faculty compensation to defray the costs of developing an online course.

   Higher education administrators could, for example, consider offering a stipend to faculty for the development and/or the delivery of a new online course.

2. Additional institutional technology support for those faculty members participating in online education. Higher education administrators should consider what support
structures need to be in place to support online education faculty. Such structures may be even more critical to support instructors with little or no online education experience. Such support systems will likely include instructional technologists, instructional design specialists, and technology helpdesk personnel.

3. Emphasis on added scheduling flexibility available to those faculty members who participate in online education. Higher education administrators may consider, for example, how key faculty members could leverage the flexibility of online education to reduce commuting time and on-campus hours. Such arrangements may be beneficial to encourage important faculty members to participate in online education with the promise of enhanced scheduling flexibility.

This research strongly suggests that there is no one ultimate factor that will motivate or inhibit faculty member participation in online education. Rather, consistent with the literature and theoretical research framework, there are a number of factors, both extrinsic and intrinsic, which motivate and inhibit faculty participation in online education. Therefore a comprehensive and robust program to encourage faculty participation in online education which addresses both the identified intrinsic and extrinsic concerns seems ideally suited to motivating more faculty to participate in online education.

Higher education administrators should also consider how best to address tangible inhibitors to faculty member participation in online education. For example, faculty member concerns regarding institutional support should be thoroughly analyzed to determine if the appropriate support systems are in place to allow instructors to be successful in an online learning environment. Such support systems may include pedagogical training, instructional design services, or technology support. Tangible barriers to faculty participation in online
education may result in serious inhibitors and should be thoroughly addressed by higher education administrators.

**Implications for future research.** The theoretical framework and literature review utilized in this research study provided a robust method for understanding faculty motivations for participating in online education. The synthesized theoretical framework for this research drew from theories Rogers’s (2003) theory of the diffusion of innovations, Davis’s (1989) technology acceptance model, the unified theory of acceptance and use of technology as offered by Venkatesh et al. (2003) and Fullan’s (2008) theory of educational change. The synthesized framework has proved to be a powerful and flexible instrument for examining the specific question of faculty motivation to participate in online education. The literature review provided for the further sub-categorization of motivating factors, with each of the sub-factors being directly related to a parent category as defined in the theoretical framework. Future research into this topic may consider leveraging this framework as a way to continue to explore the question of online education adoption among faculty members. The theoretical framework could also be used to explore broader questions of faculty technology adoption.

The open-ended component of the research study did conclude, however, that at least one additional variable should be considered when seeking to understand motivators and inhibitors to faculty participation in online education. The concept of “benefit to the institution” was a commonly cited motivator by respondents to the open-ended motivation question. Additionally, many respondents also listed “negative impact on the institution” as an inhibiting factor in their participation in online education. These two factors are likely opposite ends of the same factor. Future research on this topic should include the extent to which faculty member perceptions of the institutional benefit, or harm, of participation in online education influence their own
motivations to teach online courses. Indeed, consideration should be given to including this category as an intrinsic motivating factor in future research frameworks on this topic.

Inclusion of additional research sites of different types would also allow for an improved understanding of this topic. This research study was conducted at a single site and included a small, liberal arts university with little experience in the online education marketplace. Comparative motivator and inhibitor studies conducted at community colleges, research institutions, public institutions, multi-campus institutions and for-profit institutions would permit a broader understanding of faculty motivators for participating in online education. Future studies should also seek to include institutions at all levels of online education adoption in an attempt to determine how faculty member motivators and inhibitors might differ based upon institutional online education experience levels.

The sampling strategy utilized for this study was a simple random sample. Future quantitative research into this topic should consider utilizing a stratified sampling tactic, as such could be employed to further delineate the motivational factors for different types of faculty members. A stratified sampling could also be used across multiple institutions to examine the motivators and inhibitors of specific sub-categories of faculty. This tactic may also assist in determining the extent to which full-time and part-time faculty members are motivated by the “benefit to the institution” motivational category discovered in this research study. Different sampling strategies, as well as further research at different sites, may also provide statistical results that meet a higher confidence level, as the confidence level of this research study was limited to 90% with a confidence interval of 5% due to respondent participation rate. Ideally, future studies on this topic will be able to achieve a 95% confidence level with a 5% confidence interval.
Lastly, future qualitative research could be used to more thoroughly explore the aforementioned motivators and inhibitors to faculty member participation in online education. Faculty interviews and focus groups could be used, for example, to determine how best to construct an online education encouragement program given the quantitative findings from this research study. More thorough qualitative research may also allow researchers to discover new motivational and inhibitor factors influencing faculty participation in online education. In short, it is recommended that qualitative research be conducted in an effort to determine how best higher education administrators can leverage the results from this quantitative study to improve faculty member participation in online education.

