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Community College Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Materials Matter?

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COMMUNITY COLLEGE FACULTY SATISFACTION TEACHING ONLINE: DOES USING PREPARED CURRICULUM MATERIALS MATTER?

by

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Title	COMMUNITY COLLEGE FACULTY SATISFACTION TEACHING ONLINE: DOES USING PREPARED CURRICULUM MATERIALS MATTER?
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To my children:

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ABSTRACT

Community colleges are offering online coursework at a rapidly increasing rate; however, the growth of online coursework is not the result of new enrollments, but rather currently enrolled students' shifting from a face-to-face modality to an online modality. This shift presents some challenges because previous studies of college faculty satisfaction regarding online teaching have indicated that faculty members (faculty) are frustrated, particularly with two primary issues: the *technology* used to teach online and the *time* it takes to develop and administer an online class. Nonetheless, community college faculty are increasingly expected to teach online classes in spite of the previous reports of faculty frustration that is leading to dissatisfied instructors. The emergence of new instructional resources might reduce or eliminate frustrations and increase satisfaction. Specifically, using online resources such as third-party prepared curriculum materials could reduce faculty frustrations with technology and time. Given the change in instructional resources, the purpose of this study is to examine the influence that such prepared curriculum materials may have on community college faculty satisfaction when teaching online.

Faculty satisfaction is a complex social construct that incorporates several factors. To explore this construct of faculty satisfaction when teaching online, a survey was developed and distributed to faculty at seven community colleges. Factor analysis of the data did not support new constructs of a Technology-related factor or a Time-related factor that influenced faculty satisfaction. However, the items that represent these factors

were found to be important. Logistic regression models were used, and the results did not support a finding that prepared curriculum materials were a statistically significant variable. However, additional data analysis found that specific types of prepared curriculum material were significant, suggesting connections between prepared curriculum and faculty satisfaction.

CHAPTER I

INTRODUCTION

Overview

Community colleges are offering online courses at a steadily increasing rate (Bradley, 2007). The growth of online courses can be attributed to several reasons, including student demand and college system initiatives (Allen & Seaman, 2006; Parry, 2010). To teach online, faculty must use a computer system and prepare class materials in an electronic format. As faculty are increasingly asked to teach online courses, they report frustrations with the technology as well as frustrations with the time required to prepare and teach online courses (Barnes, Agago & Coombs, 1998; Distance Education, 2001; Hirumi, 2003; Rockwell, Schaur, Fritz & Marx, 1999; Schifter, 2000; Tabata & Johnsrud, 2008).

Recently, book publishers such as McGraw-Hill Higher Education, Pearson Learning Solutions, and Cengage Learning have started supplying prepared electronic instructional resources and entire curriculum that can be used to deliver online classes (Cengage Learning, 2012, McGraw-Hill Higher Education, 2012; Pearson Learning Solutions, 2012). Use of these third-party prepared materials can range from including a single item to an entirely prepared online class, where the faculty simply logs in and facilitates the class. For purposes of this study, I will refer to these electronic instructional resources and curriculum as "prepared curriculum materials." The use of

these materials, previously unstudied, raises the question of how they might influence faculty satisfaction.

Numerous studies on faculty satisfaction have contributed to the body of knowledge regarding faculty and variables that influence their job satisfaction. (Bolliger & Wasilik, 2009; Bozeman & Gaughan, 2011; Dongbin, Twombly & Wolf-Wendel, 2008; Hagedorn, 2000; Iiacuqa, Schumacher, & Li, 1995; Sabharwal & Corley, 2009; Seifert & Umbach, 2008; Vodanovich & Piotrowski, 2005). However, faculty satisfaction with respect to teaching online is still not fully understood. Further, a gap exists in the literature regarding the impact of using prepared curriculum materials on faculty satisfaction. Accordingly, this study examines whether prepared curriculum materials have any influence upon faculty satisfaction when teaching online.

Chapter 1 provides an overview of this study. First, the Study Context section of this chapter describes the significant growth of online classes at community colleges. Second, in the Problem Statement section, I discuss the pressure that the growth of online instruction has put on faculty and how it is changing faculty's work at a fundamental level. This section pays particular attention to faculty frustrations with technology and time, which are key factors revealed by the existing literature. This section also introduces and discusses the use of prepared curriculum materials, which may mitigate faculty's frustration in terms of technology and time. In the third section, I present the purpose of this study. In the fourth section, the guiding research questions are presented, followed by the significance of this study and the limitations of this study. I conclude this chapter with definitions of key terms and a brief chapter summary.

Study Context

Online course offerings are growing at community colleges and will likely continue to grow. Students show a strong trend toward preferring to enroll in online classes: "When given an option to take a course online, students will enroll" (Allen & Seaman, 2003, p. 23). In 2003, online enrollments increased 20% from the prior year to 1.9 million students in the United States (Allen & Seaman, 2004). During this time, Allen and Seaman (2003) found that 13% of students who attended institutions offering online classes took an online class. Between 2004 and 2005, online course enrollment at community colleges continued to grow by 15% (Bradley, 2007). The trend continued into 2008, where Allen and Seaman (2010) noted that over 4.6 million students enrolled in at least one online class. This increase reflected a 17% jump in online enrollments from 2007.

This double-digit growth in online classes has continued year after year, while overall college enrollment has not grown as fast (Bradley, 2007). While online enrollment at community colleges grew by 15% between 2004 and 2005, overall enrollment grew by just 2% (Bradley, 2007). The data suggest that the growth of online courses is not solely due to new enrollments, but rather currently enrolled students choosing to take online courses as a delivery method.

Figure 1 shows the significant growth in the number of online students from 1.6 to 6.1 million students from 2002-2010 (Allen & Seaman, 2011). This figure compares total enrollment numbers and online enrollment from 2002-2010. These data show an approximately 31% growth in online classes during this period but a relatively flat overall

enrollment of 1.5%. Figure 2 illustrates the growth in online enrollments as a percentage of total enrollments to highlight the growth of online courses.

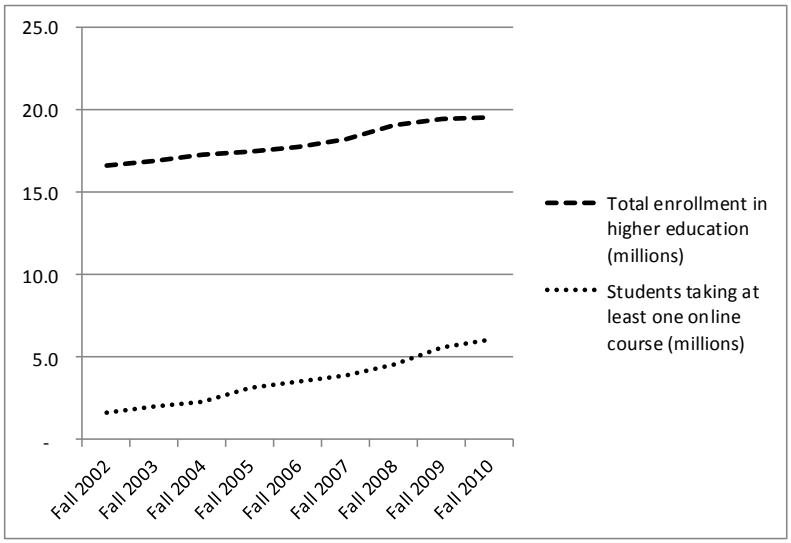

Figure 1. Total Enrollment and Online Enrollment, 2002-2010. Adapted with permission. Source: Allen & Seaman, 2011, p. 112.

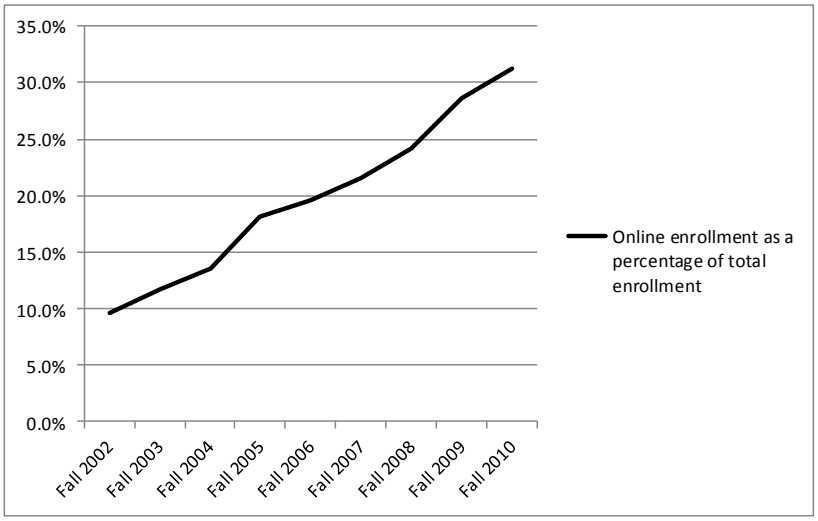

Figure 2. Online Enrollment as a Percent of Total Enrollment, 2002-2010. Adapted with permission. Source: Allen & Seaman, 2011, p. 11.[1]

[1] From "Going the distance: Online education in the United States 2011," by I. E. Allen & J. Seaman. Copyright 2011 by the Babson Survey Research Group. Adapted with permission, see Appendix A.

In addition to increasing student demand, some college systems are mandating online learning. The University System of Maryland requires 12 undergraduate credits in alternative modalities, such as online classes (Parry, 2010), while the Minnesota State Colleges and Universities System (MnSCU) has set a goal of having students complete 25% of their coursework online by 2015 (Parry, 2010). Accordingly, these goals demonstrate the pressure to increase enrollment in online classes.[2]

The student base is shifting from a face-to-face modality to an online modality, and consequently community college instructors are expected to adapt to the new teaching demands of current and future postsecondary students. This presents challenges. In "Survey: Enrollment in Distance Education Courses Swells as Colleges Struggle to Keep Pace with Demand," Paul Bradley (2007) noted that about 70% of community colleges are not able to keep up with the demand for online courses, and this demand is likely to increase. Because the overall enrollment is relatively flat, the need for more teachers may not be warranted. However, because of a change in enrollment patterns and pressures from college systems, existing faculty need to adjust to a new work environment. Simply put, teaching online is inevitable for many community college faculty members because student demand is increasing and college systems are mandating its use.

In the United States, the use of distance education is not new. It can be traced back to the 1800s when universities made coursework available to farmers (Maloney as cited in Stumpf, McCrimon, & Davis, 2005). Even though distance education has existed in many forums for over a century, the technical skills required of faculty to interact in an

[2] Some states now mandate that students take at least one online class as a requirement for high school graduation. Such states include Alabama, Florida, Idaho, Michigan, and Virginia (Associated Press, 2012; Koebler, 2011).

online format can be an additional burden. Today's online class environment is different from previous distance learning modalities because the use of the Internet to deliver content has not only changed the delivery method, but has also shifted our understanding of learning. "It must be recognized that technological advances are an integral part of this new era, and community colleges must understand that distance learning is a total new paradigm" (Stumpf et al., 2005, p. 359). This shift in delivery requires a corresponding shift in the way faculty teach. That is, the current popular method of distance education, online learning, is unique in the way it requires faculty to change fundamentally the way they do their jobs to meet the technological and pedagogical requirements of teaching in this new modality.

Given this environment, it is increasingly important to understand faculty satisfaction with online teaching because faculty satisfaction plays a critical role in the retention of faculty and is directly connected to student achievement (Truell, Price, & Joyner, 1998). Understanding the factors that contribute to or interfere with faculty satisfaction is also critical to understanding what contributes to quality online education.

The Sloan Consortium (Sloan-C), a professional higher education organization that promotes the integration of online learning into the mainstream of higher education, has identified faculty satisfaction as one of five essential components of effective online education. The other four pillars are learning effectiveness, scale, access, and student satisfaction (Moore, 2011). These five pillars are interrelated and collectively model a quality framework for online education. Figure 3 graphically illustrates the meshing of the five pillars, including faculty satisfaction, to produce quality education.

Figure 3. The Sloan Consortium's Five Pillars of Quality. Reprinted with permission. Source: Moore, 2011, p. 92.[3]

As institutions of higher education deliver online coursework, the quality and effectiveness of classes must be considered to ensure high quality online education. As the Sloan research indicates, ensuring faculty find their online teaching experiences satisfying will help produce the quality online courses that institutions, students, and the public demand.

[3] From "A synthesis of Sloan-C effective practices," by J. Moore, 2011, p. 92. Copyright 2011 by the Journal of Asynchronous Learning Networks. Reprinted with permission, see Appendix B.

Statement of the Research Problem

The trend in online class growth has increased the demand for faculty to teach online. This increase in demand is particularly true at community colleges, where over 50% of the online classes are offered (Allen & Seaman, 2006). At the same time, it is well established in the literature that teaching online adds additional stress for faculty, and these stressors are frequently associated with frustrations in terms of time demands and technological issues (Barnes et al., 1998; Distance Education, 2001; Hirumi, 2003; Schifter, 2000; Tabata & Johnsrud, 2008). Stress caused by job frustrations often lead to reduced job satisfaction. Sanderson, Phua, and Herda (2000) examined factors that influenced college faculty satisfaction and found that stress has the potential to decrease job satisfaction. To summarize, the demand for more online courses creates job frustrations for faculty, and job frustrations contribute to reduced job satisfaction. In light of this, it is important to understand concepts surrounding community college faculty and their frustrations with technology and time as they relate to teaching online.

Frustration with Technology

Bolliger and Wasilik (2009) reported faculty frustration with technology in their study of faculty satisfaction. They noted that faculty have a high level of dissatisfaction related to the use of "reliable technology and experiencing difficulties with technology" (Bolliger & Wasilik, 2009, p. 113). Frustrations with technology are widespread in teaching online. In a literature review of 13 articles on faculty participation with online teaching, Maguire (2005) noted, "Of all the barriers [to online teaching] cited by faculty

and administrators, the one mentioned most frequently is the lack of technical support" (p. 6).

Frustration with Time

Teaching online is commonly reported as taking more time than teaching the same class face-to-face (Chiou, 2007; Hirumi, 2003; Lorenzetti, 2004; Vodanovich & Piotrowski, 2005). The preparation and management required to teach an online class is significantly different from teaching face-to-face. Reasons for the increased time demands include creating class resources (Bolliger & Wasilik, 2009), managing student interactions (Stumpf et al., 2005), and communicating with students (Picciano, 2005), all of which take more time to do online than in a face-to-face classroom. Most faculty do not receive training on conducting an online class (Maguire, 2005; Rockwell et al., 1999; Sorcinelli, 1994) much less possess the technical skills required to prepare the electronic elements to facilitate an effective online class (Parisot, 1997). Therefore, it is not difficult to understand the numerous reports of frustration by faculty who teach online with regard to technology and time.

Prepared Curriculum Materials

While college faculty who teach online report frustrations with issues of technology and time, the research problem statement raises the question of whether prepared curriculum materials affect faculty job satisfaction. The prepared online curriculum may contain specific curricular objects and may include items such as pre-made quizzes, slide show presentations, games, streaming video, or virtual laboratories

where students can manipulate objects and see results. The use of these materials can range from using only one specific electronic object to a fully prepared class ready for the instructor simply to begin teaching (McGraw-Hill Higher Education, 2012).

Textbook publishers are one source of prepared curriculum materials. In 2012, textbook publisher McGraw-Hill reported having over 50 fully developed online college courses, ranging in discipline from accounting to psychology. The publishing company established a division called McGraw-Hill Online Learning whose focus is to develop online resources to accompany their printed textbook products (McGraw-Hill Higher Education, 2012). McGraw-Hill states that content experts, writers, and designers work together to develop these materials, keeping in mind educational constructs such as Bloom's taxonomy and course outcomes (McGraw-Hill Higher Education, 2012). Another major textbook publisher, Pearson Learning Solutions, is also investing heavily in developing these online resources. Pearson has 96 courses in 11 academic areas, which are touted as being "iPad ready" (Pearson, 2012) which implies that a faculty member does not need a lot of technical skill to provide an engaging experience for the student. Cengage Learning reported that they also have hundreds of online courses developed and ready for faculty to use (Cengage, 2012). In short, while these companies are producing many instructional resources, the literature has not examined whether these resources reduce college faculty frustrations when teaching online. Therefore, the research problem of this study is the unknown effects of prepared curriculum materials on community college faculty satisfaction when teaching online.

Statement of Purpose

In light of the research problem, the purpose of this study is to examine the influence that prepared curriculum materials may have on community college faculty satisfaction when teaching online. Specifically, in this study, I test the assumptions and outputs of a foundational study on college faculty satisfaction when teaching online, investigate whether the literature's discussion of technology and time can help deepen our understanding of faculty satisfaction, and examine the effects that prepared curriculum materials have upon faculty satisfaction.

The foundational study regarding faculty satisfaction when teaching online at a university was conducted by Bolliger and Wasilik (2009). They used factor analysis to examine items of faculty satisfaction through the use of three factors: Student-related, Instructor-related, and Institution-related. However, of the three, only the Student-related factor had a Cronbach's alpha coefficient exceeding 0.70, which is generally considered as a standard reliability level according to Nunnally & Bernstein (1994). Both the Instructor-related and Institutional-related factors had Cronbach's alpha scores of 0.55. Thus, the results of their study raise additional questions about the reliability of explaining faculty satisfaction when teaching online through the use of these three factors. Bolliger and Wasilik's contribution to the body of knowledge provided a foundational study that begins to understand faculty satisfaction when teaching online. However, they may have oversimplified faculty satisfaction by limiting the examination to only three factors, as only one of their factors was determined to be statistically significant.

In contrast to the Bolliger and Wasilik study, my literature review suggests that Technology-related and Time-related factors might be more appropriate to explain faculty satisfaction when teaching online. As such, this research adds to the body of knowledge regarding faculty satisfaction by isolating the effects of prepared curriculum materials with regard to faculty frustrations of Technology-related and Time-related factors.

Numerous studies in the past fifty years, including the Bolliger and Wasilik study (2009), have examined faculty satisfaction. These studies investigated the role of multiple variables (Hagedorn, 2000; Iiacqua et al., 1995; Schuster & Finkelstein, 2006), as well as specific variables such as gender (Sabharwal & Corley, 2009), discipline (Sabharwal & Corley, 2009; Terpstra & Honoree, 2004), faculty rank (Truell et al., 1998), and instructional autonomy (Kim, Twombly, & Wolf-Wendel, 2008). This body of literature on faculty satisfaction is important, but it does not completely reflect the current context of today's faculty teaching load, including both face-to-face and online classes. Recently, researchers have shown a greater interest in looking at job satisfaction with regard to teaching online (Bolliger & Martindale, 2004; Bolliger & Wasilik, 2009; Tabata & Johnsrud, 2007; Taylor & White, 1991). In conjunction with the increased focus on online teaching, the new intervening factor of prepared curriculum materials could have an impact upon faculty satisfaction. A gap exists in the current literature addressing the use of prepared curriculum materials and faculty satisfaction when teaching online. My contribution to the body of knowledge is to provide additional clarification regarding faculty satisfaction when teaching online by examining the effect of the use of prepared curriculum materials. This study will focus on faculty who teach at community colleges

as they generally teach more classes per semester than university faculty, and the majority of online classes in the United States are taught at community colleges.

Research Questions

As previously stated, the purpose of this study is to examine the influence that prepared curriculum materials may have on community college faculty satisfaction when teaching online. Therefore, the overarching research question for this study is: *Do prepared curriculum materials influence community college faculty satisfaction when teaching online?* As this is broad and potentially difficult to test and answer, it will be operationalized through four specific research questions.

Research Question 1

The first research question in this study is: To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of Bolliger and Wasilik's (2009) Student-related, Instructor-related and Institution-related factors?

The first question in this study addresses whether or not prepared curriculum materials have an influence on faculty satisfaction for community college faculty who teach online. This question is answered by replicating much of the Bolliger and Wasilik (2009) study while adding a key variable of prepared curriculum materials. Accordingly, this study examined the effects of the three factors that Bolliger and Wasilik identified as impacting faculty satisfaction when teaching online (student, instructor, and institution

factors) as well as the variable of prepared curriculum materials, which is the scholarly contribution of this study.

Figure 4 depicts this discussion by visually presenting the three factors Bolliger and Wasilik (2009) identified along with the corresponding items from the survey instrument and includes the variable of prepared curriculum materials.

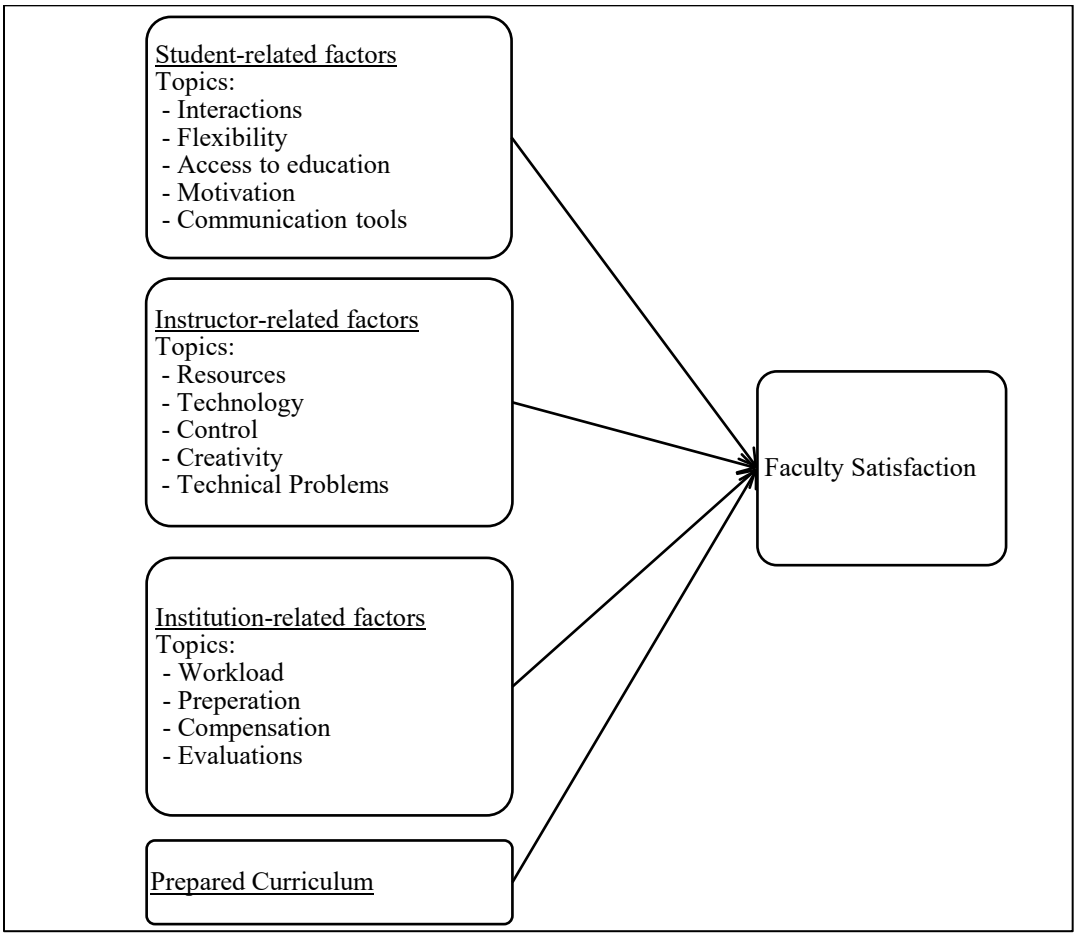

Figure 4. Framework of Research Question 1.

Research Question 2

The second research question in this study is: To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of the Technology-related factor?

The literature review for this study revealed frequent reports of *technology* as a major source of frustration from faculty when teaching online. Accordingly, a factor of technology was developed and examined in this study. The second question in this study addresses whether or not prepared curriculum materials have an influence on faculty satisfaction for those who teach online with respect to this new factor of technology.

Figure 5 depicts this second discussion as it shows the factor of technology along with the corresponding items from the survey instrument and includes the variable of prepared curriculum materials.