Conclusions

Online education has become a vital component of the higher education system in the United States. As student demand for online higher education courses is expected to continue to rise, higher education institutions will need to be in a position to offer greater numbers of online education courses and programs to meet this expected demand. It will be difficult, if not impossible, for many higher education institutions to greatly increase their online education capacity without the support and willingness of faculty to participate in online education. This research was conducted to determine the extent to which intrinsic and extrinsic factors influence a faculty member’s decision to participate in online education at a small, traditional liberal arts university. The results of this research will ideally be used by similar institutions to improve efforts at encouraging faculty members to participate in online education. A strong focus on intrinsic motivators, without neglecting extrinsic motivators, is likely the best approach for higher education administrators to take in order to encourage greater faculty member participate in online education. Particular emphasis should be placed upon addressing faculty concerns
regarding the efficacy of online education while reinforcing the positive aspects of online education, including the ability to increase student access to higher education.


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Kim, M. R. (2008). Factors influencing the acceptance of e-learning courses for mainstream faculty in higher institutions. *International Journal of Instructional Technology and Distance Learning, 5*, 29-44.


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Appendix A – Survey Instrument

1. Teaching online can provide me with a more flexible work schedule
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

2. Teaching online can provide me with the ability to accommodate other life needs (child care, transportation, other family needs)
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

3. Teaching online can provide me with the ability to reduce commuting time, or hassle
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

4. There may be inadequate compensation for developing an online course.
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree
5. There may be inadequate compensation for teaching an online course.
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

6. There is sufficient recognition of online teaching in regards to considerations for promotion
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

7. There is sufficient recognition of online teaching in regards to considerations for salary increases
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

8. Online teaching takes more time than classroom teaching
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
7. Strongly agree

9. I have sufficient time to develop an online course
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

10. I would be motivated to teach online by time constraints due to other teaching responsibilities
    1. Strongly disagree
    2. Disagree
    3. Somewhat disagree
    4. Neutral
    5. Somewhat agree
    6. Agree
    7. Strongly agree

11. I would be motivated to teach online by time constraints due to other research responsibilities
    1. Strongly disagree
    2. Disagree
    3. Somewhat disagree
    4. Neutral
    5. Somewhat agree
    6. Agree
    7. Strongly agree

12. I would be motivated to teach online by time constraints due to commuting related issues such as wear and tear on car, gas, and mileage
    1. Strongly disagree
    2. Disagree

13. Financial incentives would motivate me to teach online


14. I would be motivated to teach online because my face-to-face courses are scheduled at inconvenient times


15. I would be motivated to teach online because my face-to-face courses are scheduled at inconvenient places

16. I would be motivated to teach an online course because colleagues may refer to online teaching in a positive way

   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

17. The campus administration values online teaching

   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

18. The campus administration recognizes the effort required to teach online

   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

19. There is adequate technical support for online course teaching

   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
7. Strongly agree

20. There is adequate technical support for online course development

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

21. There are adequate professional development opportunities for online teaching

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

22. I am very comfortable using a computer

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

23. I am comfortable using Internet based search engines such as Google, Bing, and Yahoo

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree
24. I am comfortable using Internet based social networking programs such as MySpace, Facebook, Twitter, etc.

   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

25. I am comfortable using Moodle to augment my traditional, face-to-face classes

   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

26. I am confident I could use Moodle to teach an online class

   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

27. I am familiar with effective pedagogy for teaching online

   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree
28. The technology involved in online teaching can be confusing
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

29. Educational technology is useful for content delivery
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

30. Online education is incompatible with the way I teach my courses
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

31. In the past two years, how often have you taught face-to-face classes that are web-enhanced in which a website was available for students to use (such as Moodle)
   1. Never
   2. Rarely, in less than 10% of the chances when I could have
   3. Occasionally, in about 30% of the chances when I could have
   4. Sometimes, in about 50% of the chances when I could have
   5. Frequently, in about 70% of the chances when I could have
   6. Usually, in about 90% of the chances when I could have
   7. Every time