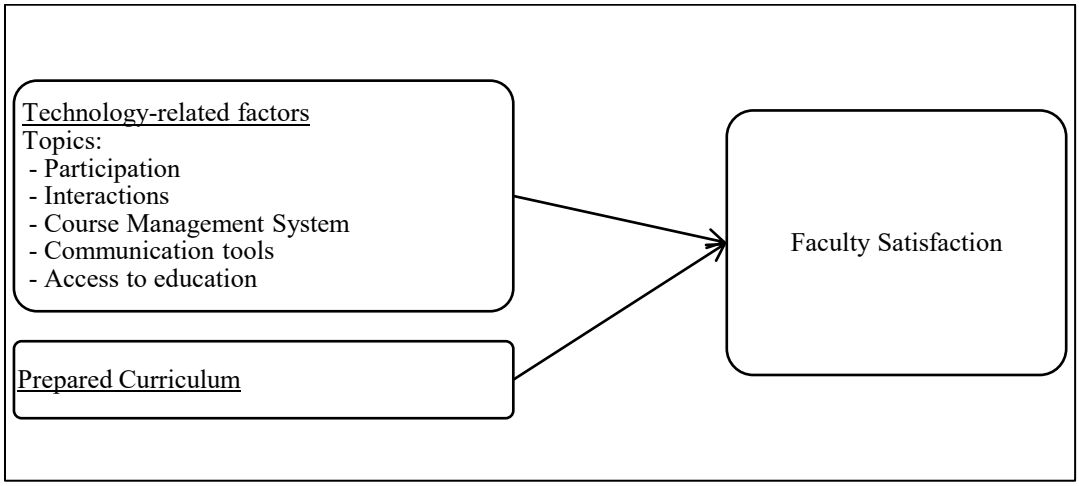

Figure 5. Framework of Research Question 2.

Research Question 3

The third question in this study is: To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of the Time-related factor?

The third question in this study addresses whether or not prepared curriculum materials have an influence on faculty satisfaction for those who teach online with respect to this new factor of time.

The literature review for this study also revealed frequent reports of *time* as a major source of frustration for faculty when teaching online. Accordingly, a factor of time was developed and examined in this study.

Figure 6 depicts this third discussion by showing the factor of time along with the corresponding items from the survey instrument and includes the variable of prepared curriculum materials.

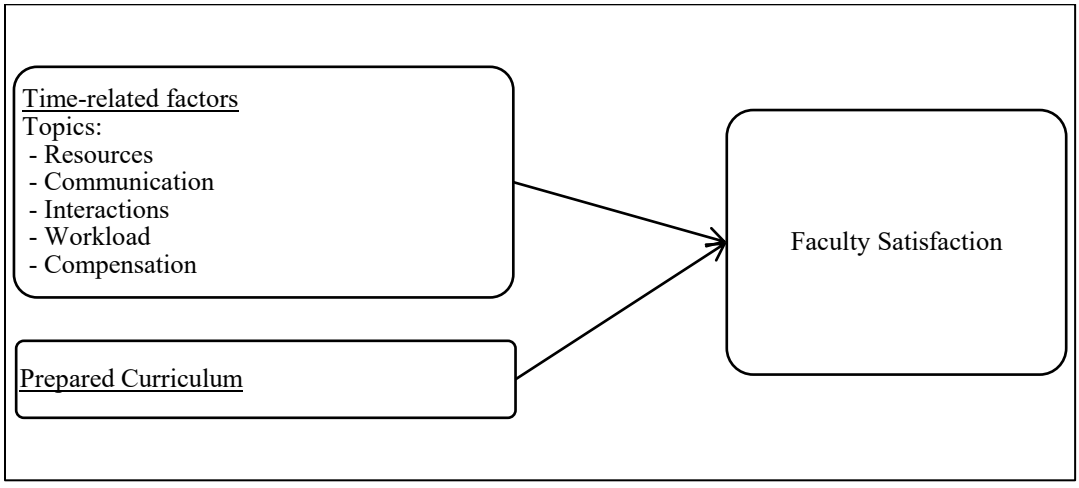

Figure 6. Framework of Research Question 3.

Research Question 4

The fourth question in this study is: To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of both the Technology-related and the Time-related factors?

By examining these two new factors, technology and time, in more detail, the last question in this study will address whether or not prepared curriculum materials have an influence on faculty satisfaction for those who teach online with respect to both of the new factors of technology and time together.

Figure 7 depicts this fourth discussion by showing which shows the factor of technology and time along with the corresponding items from the survey instrument and includes the variable of prepared curriculum materials.

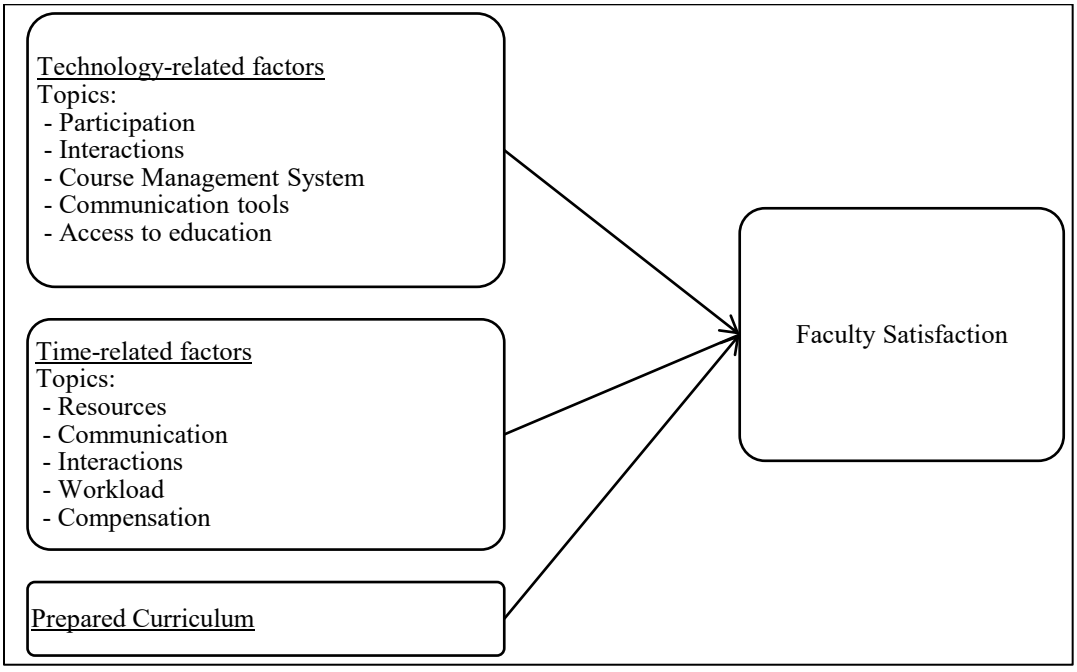

Figure 7. Framework of Research Question 4.

Significance of Study

Online courses are growing, particularly at community colleges. Unfortunately, the dynamic between teaching online and faculty satisfaction has been largely left unaddressed by scholars of higher education. The rapid increase in student demand for online course offerings has put significant pressure on higher education faculty and administrators (Allen & Seaman, 2011; Bolliger & Wasilik, 2009; Bradley, 2007). In 2005, over 50% of all online undergraduate courses taught in the United States were at an associate level institution (Allen & Seaman, 2006). "Two-year associate's institutions have the highest growth rates and account for over one-half of all online enrollments for the past five years" (Allen & Seaman, 2007, p. 1). From 2001-2006, four-year institutions had the lowest online enrollments and a lower growth of online courses offerings (Allen & Seaman, 2007). In addition to current enrollments, 87.8% of college administrators at associate degree institutions are expecting online courses to continue to grow. To illustrate the disproportionate levels of online course offerings among the different types of institutions, Figure 8 shows online enrollment by institution type in 2006.

This study adds to the existing body of knowledge on community college faculty satisfaction by examining satisfaction levels of instructors who teach online by examining the effects of prepared curriculum materials. Knowledge regarding the use of prepared curriculum materials and their effect on faculty satisfaction may lead to changes in the way academic leaders and faculty approach online teaching in an effort to increase faculty satisfaction. Further, it inquires whether a third party vendor, such as a textbook publisher, plays a role in increasing faculty satisfaction.

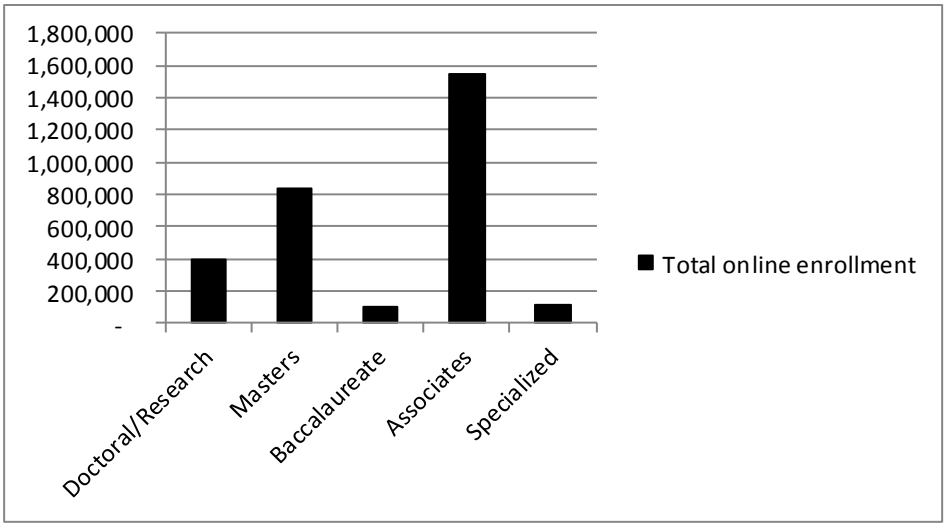

Figure 8. Online Enrollment by Institution Type in 2005. Adapted with permission. Allen & Seaman, 2006, p. 6.[4]

Limitations

The following limitations have been identified in this study:

1. This study is limited to seven community colleges located in the Midwest United States. There are 1,655 community colleges in the United States (U.S. Department of Education, 2012), but for reasons of convenience, this study was limited to several colleges in one geographic region.
2. This study does not evaluate the source or the effectiveness of prepared curriculum materials. There are many sources of prepared curriculum materials, ranging from professional book publishers to instructional designers to online community sharing groups. The measure of the effectiveness of each source is outside the scope of this study.

[4] From "Making the grade: Online education in the United States, 2006," by I. E. Allen & J. Seaman, 2006, p. 6. Copyright 2006 by the Babson Survey Research Group. Adapted with permission, see Appendix A.

3. This study only measures self-reported data from faculty. The faculty who participated in this study did so voluntarily and reported their opinions, not observable facts.
4. This study does not account for any mandated campus, system, or state policies when teaching online, though that might affect faculty satisfaction. Because this study spanned several colleges, I did not attempt to study faculty in the context of one institution, since each college may or may not have policies specific to online teaching.
5. The participants were not presented with definitions of the different teaching modalities. This means that each participant answered the survey questions using his or her own definitions of an online class, a face-to-face class, and a hybrid class. The invitation letter sent to faculty stated only that they were receiving the invitation because they were identified as teaching at least one class online.
6. It is widely accepted that an online class can be conducted in a synchronous format, an asynchronous format, or a combination of both. This study does not account for differences of format type.
7. This study also does not account for personal variables of faculty that might influence satisfaction.

Definition of Terms

The following terms are defined within context of this study. Some of the definitions have common use and understanding within higher education. However, some definitions are specific to colleges examined in this study. To protect the identity of the colleges, I use the pseudonym of "Orion Community College."

Adjunct faculty member: A faculty member who teaches four or fewer credits in one term with no guarantee of future employment (Orion Community College collective bargaining agreement).

Course management system (CMS): A generic name for web based software that facilitates the online class. Course management systems include several electronic tools, such as discussion boards, chat rooms, lecture material, quizzes, and grade books (Ko & Rossen, 2002). Cited references in this study may use alternative names, such as asynchronous learning networks (ALN), online course management (OCM), virtual learning environment (VLE), and learning management system (LMS).

Face-to-face class: Sometimes referred to as "traditional" or "residential" classes. These are classes that do not have any online technology incorporated into the class. This type of class is delivered in a classroom with students and the faculty member present in the room (Allen & Seaman, 2010).

Faculty: These are individuals employed to teach students. They can be hired with a status of adjunct, part-time, or full-time (Orion Community College collective bargaining agreement).

Full-time faculty: Faculty member(s) who teach 30 credits inside of two semesters each academic year with an assumption of continuous employment (Orion Community College collective bargaining agreement).

Hybrid class: A class that mixes face-to-face and online delivery methods. Portions of the class time are spent in a face-to-face setting, and other portions of the

class are spent in an online setting, typically using a CMS. This modality is also sometimes referred to as blended learning (Allen & Seaman, 2010).

Online class: A college course that is primarily conducted using Internet based technology with little to no face-to-face classroom time. The Sloan Consortium defines an online class as having 80% or more of the coursework completed in an online modality (Allen & Seaman, 2010). References cited in this study may also refer to online classes as "e-learning", "asynchronous learning", "distance learning," and "web learning."

Part-Time Faculty Member: A faculty member who typically teaches between five and 13 credits in an academic term (Orion Community College collective bargaining agreement).

Prepared Curriculum Materials: Course materials that are prepared by a third-party. These materials can range from one specific item, such as an interactive lab or a video clip, to an entirely developed class consisting of prepared homework questions, presentations, and assessments. Sources of prepared curriculum materials can come from book publishers, instructional designers, or online community groups.

Chapter Conclusion

Online coursework has grown significantly over the past decade and is projected to continue to grow. Teaching online, particularly at community colleges, is an inevitable factor in such growth, and is therefore changing the way faculty teach. As faculty are assigned online courses, they report frustrations with the amount of time it takes to

prepare a course and frustrations with technology. These frustrations erode faculty satisfaction, which is a pillar of quality. Bolliger and Wasilik (2009) studied faculty satisfaction when teaching online and provided the foundation for this study through the use of three factors.

The literature review of this study has revealed that faculty are dissatisfied with two common themes of technology and time. An intervening variable of prepared curriculum materials could impact faculty satisfaction by reducing frustrations with time and technology. However, the impact that third-party resources have upon faculty satisfaction have not been addressed. This study examines whether these resources have any influence on faculty satisfaction.

CHAPTER II

LITERATURE REVIEW

Introduction

Online course offerings are increasing at community colleges, and as a result faculty are increasingly being asked to teach online. As a result of the evolution in faculty's work environment from face-to-face to online teaching, it is important to examine faculty satisfaction in context of this new work environment. Understanding faculty satisfaction has implications for faculty turnover and student satisfaction. In this chapter, I will examine the literature related to Bolliger and Wasilik's (2009) three factors, the literature related to two potential new factors, and the literature related to prepared curriculum materials.

Context

The Bolliger and Wasilik (2009) study serves as the foundation for this study because of its particular focus on the satisfaction of faculty who teach online, as opposed to other studies that have examined the general faculty population. Their theoretical framework viewed faculty satisfaction as having three contributing factors: Student-related, Instructor-related, and Institution-related. Bolliger and Wasilik found the Student-related factor had a Cronbach's alpha coefficient of 0.86, yet the instructor and institution factors did not reach the commonly accepted threshold of 0.70 for reliability.

These data suggest these are not reliable factors and thus open the possibility for the identification of other factors that could explain faculty satisfaction more accurately.

The literature reviewed for this study suggested the introduction of two new factors that could potentially influence faculty satisfaction: A Technology-related factor and a Time-related factor. After discussing Bolliger and Wasilik's three factors (2009), I will present the literature to support the examination of these two new factors with regard to faculty satisfaction.

In addition, Bolliger and Wasilik (2009) did not examine the potential influence of prepared curriculum materials. Prepared curriculum materials could potentially alleviate some barriers when teaching online by providing existing class resources. In theory, the technological hurdles of creating an online class could be reduced by using prepared curriculum materials. Additionally, the time required to create and administer on online class could be reduced by using prepared curriculum materials. Currently, a gap exists in the literature examining the effect that prepared curriculum materials have on faculty satisfaction levels. Prepared curriculum materials are the specific variables of interest for this study and represents the scholarly contribution of this study because it could influence faculty satisfaction when faculty job responsibilities include teaching online.

Student-related Factor

Bolliger and Wasilik concluded that, of the three factors they identified, the Student-related factor had the most influence on faculty satisfaction. They asserted faculty enjoy teaching online because it provides students with access to education. This

supports previous research that also found faculty find satisfaction in teaching classes to students unable to attend a face-to-face classroom (Almeda & Rose, 1999; Betts, 2000; Rockwell et al., 1999). Bolliger and Wasilik (2009) also stated that a motivating force for faculty is engaging with students in an environment with high levels of communication. Fredericksen, Picket, Shea, Pelz, & Swan (2000) researched faculty satisfaction in the State University of New York college system. They concluded that student performance and interaction with students indeed positively influenced faculty satisfaction. The conclusions of Fredericksen et al. supported previous research conducted by Taylor and White (1991), who found that three of the top five most important items for faculty satisfaction in distance education related to students and student performance.

Instructor-related Factor

Bolliger and Wasilik (2009) also reported an Instructor-related factor in their study. They stated that faculty satisfaction increases when faculty can enhance student learning. Truell et al. (1998) found that faculty who reported the highest levels of satisfaction identified items associated with "the work itself" (p. 115). Truell et al. concluded that the work itself is a variable in influencing faculty satisfaction. The findings of Bolliger and Wasilik and Truell et al. suggest that faculty satisfaction is influenced by intrinsic motivations, such as teaching students and helping students learn.

This intrinsic dimension of the work itself is also discussed by Hagedorn (2000), who proposed a framework to understand faculty satisfaction based on a sliding scale from disengagement to actively engaged. Her framework includes a factor of "the work

itself" interrelating to other factors. This suggests that faculty essentially enjoy the work they do, which Hagedorn defines as, "A derived measure comparing the actual proportions of time spent in research and teaching to the desired time spend in these activities" (2000, p. 13).

Another element that contributes to the Instructor-related factor is years of teaching experience. Ulmer, Watson, and Derby (2007) studied faculty's perceptions of distance education and found that years of teaching experience influenced viewpoints on the impact of distance education on student learning. They reported that faculty who had more experience teaching in distance education perceived better student performance, greater student interaction, and more mastery of subjects than faculty with less experience. This relates back to Bollinger and Waslik's (2009) finding that positively influencing student learning, which Ulmer et al. (2007) found was heightened by a greater number of years of teaching experience, increases faculty satisfaction.

Institution-related Factor

Bolliger and Wasilik (2009) reported an Institution-related factor as the third and final factor in their study. They cited issues such as compensation, promotion, tenure, and intellectual property rights as faculty concerns. They also asserted that the biggest hurdle for faculty to teach online is a concern regarding workload. The following studies also suggest that issues such as institutional policies and infrastructure, including finances and support, also play a role in influencing faculty satisfaction.

Schifter (2000) found that a lack of institutional technical support was the number one reason faculty resist teaching online classes. Schifter also reported that other top

inhibitors for faculty included a "lack of release time…concern about faculty workload…lack of grants for materials/expenses…and concern about quality of courses" (p. 19). Lee (2001) studied instructional support provided by the institution and its relationship to faculty commitment, motivation, and satisfaction. Lee reported that the amount of instructional support faculty receive from the institution is proportional to the faculty member's level of motivation, commitment, and satisfaction, suggesting that support from the institution has a direct impact on faculty satisfaction.

The previous section in this literature review discussed the three factors identified by Bolliger and Wasilik (2009). As previously noted, the Instructor-related factor and the Institution-related factor did not reach a Cronbach's alpha level of 0.70, which suggests these are not reliable factors with which to examine faculty satisfaction. This opens the door to question if other factors might be more appropriate to examine faculty satisfaction. In the discussion of the three factors above, issues of technology and time are common threads that span across their factors. With this observation, in addition to a broader literature review that included many articles that stated issues of technology and time influence faculty satisfaction, I hypothesize that factors of technology and time might be more appropriate factors with which to examine faculty satisfaction. The following section continues with supporting literature for the identification of factors of technology and time.

Reorganizing the Literature and Factors

The foundational study by Bolliger and Wasilik (2009) used three factors to examine faculty satisfaction when teaching online. However, based on the literature

review, I am proposing two new factors that influence faculty satisfaction: Technology-related and Time-related. The literature suggests that faculty who teach online regularly report major frustrations with technology used in online learning and with the amount of time it takes to develop and teach an online class. These frustrations increase the dissatisfaction experienced by faculty (Barnes et al., 1998; Distance Education, 2001; Hirumi, 2003; Schifter, 2000; Tabata & Johnsrud, 2008), and have a direct impact on faculty satisfaction, which can lead to faculty turnover and can negatively influence student satisfaction (Heckert & Farabee, 2006; Johnsrud & Rosser, 2002; Sanderson et al., 2000; Xu, 2006).

The Bolliger and Wasilik (2009) instrument contained items representing the factors of technology and time. However, the specific influence these items had on faculty satisfaction was muted and could not be examined because these items were categorized into Student-related, Instructor-related, and Institution-related factors. Creating new factors composed exclusively of items related to technology and time will isolate the specific influence of these factors. Since two of Bolliger and Wasilik's factors appeared to be unreliable (Nunnally & Bernstein, 1994) and since the literature suggests issues of technology and time do play roles in faculty satisfaction, these may be more appropriate factors though which to view faculty satisfaction. To answer all of the research questions in this study, items in the instrument were re-categorized into Technology-related and Time-related factors. The following sections present the literature supporting the development of these two new factors.

Technology-related Factor

Technology has had a tremendous impact on education. Although technology capable of facilitating online education has existed for over a decade, some faculty still resist using it to deliver course material (Tabata & Johnsrud, 2008), even though faculty have had access to this technology. The National Education Association (1998) reported almost all faculty had access to a computer and email, and only 66% of faculty used technology to communicate with their students. Faculty often attribute this resistance to not having the required level of technological competency (Parisot, 1997). Therefore, the perception of the need for a high level of technological competency as a requirement to teaching online becomes a barrier for faculty.

In contrast to faculty's discomfort with technology, today's typical student comes to college with an extensive portfolio of electronic devices, such as laptops, smartphones, video game consoles, and music playback devices. Social networking is popular among students, and students are comfortable interacting online (Hanson, Drumheller, Mallard, McKee, & Schlegel, 2011). Historically, the new technologies of each generation are eventually integrated into the traditional classroom and, "These nontraditional methods are slowly becoming the traditional method of delivery. PowerPoint presentations take the place of overheads, references to Web sites take the place of handouts, and online webcams take the place of face-to-face contact" (Akroyd, Jaeger, Jackowski, & Jones, 2004, p. 47). However, applying the use of these current technologies to online learning often requires faculty to be competent with the technologies and to change the way they prepare for and conduct classes. As faculty explore and experiment with online course

technology, their job potentially becomes less about teaching their discipline and more about developing a media-rich, attractive, and educational virtual classroom.

> The technological sophistication of today's college students and faculty are often not equal, and "community colleges must recognize the wide technological gap that exists between some of the providers of knowledge who were trained in the last century and 21st-century receivers of knowledge whom they teach" (Stumpf et al., 2005, p. 359). In a commercial environment, professionally trained web designers create polished and engaging websites that students visit for all their other online activities, including social networking, gaming, and shopping. A large retail store would not typically hire someone without proper credentials or experience as a website programmer or designer to create their online presence. Yet it appears, from the literature, that relatively untrained faculty are expected to develop webpages to teach their courses despite their inexperience with the new technologies. This can leave faculty feeling frustrated and dissatisfied teaching online. Understanding new technologies and developing a course to match students' expectations might not be a skill set that faculty possess; however, faculty "are concerned about developing effective technology skills" (Maguire, 2005, n.p.).

Technology-related issues that faculty find frustrating when teaching online can include using a course management system, encouraging student participation in the online class, communicating with online students, interacting with students online, and providing access to education. Table 1 lists these issues. The following section in the literature review suggests these items collectively are a factor of technology that

influences faculty satisfaction. However, to date, no published literature has examined these issues as a factor of technology as it relates to faculty satisfaction. Additionally, the influence of prepared curriculum materials on community college faculty satisfaction when teaching online has not been examined. Research questions in this study are designed to perform this missing examination.

Table 1. Issues Representing Technology-Related Factor.

Technology-related factor
• Course Management System • Communication Tools • Student Participation • Differences in Interactions • Access to Education

Course Management Systems

The center piece of technology typically used by faculty who teach online is a course management system (CMS).[5] In 2006, there were over 36 CMS software publishers (Brovold, 2006). Brand names of popular CMS systems include Blackboard, based in Washington, DC; eCollege, based in Denver, CO; and Desire 2 Learn, based in Kitchener, Ontario, Canada. Each CMS contains variations in features, tools, and appearance, but they provide essentially the same functions to conduct an online class. After receiving proper CMS login credentials, typically issued by the college's IT staff who install and maintain the CMS, the instructor must create, upload, and arrange learning objects in the CMS for students. The virtual classroom created within the CMS

[5] For purposes of this study, CMS is a generic term meaning the electronic mechanism to conduct an online class. Synonyms for CMS may include asynchronous learning networks (ALN), online course management (OCM), virtual learning environment (VLE), and learning management system (LMS).

is then a private collection of webpages and artifacts created by the instructor and available to the students in the class.