32. In the past two years, how many fully online classes have you taught?
1. None
2. One
3. Two
4. Three
5. Four
6. Five
7. Six or more

33. I often use Word processing programs such as Word

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

34. I often use Spreadsheet programs such as Excel

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

35. I often use email programs such as Outlook

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

36. I often use the Internet
1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

37. Online teaching can provide an opportunity to “stretch,” – take on a new challenge

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

38. Online teaching can provide an opportunity to learn new technology

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

39. Online teaching can provide an opportunity to experiment with new pedagogical approaches

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

40. Students want online courses
1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

41. Online teaching can provide an opportunity to reach students in different geographical locations

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

42. Online teaching can provide an opportunity to reach students at different stages of their learning lives (e.g. more mature/experienced, older, younger, etc.)

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree

43. Online teaching can provide an opportunity to reach students with different cultural backgrounds

1. Strongly disagree
2. Disagree
3. Somewhat disagree
4. Neutral
5. Somewhat agree
6. Agree
7. Strongly agree
44. I am interested in teaching an online course
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

45. I am interested in my discipline offering an online degree program
   1. Strongly disagree
   2. Disagree
   3. Somewhat disagree
   4. Neutral
   5. Somewhat agree
   6. Agree
   7. Strongly agree

46. Please list motivating factors that would encourage you to teach an online course

47. Please list inhibiting factors that would discourage you from teaching an online course

48. Are you male or female?
   1. Male
   2. Female

49. What is your age?
   1. 20-30 years old
   2. 31-40 years old
   3. 41-50 years old
   4. 51-60 years old
   5. 61 or older

50. How many years of experience do you have teaching college-level courses?
   1. 0
   2. 1-5
   3. 6-10
   4. 11-15
51. Are you tenured or non-tenured?
   1. Tenured
   2. Non-tenured

52. What is your job title?
   1. Full Professor
   2. Associate Professor
   3. Assistant Professor
   4. Lecturer
   5. Adjunct/Part-Time Instructor

53. In which academic school do you teach
   1. School of Arts & Sciences
   2. School of Business
   3. School of Education
   4. School of Journalism & Mass Communications
   5. Clare College

54. Which type of students do you primarily teach?
   1. Undergraduates
   2. Graduates
Appendix B – Author Permission Letters

Hi Michael,

You are welcome to use the scale. We recently validated it using a student sample. The paper however is under review. If you contact me again in a couple of months I can share our newest manuscript with you and the scale validation data.

Best of luck to you in your upcoming research!

Cindy Stewart, PhD
Associate Professor of Psychology
University of Houston-Downtown

Hi Mike

Yes – that’s fine –

Good luck with your work!

Best

Peter

Peter Shea, PhD
Associate Professor
Appendix C – IRB Approval

NOTIFICATION OF IRB ACTION

Date: October 17, 2012
IRB #: 12-09-05

Principal Investigator(s): Yufeng Qian
Michael Hoffman

Department: Doctor of Education Program
College of Professional Studies

Address: 50 Nightingale Hall
Northeastern University

Title of Project: An Examination of Motivating Factors on Faculty
Participation in Online Higher Education

Participating Sites: Participating site requires prior NU IRB approval. Site
permission/approval letter will be forthcoming.

DHHS Review Category: Expedited #7

Informed Consents: One (1) unsigned consent form as preface to online survey
As per CFR 45 46.117(c)(2) Signed consent is being waived as the research presents no more than minimal risk
of harm to subjects and involves no procedures for which written consent is normally required.

Monitoring Interval: 12 months

APPROVAL EXPIRATION DATE: OCTOBER 16, 2013

Investigator’s Responsibilities:

1. The informed consent form bearing the IRB approval stamp must be used when recruiting participants into the study.
2. The investigator must notify IRB immediately of unexpected adverse reactions, or new information that may alter our perception of the benefit-risk ratio.
3. Study procedures and files are subject to audit any time.
4. Any modifications of the protocol or the informed consent as the study progresses must be reviewed and approved by this committee prior to being instituted.
5. Continuing Review Approval for the proposal should be requested at least one month prior to the expiration date above.
6. This approval applies to the protection of human subjects only. It does not apply to any other university approvals that may be necessary.

C. Randall Colvin, Ph.D., Chair
Northeastern University Institutional Review Board

Nan C. Regina, Director
Human Subject Research Protection

Northeastern University FWA #4630