The CMS systems typically used by faculty can provide tremendous benefit when used correctly, such as by providing communication tools for faculty and students. However, they can also be a source of frustration if the technology does not work as expected or faculty do not have the technological competency to use the functions of the CMS to conduct their online classes. Lenore S. Brantley, a professor of psychology, described her first experiences teaching online after 40 years of teaching psychology in the classroom (Young, 2010). At first, the software to conduct her online class did not work on her home computer as she had expected. As a consequence, she had to come to campus to teach her online classes. Brantley eventually received technical support and was able to conduct her online classes from home; however, this type of technical support is not commonly needed to conduct a face-to-face class. This is an example of how, when the technology does not work or the instructor does not have the technical competence to resolve technical issues, the CMS can become a source of frustration.

Despite these challenges, CMSs can be beneficial for both faculty and students. Elicker, O'Malley, and William (2008) found that using a CMS instead of a basic website for an online course had more positive reactions from and results for students. In their study, the communication tools of a CMS helped the students achieve better scores than those students whose course just used a basic webpage without any integrated communication tools. The study also found that student satisfaction was higher in the CMS. Satisfaction with the instructor was also greater, resulting in a mean evaluation score of 4.63 in the CMS versus 4.05 in the basic website (Elicker et al, 2008). Thus, a

professionally integrated system for delivering curriculum potentially increases student and faculty satisfaction over a basic website for conducting an online class.

Although a CMS is an essential element to increasing students' satisfaction with online learning, there are still many reports from faculty that simply knowing the CMS is not enough to alleviate their technical concerns. The CMS itself does not provide any content, but rather it provides the electronic framework in which faculty post content and interact with students. Instructors not only have to plan the administration of the class, but also have to create or find electronic files to populate the CMS classroom. In a face-to-face classroom, the teacher may draw a complicated formula on the whiteboard and talk through each step, and this requires relatively little technological competence to convey the content. To present the material in the same way in an online class, the instructor would have to create a sequence of complex electronic slides or videos and place the electronic files in the appropriate location in the CMS. These expectations are a technological step requiring significantly more time and technological competency than most instructors need for a traditional class, despite the presence of a CMS.

As the previous example illustrates, the technological competence required to create an online learning experience similar to what instructors provide students in their face-to-face classes, despite the presence of a CMS, is usually beyond the level of the instructor. Phillips, Wells, Ice, Curtis, and Kennedy (2007) studied faculty who completed a training program preparing faculty to teach using a CMS, and their "data indicated that the majority of faculty placed a high value on technical and pedagogical support" (p. 3). While faculty were satisfied with the initial training, feedback gathered after the training program centered on frustration with a lack of technical knowledge

needed to develop the class sites as desired. They investigated this frustration and hypothesized that it was due to "lack of technical knowledge required for development of specific content or activities. However, in some instances, the frustration appeared to be related more to the nature of online teaching itself" (p. 4). They concluded that some faculty mistakenly viewed the technology as a substitute for learning pedagogy. This study suggests that faculty training needs to be ongoing because, as Phillips et al. (2007) demonstrated, even after an intensive training program, faculty were still confused about the technology. This suggestion is supported by Chapman "that even experienced classroom instructors require assistance to get their materials ready for online delivery" (2009, p. 14).

However, this support is often lacking. Schifter found the top inhibitor for using online technologies was a "lack of technical support provided by the institution" (2000, p. 19). Consequently, this lack of support can lead to faculty's feeling overwhelmed and frustrated or simply refusing to teach online. Tabata and Johnson (2008) found the largest predictor of non-participation of online teaching was "resources being available to support technology needs" (p. 633). This literature suggests that faculty must be supported and trained and feel comfortable using a wide variety of technologies, including the CMS.

Technology is an issue for all faculty who teach online; however part-time faculty who teach online face even greater challenges. Akroyd et al. (2004) found that more full-time faculty "used websites to convey a variety of class information than did part-time faculty" (p. 42). Their data suggested that with only of 60% of part-time faculty having Internet access at the college, they did not have sufficient Internet access (Akroyd et al.,

2004). This study could explain the findings of previous work specifically focused on part-time community college faculty, which suggested that full-time faculty are more satisfied in general than part-time faculty (Wagoner, 2007; Williams & Wiatrek, 1986). In light of previous research showing that community colleges deliver more online classes than do universities (Allen & Seaman, 2007) and the number of part-time faculty members at community colleges is increasing (Truell et al., 1998), it seems that part-time faculty are teaching online more than before. With this understanding, it becomes important to understand part-time faculty satisfaction as well as full-time faculty satisfaction.

Communication Tools

One of the key groups of tools provided by a CMS is the group that facilitates communication. Incorporating effective communication tools into an online class is important because of its effect on student learning. Eliker, O'Malley, and William (2008) evaluated eight Introduction to Psychology classes at a large Midwest university to determine the effect of online communication tools on student learning. Four sections of the course were led by a teacher who used a traditional basic website as the foundation of the class without any built-in communication mechanisms. Four other sections were taught by teachers using a CMS that included email and messaging functions. At the end of the semester student achievement was measured; the students who were taught using the basic website received an average course grade of 66%, while the students in the CMS sections received an average course grade of 73% (Eliker et al., 2008). A post-hoc ANCOVA test revealed that the difference in student performance was the improved

communication with the instructor. The authors asserted that easy-to-use communication tools, such as those integrated in a CMS, are more effective in transmitting knowledge and helping students learn than platforms with no built-in communication tools. Student performance increases when a well-integrated, varied communication system is in place. The services and convenience of an integrated communication system should not only impact student performance, but also increase student and faculty satisfaction since faculty satisfaction is "tied to seeing students learn in the new environment" (Meyer, 2002, p. 74).

Email, although very important for student-instructor communication, is not the only communication tool an instructor must master to facilitate online classes. In his 2005 study, Spector researched the effects of different communication mechanisms in online classes. His study looked at three classes: a freshmen level class, a junior level class, and a graduate level class. The instructor of all three classes had previous experience teaching online. In terms of communication methods, students in each class were required to use email, discussion threads, and synchronous chats. Students and teachers in each class submitted a weekly sheet to record their time spent on tasks. In addition, the logs kept by the CMS were used to collect data. After analyzing all the logs, Spector (2005) found that no one definitive communication tool stood out from the others in terms of student preference. "Moreover, when the data were examined across the three cases, the basic pattern of higher level students investing more time than lower level students persists, regardless of the form of e-collaboration involved" (Spector, 2005, p. 13). The level of the class did not favor one communication tool over another, but effectiveness came from using several tools. This study is important because it suggests

that, in order to teach online successfully, faculty need to integrate a variety of communication mechanisms into the design of the online courses.

Student Participation

Research has found that faculty also need to create an online environment that facilitates participation among students in addition to providing several communication mechanisms. Whereas communication tools allow students to communicate with others in the class, *participation* means engaging the student with the course materials.

Menchaca and Bekele (2008) studied factors for creating a successful online class as well as a successful learning environment and found that providing a variety of tools to allow students and instructors to engage with the material was key to the satisfaction of both students and faculty. In their study, students and faculty completed a survey, and an analysis of the results produced eleven categories of variables in three areas. The highest ranked code by students (49.6%) and faculty (56.5%) was "technology tools" (Menchaca & Bekele, 2008, p. 240). "By far, the largest coded category for both student and faculty was multiple tools." (Menchaca & Bekele, 2008, p. 241). The tools in the online courses allowed the students to participate with each other and assisted in their understanding of the content. Similar to communication tools, no preference for any one single tool was revealed; however, the presence of multiple tools within the online class allowed for different learning styles. The value of this study is that it suggests that, when teaching online, faculty need to integrate and use several different tools in their class.

Zinser and Hanssen (2006) researched baccalaureate completion at a university by students who first graduated from a community college. They suggested that community

colleges serve two different types of students: students who are focused on vocational programs and are motivated to gain employment and students who are academically motivated and are motivated to transfer to a university. Gill and Leigh (2003) suggested that the traditional role of community colleges to prepare students to transfer to a university has changed significantly in recent years to include vocational degrees. Zinser and Hanssen (2006) found community colleges were struggling trying to serve both categories of students and that transfer students completed a degree more often than students focused on a vocation.

Differences in Interactions

Students interact differently in an online class than they do in a face-to-face class. In face-to-face classes, there can be real-time dialog allowing multiple participants to engage in the discussion at the same time. Online classes making use of discussion forums use a more laddered approach to interactions where one student makes a comment, then another student moves the conversation forward by making a second comment, then a third student moves the conversation further by adding another comment, and so on. Thus, online classes potentially have more reflective written dialog than the active verbal dialog in face-to-face classes.

Heckman and Annabi (2005) analyzed the content of class discussions obtained from senior university students enrolled in a capstone class. Each class had two sections, and each section was divided into two sub-groups, making a total of four student subgroups. Four of the discussions were face-to-face and four online (Heckman & Annabi, 2005). The students looked at case studies then discussed them in class. The

researchers analyzed transcriptions from the class discussions and logs from the course management software revealing "the sheer difference in the number of individual utterances" (Heckman & Annabi, 2005, n.p.). Face-to-face, the students averaged 146 utterances per session, while online they averaged 63 per session. The teacher averaged 141 utterances per session in class, while only 11 per session online. The authors reported the near 1:1 teacher-to-student utterance ratio in the face-to-face setting allowed for more of a "back and forth" dialog, which one would expect in a senior level capstone class. For comparison, the online sessions had a 5:1 teacher-to-student utterance ratio. Of further note is the length and style of utterance. In the face-to-face session, students spoke on average 30 words and were more informal. In the online counterpart, students used more formal language and used 100 words per utterance, over three times the face-to-face session (Heckman & Annabi, 2005). This finding shows that online instructors must not only adapt to the amount of interaction required in an online class, but also the type of interaction, which tends to be more formal and lengthier. Heckman and Annabi also reported that the type of facilitation required of the instructor in online and face-to-face also differs. In the traditional classroom setting, the teacher facilitated or led the class. In the online session, students did more facilitating (54%) as compared to face-to-face (5%) (Heckman & Annabi, 2005).

Heckman and Annabi's (2005) work is supported by Lockyer, Sargeant, Curran, and Fleet (2006), who conducted a study on faculty who were learning to teach online. Medical instructors who transitioned from a face-to-face teaching environment to an online teaching environment found that a lack of participation in the discussion area was most frustrating for the new online instructors (Lockyer et al, 2006). However, the

instructors "who had more small-group facilitation experience appeared better able to adapt their [face-to-face] approaches to online teaching" (Lockyer et al., 2006, p. 629). Thus, the interactions between participants in online classes are different from those in face-to-face classes. This study is important because it indicates that, as faculty transition from a face-to-face teaching environment to an online environment, they need to be prepared for new interactive strategies.

Another lens through which to consider differences in interactions is understanding the differences between two different disciplines that are both online. It is conceivable that different disciplines have their own culture of interactions, which perhaps shapes the interactions when teaching online. However, previous research by Hagedorn (2000) on faculty satisfaction determined that discipline was not a factor of satisfaction. Sabharwal and Corley (2009) also conducted a study on faculty satisfaction and examined discipline as a variable influencing faculty satisfaction. They also concluded that, overall, discipline is not a factor in faculty satisfaction. These studies are important because they suggest that, while faculty teach in different disciplines, satisfaction levels are influenced by variables other than discipline.

Access to Education

In addition to frustrations with a lack of face-to-face contact, faculty also report increased satisfaction in knowing they are reaching a student who would not otherwise be able to attend class. A study by Almeda and Rose (1999) surveyed faculty who taught entry-level writing and English courses. Among the results, faculty shared that writing courses were a good choice to deliver online and a way to reach more students. One

specific faculty response highlighted the benefit on online learning "because it reaches out to more students. Also, it makes the University more accessible." (Almeda & Rose, 1999, p. 188).

The use and implementation of online instruction can help increase student access to education. "This aspect may be important for community colleges since the vast majority of their students are nonresidential" (Akroyd et al., 2004, p. 45). A community college can use Internet delivery of courses to reach out to students and increase its reputation (Timmons, 2010). In addition, Timmons stated that students can access education while keeping other commitments, such as to family. While he indicated that a fully online experience cannot replace the face-to-face experience, online education is helping provide education to those who might not have been able to participate in classes otherwise, which may explain the dramatic increase in online offerings.

Rockwell et al. (1999) found that some faculty favorably consider the educational opportunity that online learning can have for students and have increased levels of satisfaction because of it. The study was conducted by interviewing administrators at one Midwest university regarding their perceptions of faculty concerns with teaching online and then used those responses to develop a survey distributed to faculty and administrators (Rockwell et al., 1999). The study identified incentives and obstacles and found that "Two of the nine incentives [for faculty to teach online] were related to the extending of the educational opportunity beyond the traditional walls of the institution. They were: 'Access to place-bound students' and 'Reduction of student travel time'" (Rockwell et al., 1999, p. 6). Table 2 displays the incentives and obstacles identified in the study.

Table 2. Incentives and Obstacles Teaching Online.

Incentives	Faculty response (%)	Neither Incentive nor Obstacle	Faculty response (%)	Obstacles	Faculty response (%)
Providing innovative instruction	83	Student costs	53	Time requirement	69
Applying new teaching techniques	83	Monetary awards	48	Assistance or support needs	65
Self-gratification	77			Time taken from research	61
Fulfilling personal desire to teach	75			Training requirements	56
Recognition of work	71			Developing effective technology skills	55
Access to place-bound students	67				
Reduction of student travel time	58				
Release time	57				
Peer Recognition	46				

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[6] From "Incentives and obstacles influencing higher education faculty and administrators to teach via distance," by Rockwell et al., 1999, p. 57. Copyright 1999 by the Online Journal of Distance Learning Administration. Reprinted with permission, see Appendix C.

The survey also tracked the rank of faculty and upon deeper analysis found a difference in opinion between tenured and non-tenured faculty regarding student access. "Non-tenured faculty saw a 'reduction of student travel time [to and from the college]'…as being more of an incentive than did tenured faculty. Faculty teaching only undergraduate courses also tended to see…more of an incentive than those teaching only graduate courses" (Rockwell et al., 1999, p. 6).

Time-related Factor

Even when faculty report they have had a positive experience, the time associated with teaching online continues to cause frustration. Almeda and Rose (1999) found that the majority of teachers stated that their dislikes with teaching online included "added instructional time required, students' expectations for fast responses, and compensation" (Almeda & Rose, 1999, p. 190). Rockwell et al.'s study (1999) on incentives and obstacles also found that "Four out of the five obstacles suggested that faculty tend to see distance education as a time demanding activity that requires new skill development" (p. 6).

Barnes, Agago, and Coombs (1998) investigated factors that would cause faculty members to leave academics. They found the two most important variables for predicting intent to leave were "Frustration due to time commitments and a lack of a sense of community at one's institution" (p. 466). Their research highlights the significance of frustrations over the time required to teach well in a traditional classroom. Therefore, a greater time commitment invested in teaching potentially results in faculty members' leaving academics.

When faculty begin their careers, they are generally enthusiastic and have a high level of satisfaction despite the lack of formal training in instruction (Sorcinelli, 1994). Even over a short period of time, this satisfaction begins to decrease. In a five-year longitudinal study of new faculty, Sorcinelli found the number of faculty members who reported feeling stressed rose "from 33% in year 1, to 49% in year 3, to 71% in year 5" (Sorcinelli, 1994, p. 474). Factors reported as most stressful included time constraints, insufficient resources, and a lack of balance between work and personal life. '"Not enough time to do my work' emerges as one of the major contributors to stress among new faculty who describe their semesters as fragmented by too many tasks and too little time to complete them" (Sorcinelli, 1994, p. 475). For many instructors, the first few experiences teaching online mimic the experience of being a new teacher in learning new skills and practices. Once again, the skill set and training required for teaching online further exacerbate frustrations already expressed by many faculty related to traditional teaching. The Sloan Consortium (Sloan-C) reported that, due to an increase in online coursework, faculty need training. They also report, "The most common training approaches for online faculty are internally run training courses (65%) and informal mentoring (59%)" (Moore, 2009, p. 3).

Items of faculty frustration with time when teaching online include workload, developing class resources, communicating with students regarding course expectations, engaging students with the course material, and compensation. These items of time are displayed in Table 3. The following section in the literature review suggests these items collectively are a factor of time that influences faculty satisfaction. However, to date, there is no published literature on the subject, nor has a factor of time been examined

along with the use of prepared curriculum materials. The research questions in this study attempt to perform this missing examination.

Table 3. Issues Representing the Time-related Factors.

Time-related factor
• Class Resources • Communication Activities • Student Interactions • Workload • Compensation

Class Resources

The resources used in the online class are electronic in nature, not hardcopy. The faculty member must create the class resources electronically and then upload them to the appropriate location inside the CMS. As a result of uncertainty regarding the use of different technologies, some faculty members struggle more to incorporate class resources online than they do in a face-to-face classroom (Bolliger & Wasilik, 2009).

Alternatively, faculty may spend too much time filling the CMS with ineffective content. Hirumi's (2003) "Get a Life: Six Tactics for Optimizing Time Spent Online," is a guide to help faculty members prepare effective courses. He noted that in the push to teach online, teachers are sacrificing quality for quantity by throwing material online without building an underlying framework. He stated, "The effects of poorly designed instruction may not be felt until later when learners are asked to build on skills and concepts that they may not have mastered" (p. 95). He asserted that not all teachers have the time or skill to build an online class themselves and are therefore wasting time and frustrating students (2003). Confused students can lead to faculty who become frustrated

because they have to spend more time clarifying concepts through individual emails or chat sessions with students.

Not learning how to teach with a course management system (CMS) is a major cause of the additional time required to prepare an online class. Fabry (2009, p. 254) noted, "Challenges in designing effective online courses include a lack of knowledge of the features and tools available in CMSs." In addition, learning the new tools and features takes time above and beyond the creation of the content, adding to the preparation time needed to develop an online class. Faculty also must be aware of the multiple ways students will interact with the CMS, which means planning for the various ways students will use and access the material, as seen in students' use and comfort level with multiple forms of communication within the online classroom (Spector, 2005). This often requires building a certain amount of redundancy into the class. Redundancy, learning the CMS, and preparing for students to access the class in multiple ways are considerations specific to online learning that increase the time required of the instructor to plan and construct the online class when compared to the time required to plan and facilitate the same class face-to-face.

Hartman, Dziuban, and Moskal (1999) confirmed that delivering more content online requires more time of the instructor. They studied and evaluated faculty use of and satisfaction with using a CMS to deliver online access to learning objects in three distinct electronic learning environments: Web-enhanced, Media-enhanced, and fully online (Hartman, Dziuban & Moskal, 1999). Web-enhanced courses were defined as fully face-to-face courses that used a CMS to help facilitate the class. Examples of use included maintaining an electronic grade book and downloading homework for the next class

period on a 24/7 basis. Media-enhanced courses still met face-to-face at certain points in time, but reduced the amount of seat time required by moving portions of the coursework to the online environment. A fully online course was one in which students could complete the entire course without ever meeting inside a physical campus classroom. The study revealed that instructors who taught using the CMS in any three of these modalities felt it took more work to administer than the same course taught in a face-to-face modality.

Communication Activities

The time required to complete all the communication activities in an online class is underestimated by some faculty. "The frequency of e-mail, quick responses to e-mail, and quality of messages are important functions sometimes overlooked by online instructors" (Roberson & Klotz, 2002, p. 3). Communication between instructor and students has been found to increase student performance and affect student satisfaction, both factors that also affect instructor satisfaction. Managing individual communications with students effectively in an online class also requires additional time because the nature of online classes means that students within the same class do not have to participate in the class at the same time (Hiltz & Goldman, 2005). Since there are no official daily class times, asynchronous online courses "require[s] adjustments on the part of students and teachers for successful interactions to occur" (Picciano, 2002, p. 21).

Spector (2005) examined the amount of time students and teachers spent on communication in three online classes. The classes used email, discussion threads, and synchronous chat sessions. Researchers evaluated logs from the CMSs together with

submitted weekly logs from both faculty and students regarding their time spent on tasks. The study revealed that "e-mail was not generally more time consuming for students" (Spector, 2005, p. 13). However, the faculty reported that using e-mail as a major class communication tool took more time. "Overall, e-mail does require more faculty time, however. In terms of efficiency, e-mail appears less efficient than either threaded discussions or chat sessions" (Spector, 2005, p. 16). While faculty may be comfortable with email, their hesitancy to rely on the other tools, such as discussion forums and chat rooms imbedded in the CMS, either because they were unfamiliar with them or had not been trained to use them effectively, inhibited their ability to communicate more efficiently with their students. As this suggests, solely relying on email, as is the case with an underdeveloped class (faculty preparation) or not utilizing the tools in a CMS (training), leads to additional time required of faculty to ensure successful communication is taking place.

Student Interactions

Teaching online often requires the instructor to relearn how to teach, even despite being an outstanding face-to-face instructor. Online faculty are finding themselves stretched to deliver an engaging online course experience. "The demand for online courses has increased so rapidly that it often has surpassed the expertise of faculty to anticipate the needs and psyche of online learners" (Stumpf et al., 2005, p. 360). Consequently, faculty report frustrations in developing online classes and seek instructional design support from the institution (Maguire, 2005; Rockwell et al., 1999; Sorcinelli, 1994).

Hartman et al. (2000) found that 94% of online faculty felt that the quality of online class interactions were better than face-to-face class interactions. One major adjustment for faculty when they move from the face-to-face classroom to the online classroom is interacting with students daily as opposed to one-to-three times a week (Hiltz & Goldman, 2005). However, faculty must be familiar with and willing to use all the tools available and use the tools sometimes on a daily basis to facilitate those interactions (Hiltz & Goldman, 2005). This involves a significant amount of discussion and a variety of forms of interaction (Picciano, 2002). As these studies suggest, teaching online requires faculty to budget time to create and manage these interactions.

Workload

Pressures to increase faculty workload have trended upward in the early 2000s (Schuster & Finkelstein, 2006). In addition to teaching more sections and increased class sizes, teaching online by itself is an increase in workload for faculty. This is reflected in both students' and faculty's stating that online classes require more time than traditional face-to-face classes (Boettcher, 2004; Bonk, 2001; Brown & Voltz, 2005; Distance Education, 2001; Rockwell et al., 1999; Schifter, 2000; Spector, 2005). In a survey of Pennsylvania State University's World Campus (virtual), the number one factor of discontent for faculty who taught online was a heavier teaching load (Distance Education, 2001). Faculty were displeased with the increase in the workload and attributed this increase to the online format of the classes.

Brown and Voltz (2005) concluded that, consistent with faculty perceptions, developing online courses is time consuming. According to Beottcher (2004), at the

University of Wisconsin, faculty developing an online master's course are given 1.2 months of preparation time and 1.8 months to pilot the new course to students. "When first-time faculty deliver an online course, it is the only course they teach that semester" (Boettcher, 2004, n.p.). The approach taken by Wisconsin indicates the effort it takes to develop and pilot an online class.

Because online classes must be fully prepared and constructed before the student enters the online classroom, or at the very least, the current module in the class, there is no room for "winging it" or "ad-libbing" as one can do in a face-to-face classroom. Consequently, instructors must expend the extra time to complete the design and construction of an online class before the course actually begins or the next module opens. According Boettcher (2004), faculty new to teaching online can plan on spending 18 hours of preparation and work for every hour of online instruction. Assuming a traditional three-credit semester class meets for 45 hours a term, a new online instructor can plan on spending 810 hours (45 instruction hours x 18 hours) for every online class. Moore reported even higher ranges of 50:1 to 300:1 ratios in hours between design time and student contact time (2000). However, an institution whose mission is to support online education and faculty can reduce the amount of work a faculty member contributes to the preparation of an online class by supporting and encouraging the use of prepared curriculum materials (Moore, 2000). Boettcher also stated that the availability of premade resources can cut the development time for experienced faculty down to ten hours of development time per each hour of teaching (Boettcher, 2004).

Reese and Johnson (1998) examined teacher satisfaction through the lens of school size. Their study focused on faculty who taught at urban secondary schools in the

southeast United States. Overall, they found that larger schools had a lower rate of faculty satisfaction. Interestingly, they concluded that student population sizes smaller than 1,500 students did not affect faculty satisfaction, while there were significant differences in faculty satisfaction when the student population reached 1,501, and there was another significant change in faculty satisfaction when the student population reached 2,001. This study suggests an inverse relationship between the number of students on campus and faculty satisfaction levels.

Compensation

Given that online teaching requires more time to prepare and more facilitation time to achieve the same results, it is not surprising faculty have concerns regarding compensation for teaching online, although these vary from institution to institution. Compensation is often controversial, and even more so when discussing teaching online. Some institutions consider teaching online equivalent to teaching face-to-face, and consequently, there is no adjustment in compensation when teaching in different modalities. However, as previously stated, the preparation time is significantly higher when teaching online, and some institutions do adjust compensation for faculty who teach online. The Rockwell et al. (1999) study revealed that faculty who teach only undergraduate courses online saw increased compensation as an incentive. Since community colleges deliver the majority of online courses (Allen & Seaman, 2007), compensation may be more of a concern for this population.

Bonk (2001) found a different response from faculty. In Bonk's study, faculty were asked their opinion on appropriate compensation for teaching online. The highest

response was an increase in salary, which was cited by 33% of the respondents (Bonk, 2001). Interestingly, the next highest response, at 20%, was that there should not be additional compensation. However, across all respondents, 63% reported that some sort of additional compensation, either as stipends, royalties, and/or increased salaries, was appropriate (Bonk, 2001). Figure 9 shows the responses from faculty with regard to compensation teaching online.

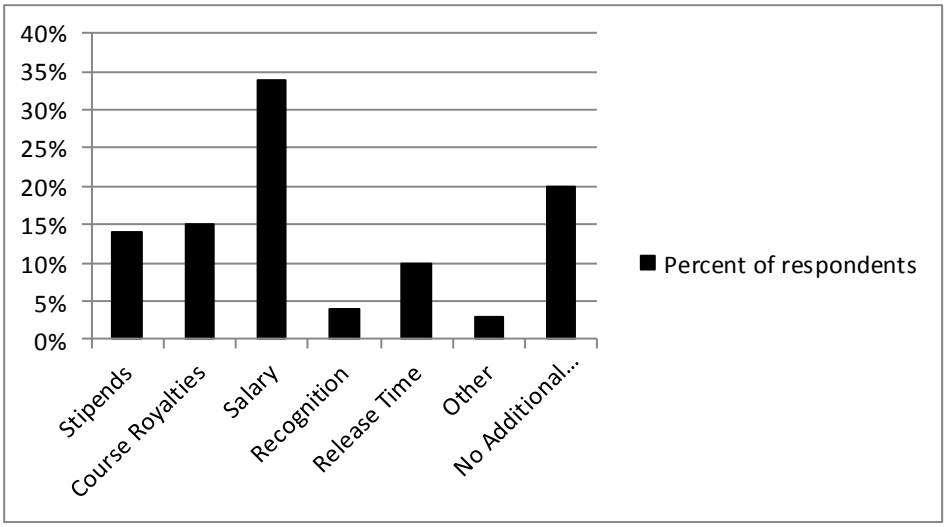

Figure 9. Faculty Suggestions for Compensation. Reprinted with Permission. Source: Bonk, 2001, p. 35.[7]

Terpstra and Honoree (2004) examined university faculty job satisfaction and compensation. Their survey included 490 faculty from 135 institutions across the United States. Overall, they reported that faculty were generally satisfied with their jobs, but were less satisfied with their compensation. Statistically, they did not find any individual-level variables affecting satisfaction, such as age and seniority. However, they

[7] From "Online teaching in an online world," by C. J. Bonk, 2001, p. 35. Copyright 2001 by CourseShare.com. Reprinted with permission, see Appendix D.

did find that faculty who worked at universities with high overall salary levels also had faculty more likely to be satisfied with their pay and their job overall.

Unfortunately, the literature does not provide a clear picture regarding faculty's attitudes on compensation when teaching online. This unclear picture calls for additional research in this area.

Prepared Curriculum Materials

Online coursework has grown and is projected to continue to grow, becoming a major delivery mechanism for colleges, and while much of what contributes to faculty satisfaction has been studied, to date there has not been a significant study that examines the impact that prepared curriculum materials have on faculty satisfaction. Schifter (2000) stated that teaching in this era of asynchronous learning is different from teaching face-to-face, and consequently requires faculty to learn new skills. Gibson, Harris, and Colaric (2008) identified the shift to online teaching as an organizational change and subject to faculty's fear of the unknown. These fears, or other inhibiting concerns by faculty, should be understood and addressed to allow faculty to overcome barriers to teaching online (Schifter, 2000).

After a multi-year exhaustive search of articles in ERIC, EBSCO, ProQuest, JSTOR, and other databases, I found no research that addresses faculty satisfaction when teaching online with prepared curriculum materials. This emphasizes the need for this study, as online coursework is growing and is projected to continue to grow. The following section in the literature review suggests that using prepared curriculum materials influences faculty satisfaction. The research questions in this study are

designed to understand the influence of prepared curriculum materials on faculty satisfaction.

In the Boettcher article cited earlier, teaching an online course for the first time could take faculty 18 hours of preparation for each hour of teaching. However, she concluded that, based on increasing campus resources including the "availability of digital content such as course cartridges, online cyber problems, and test banks, a recommended planning number today for experienced faculty is 10 hours per hour of instruction" (Boettcher, 2004, n.p.). Faculty use of these prepared materials, such as interactive labs or test banks, could reduce the amount of preparation time for online classes. In theory, the use of prepared curriculum materials should increase faculty satisfaction because it lessens the two major frustrations of teaching online: increased preparation time and technological issues.

Many college textbook publishers are already supplying prepared curriculum materials, and "adapting a textbook for a course that has extensive online content for faculty and students saves design and development time" (Boettcher, 2004, n.p.). Online class material from textbook publishers can be uploaded and used to supplement an existing class or facilitate the entire class. In an article regarding teaching online, Miller stated that in getting started teaching online, "use online course software or CDs that are provided to you by book publishers" (Miller, 2011, n.p.). Additional advantages of using entire or partial curricular components created by a third party are efficiency, pedagogical soundness, and incorporation of technical elements that surpass the expertise of the instructor.

Prepared curriculum materials can also be developed in-house with the instructor's working with an instructional designer employed by the college. The teacher can work with the designer to identify class modules and activities. The instructional designer then creates the online class for the teacher. This technological support for faculty has been shown to be beneficial (Phillips, Wells, Ice, Curtis, & Kennedy, 2007).

The personal computer and Internet allow students not only to send emails and type papers for their professors, but also to access a new level of power. The once-regarded "vault of information" contained within the walls of a library can now be quickly searched from a dorm or kitchen counter (Edutech, 2006). The personal computer and the Internet have leveled the barriers to information, and this technology makes asynchronous learning possible. Student capabilities to shift time and participate in a class asynchronously are forcing teachers to think differently about coursework. Education is no longer a simple transmission of information from teacher to student. Rather, it is evolving into a continuous interaction, dialogue, and negotiation between students and faculty. This "changing balance of power" between student and instructor is a new concept in education. As such, "Technologies are often the starting points for changes unforeseen by their makers" (Edutech, 2006, p. 7). Consequently, great care must be used when constructing an online class. Teachers of online classes need to understand this shift in balance and prepared curriculum materials could help give them the foundation to structure classes appropriately. As a result, prepared curriculum materials assembled by professional designers should reduce faculty frustrations with time and technology.

Chapter Summary

Understanding faculty satisfaction when teaching online is important because of the changing work environment for community college faculty. The literature presented in this chapter discussed faculty satisfaction and was divided into four sections. The first section reviewed the context of online course delivery and showed that community colleges are providing the vast majority of online coursework. The next section presented the foundational study by Bolliger and Wasilik (2009) that examined faculty satisfaction specifically for online instructors. Their study organized the data into three factors of Student-related, Instructor-related or Institution-related items. The third section presented literature regarding faculty satisfaction and newly identified factors of technology and time. The fourth section presented literature that discussed prepared curriculum materials and their growing role in online education. Prepared curriculum materials, which may have a positive impact on faculty satisfaction, need to be studied to understand this new workplace environment. Chapter 3, Study Methods, discusses the survey instrument, the pilot study, and the logistic regression models used in this study.

CHAPTER III

STUDY METHODS

Introduction

This study examines the influence that prepared curriculum materials have on community college faculty satisfaction. Community colleges are offering more online courses, and the impact on faculty satisfaction of this delivery modality needs to be further understood. The use of prepared curriculum materials, which has not been previously studied, is the specific variable of interest and represents the scholarly contribution of this study because it could influence faculty satisfaction when job responsibilities include teaching online.

This chapter presents the study methods and is divided into five main parts. The first section discusses the development of a survey instrument that builds upon a prior study's instrument. The second section discusses my pilot study, after having modified the previously established instrument. Third, the study's sample, data collection procedures, and statistical analyses are explained. The fourth section presents the statistical assumptions used in this study. The final section discusses the logistic regression models used to answer the research questions.

Instrument

Foundational Study

The instrument used in this study is based on the Online Faculty Satisfaction Survey (OFSS) developed by Bolliger and Wasilik (2009). Professor Bolliger granted permission to use and modify the OFSS for this study (see Appendix E).

The OFSS contained 28 multiple-choice items with a four-point Likert scale response: *Strongly Agree*, *Agree*, *Disagree*, and *Strongly Disagree*. Following the multiple-choice items were four open-ended questions that asked participants to describe what they found frustrating and what they liked most about teaching online. Finally, four items asked demographic information. This resulted in a total of 36 items in the OFSS instrument.

Bolliger and Wasilik (2009) organized each of the 28 Likert-scale items in the OFSS into a Student-related, Instructor-related, or Institutional-related factor. Each of these factors represented significant efforts that the authors initially identified in the literature as affecting faculty satisfaction, which was discussed in Chapter 2.

After the OFSS was developed, Bolliger and Wasilik (2009) tested the instrument. Their survey instrument was first examined by a "content and psychometric expert, who suggested several modifications that were implemented" (Bollinger & Wasilik, 2009, p. 109). Next, the instrument was posted inside a university's course management system (CMS) and distributed to a pilot study group. After the pilot study, a small modification was made to one item. Following the pilot study, Bolliger and Wasilik (2009) distributed the OFSS to the target population and collected data. To analyze the data, factor analysis

examinations were performed on the data, and they determined that of the three factors, the Student-related factor influenced faculty satisfaction the most. They reported that statistical assumptions and estimations of the study were met and valid, supporting construct validity. They also reported the results as reliable, with an overall calculated Cronbach's alpha coefficient of 0.85 (Bolliger & Wasilik, 2009). However, the results are less reliable for supporting their three factors. Bolliger and Wasilik reported Cronbach's alpha coefficient for the Student-related factor as 0.86, the Instructor-related factor as 0.55, and the Institution-related factor as 0.55. This suggests that the Student-related factor might be a usable model to explain faculty satisfaction. However, the use of an Instructor-related factor or an Institution-related factor is questionable. Table 4 displays the 28 Likert scale items in the OFSS and their organization into Bolliger and Wasilik's three factors.

Table 4. OFSS Factors and Items from Bolliger and Wasilik (2009).

Student-related factor
Q1 The level of my interactions with students in the online course is higher than in a traditional face-to-face class.
Q2 The flexibility provided by the online environment is important to me.
Q3 My online students are actively involved in their learning.
Q7 I miss face-to face contact with students when teaching online.
Q10 My students are very active in communicating with me regarding online course matters.
Q11 I appreciate that I can access my online course any time it is convenient to me.
Q12 My online students are more enthusiastic about their learning than their traditional counterparts.
Q16 I am satisfied with the user of communications tools in the online environment.
Q17 I am able to provide better feedback to my online students on their performance in the course.
Q19 My online students are somewhat passive when it comes to contacting the instructor regarding course related matters.
Q20 It is valuable to me that my students can access my online course from any place in the world.
Q21 The participation level of my students in the class discussions in the online setting is lower than in the traditional one.
Q25 Not meeting my online students face-to-face prevents me from knowing them as well as my on-site students.
Q27 Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses.
Q28 It is more difficult for me to motivate my students in online environment than in the traditional setting.
Instructor-related factor
Q4 I incorporate fewer resources when teaching an online course as compared to traditional teaching.
Q5 The technology I use for online teaching is reliable.
Q8 I do not have any problems controlling my students in the online environment.
Q13 I have to be more creative in terms of the resources used for the online course.
Q14 Online teaching is often frustrating because of technical problems.
Q22 My students use a wider range of resources in the online setting than in the traditional one.
Q23 Technical problems do not discourage me from teaching online.
Institution-related factor
Q6 I have a higher workload when teaching an online course as compared to the traditional one.
Q15 It takes me longer to prepare for an online course on a weekly basis than for a face-to-face course.
Q24 I receive fair compensation for online teaching.
Q26 I am concerned about receiving lower course evaluations in the online course as compared to the traditional one.

Reorganization of Items into New Factors

Bolliger and Wasilik (2009) organized items in their instrument into Student-related, Instructor-related, and Institution-related factors. However, the literature review presented in Chapter 2 suggests that faculty satisfaction may also be influenced by factors of technology and time. The foundational instrument created by Bolliger and Wasilik (2009) already includes items that represent factors of technology and time. However, the influence of these specific items on faculty satisfaction cannot be examined because they are scattered across Bolliger and Wasilik's three factors and are mixed with non-technology and non-time items. To examine if a Technology-related factor and/or a Time-related factor influence faculty satisfaction, I simply reorganized the existing items from the instrument based on the information presented in Chapter 2. The items that represent the new hypothesized Technology-related and Time-related factors in this study are presented in Table 5.

To summarize, this study used one instrument originally created by Bolliger and Wasilik (2009) that contained 28 items relating to faculty satisfaction. This study organized the 28 items into factors of student, instructor, and institution to perform one regression test. Then the same 28 items from the instrument were reorganized into factors of technology and time to perform three different logistic regression tests. Thus, I replicated Bolliger and Wasilik's framework of faculty satisfaction, and then I examined my proposed frameworks of faculty satisfaction by factors of technology and time. The organization of the instrument items in relation to these five factors are presented in Table 6.

Table 5. Technology-related and Time-related Factors and Items

Technology-related factor
Q1 The level of my interactions with students in the online course is higher than in a traditional face-to-face class. Q2 The flexibility provided by the online environment is important to me. Q3 My online students are actively involved in their learning. Q5 The technology I use for online teaching is reliable. Q14 Online teaching is often frustrating because of technical problems. Q16 I am satisfied with the use of communication tools in the online environment. Q20 It is valuable to me that my students can access my online course from any place in the world. Q23 Technical problems do not discourage me from teaching online. Q27 Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses.
Time-related factor
Q4 I incorporate fewer resources when teaching an online course as compared to traditional teaching. Q6 I have a higher workload when teaching an online course as compared to the traditional one. Q10 My students are very active in communicating with me regarding online course matters. Q11 I appreciate that I can access my online course any time it is convenient to me. Q15 It takes me longer to prepare for an online course on a weekly basis than for a face-to-face course. Q21 The participation level of my students in the class discussions in the online setting is lower than in the traditional one. Q24 I receive fair compensation for online teaching.

Table 6. The Five Faculty Satisfaction Factors and Item Numbers.

	Student-related	Instructor-related	Institution-related
Technology-related	1, 2, 3, 16, 20, 27	5, 14, 23	
Time-related	10, 11, 21	4	6, 15, 24
N/A	7, 12, 17, 19, 25, 28	8, 13, 22	26

Note: The numbers in the table above refer to the item number on the instrument, which can be seen in Appendix F. The instrument and items are from Bolliger and Wasilik (2009).

Instrument Modifications

The OFSS was an instrument to examine faculty satisfaction specifically teaching online. However, the instrument did not contain items related to prepared curriculum materials, which is the focus of this current study. I added items related to prepared curriculum materials to the instrument and made some minor changes. In summary, this study modified the instrument by deleting two items irrelevant to my research and then adding six items. These modifications were necessary in order to make the instrument more appropriate for the current study. However, it should be noted that, in my instrument, items were either added or deleted to the original instrument in whole. The items used from the foundational study were not reworded or modified in my instrument, thus maintaining the integrity of the original items. The instrument was hence organized into three sections: faculty satisfaction items, prepared curriculum items, and demographic items.

Faculty Satisfaction Items

The OFSS contained 28 Likert scale items relating to faculty satisfaction. The only modification I made to this section of the instrument was to add one question, which serves as the dependent variable (DV) and is the variable of focus for this study. This question directly asked the participants if they were satisfied teaching online, and presented a fixed binomial response of "Yes" or "No." This question needed to be added to the instrument in order to use a logistic regression model and predict faculty satisfaction. "Logistic regression is basically an extension of multiple regression in situations where the DV is not a continuous or quantitative variable…In other words, the

DV is categorical (or discrete) and may have as few as two values" (Mertler & Vannatta, 2005, p. 313). By using a logistic regression model, I can predict the value of the dependent variable based on the regression of several explanatory or independent variables. Normally, the results of the logistic regression are stated in odds, or the likelihood that a predictive value can be reached based on the value of independent variables (Ramsey & Schafer, 1997). Therefore, the dependent variable of faculty satisfaction can be estimated by evaluating the computational effects of the independent variables.

Prepared Curriculum Items

I added two items to the instrument to gather data regarding prepared curriculum materials. The first item asked the participant to identify the type of prepared curriculum material they used. The instrument presented the participants with a list of ten options, and they were free to indicate as many or as few options as applied to them. Table 7 displays the choices of the types of prepared curriculum materials from which the participants could choose. This item was an important question to add to the instrument because it collected valuable information about prepared curriculum materials.

The second prepared curriculum materials item added to the instrument asked the participants to identify the source of prepared curriculum materials they use. The instrument presented the participants with a list of seven options, and they were free to indicate as many or as few options as applied to them. Table 8 displays the choices of the sources of prepared curriculum materials from which the participants could choose. This

item was important to add to the instrument because it collected valuable information about the origin of prepared curriculum materials.

Table 7. Types of Prepared Curriculum Material.

• Quizzes/test banks • Slides/presentations • Interactive labs • Reading assignments • Handouts • Homework • Graphics/images • Tables/diagrams • Other • I don't use prepared curriculum materials.

Table 8. Sources of Prepared Curriculum Materials.

• Book publisher • Product manufacturer • Online community • College's instructional design department • Random Internet searches • Other • I don't use prepared curriculum materials.

Demographic Items

The first modification to this section of the instrument was to delete OFSS items numbered 32 and 33. These were open-ended questions that are not pertinent to this study. Item 32 asked specifically about an outreach school, which might have been important at the university Bolliger and Wasilik studied, but it was not applicable to the

colleges in this current study. Item 33 was deleted because it was deemed to be unnecessary.

I added a demographic question inquiring about the participant's employment status. This question asks the faculty member to indicate his or her employment status as "Full-time" or "Part-time/Adjunct." Truell et al. (1998) found significant differences in job satisfaction between full-time and part-time faculty. This item of employment was added to the instrument to gather data that might better account for differences in perspectives by employment.

I also added a question to capture information on the subject matter that the participants teach. The question asked the participants to indicate the discipline in which they teach. Hagedorn (2000) used discipline as part of her study on faculty satisfaction, but it did not evolve into being a predictor of satisfaction. Sabharwal and Corley (2009) also examined discipline as a variable of faculty satisfaction but did not find a clear relationship between discipline and satisfaction. They did, however, find it a useful variable to explain their results. This item of discipline was added to the instrument to gather data that might better account for differences in perspectives by discipline.

I added two more questions to gather data regarding faculty workload. One question asked the participant to identify a range of credits they teach during a typical year. The instrument presented a series of four drop-down boxes for faculty to indicate the number of credits they teach in the modalities of face-to-face, online, hybrid/blended, or other. The other workload question asked the participant to identify the range of students they teach during a typical year. Again, the instrument presented a series of four drop-down boxes for faculty to indicate the number of students they teach in the

modalities of face-to-face, online, hybrid/blended, or other. These items were included to obtain a better sense of workload and participation levels teaching online.

Overall, my survey instrument did not significantly change the OFSS developed by Bollinger and Wasilik (2009). Any modification made to the survey instrument was either to add or delete items wholly, thus preserving the integrity of the original instrument. Table 9 summarizes the modifications to the instrument.

Table 9. Summary of Modifications to the Instrument.

Question	Action
Do you have any suggestions as to how the Outreach School could better support your online teaching?	Removed
Is there anything else you wish to share?	Removed
Are you satisfied teaching online?	Added
What is your employment status?	Added
What is your discipline?	Added
Select a range of credits you teach in a typical year	Added
Select a range of students you teach in a typical year	Added
Indicate the type(s) of prepared curriculum you use when you teach online.	Added
Indicate the source(s) of the prepared curriculum you use.	Added

Pilot Study

I conducted a pilot study to verify that the questions were clear and to ensure that the instrument was valid and reliable. The pilot study was subject to approval by the

University of North Dakota's Institutional Review Board (IRB). I completed a Human Subjects Review Form, describing the scope and scale of this research project. IRB approval was granted on November 10, 2011, as project number IRB-201111-104, which can be seen in Appendix G.

I contacted an administrator at a community college in the Midwest and inquired about conducting a pilot study on faculty satisfaction with the faculty at college. The administrator approved my request, and the instrument was distributed to 44 faculty at this community college.

After two weeks of data collection, there were 18 respondents, yielding a 40.9% response rate. The gender of the pilot study respondents was largely female at 61.1%, males 33.3%, and one respondent who preferred not to identify gender, 5.6%. All of the respondents spoke English as their primary language. Fourteen respondents identified themselves as full-time faculty (77.8%) and four respondents identified themselves as part-time/adjunct faculty (22.2%). The average age of the sample was 45.7 years old (range of 30-60 years), with an average of 4.9 years of online teaching experience (range 1-13 years).

I attempted to calculate Cronbach's alpha coefficient on the dataset to determine if the instrument used in the pilot study were reliable. However, because the pilot study included only 18 respondents and 29 calculable questions, the Cronbach's alpha coefficient was 0.43, suggesting the instrument was not reliable. Nunnally and Bernstein (1994) stated that a coefficient score of 0.70 or higher is acceptable for a standardized score. This level of 0.70 is used to establish a common reliability threshold for quantitative analysis. In this situation, the low coefficient score might not indicate the

instrument was unreliable, but rather that there were more questions than participants. Since Bolliger and Wasilik (2009) determined the instrument to be reliable with an alpha score of 0.85, I focused on determining the reliability of the only question I had added to the faculty satisfaction section of the instrument: "Are you satisfied teaching online?" (Item 29) This item is closely related to two questions in the original OFSS that measured general satisfaction. The other two general satisfaction questions are, "I look forward to teaching my next online course," (item 9) and, "I am more satisfied with teaching online as compared to other delivery methods" (item 18). These three items measure faculty satisfaction, and two of the items were in the original instrument, which was determined to be reliable. Cronbach's alpha coefficient was recalculated using these three questions and computed to be 0.76. This figure suggests the instrument is reliable according to Nunnally and Bernstein's standard (1994).

Convergent validity was completed by using the three questions above and generating a Pearson coefficient matrix. It was assumed that faculty who responded positively to "Are you satisfied teaching online?" (Item 29) would also respond positively to "I look forward to teaching my next online course" (item 9) and "I am more satisfied with teaching online as compared to other delivery methods" (item 18). I generated a Pearson coefficient matrix and found a high correlation among all three questions. Thus, my output confirms convergent validity. Table 10 shows the items, their correlation to each other, and the corresponding statistical significance of the correlation.

Table 10. Pilot Study Validity.

	Item 9	Item 18	Item 29
Item 9	1.00000	0.52167 0.0264	0.63330 0.0048
Item 18	0.52167 0.0264	1.00000	0.40581 0.0947
Item 29	0.63330 0.0048	0.40581 0.0947	1.00000

I documented the results and completed an IRB termination form for this pilot study. Prior to meeting with my dissertation committee to discuss the results of the pilot study, I applied for IRB approval to distribute my instrument to faculty at seven colleges. IRB granted approval on February 2, 2012 as project number IRB-201201-233, which can be seen in Appendix H. I then met with my dissertation committee, and a question of workload measurement was discussed. The instrument used in the pilot study only contained one workload question, which asked the participants to identify the number of classes they taught in a typical year. Upon committee recommendation, this item was reworded from "classes" to "credits" to reflect a more common measure of faculty workload. In addition, the pilot study instrument was modified to include an item of "number of students taught." These items are explanatory variables, and hence did not change the reliability or validity of the instrument. These modifications were documented in a Protocol Change Form and submitted to the University of North Dakota's Institutional Review Board for approval. Permission was granted by the IRB on March 7, 2012 for the instrument modifications which can be seen in Appendix I. Then I accordingly modified the instrument and prepared to distribute the instrument broadly.

Procedures

For purposes of this study, the relevant population is community college faculty who teach online. To identify this population of faculty members, I made an assumption that any faculty member who teaches some form of an online class uses a CMS. With this assumption, I sought to generate my sample by contacting the CMS administrator of an entire college system with the purpose of gaining access to the email addresses of faculty who use the college system's CMS. In this college system's model, the CMS is centrally administered with CMS liaisons on each campus. On my behalf, the central CMS administrator asked CMS liaisons at several colleges in the system if they would be willing to participate in this study. Through follow-up email conversations, CMS liaisons from seven colleges agreed to participate.

I created the survey instrument at the commercial website Survey Monkey. The Survey Monkey service has the capability of hosting one instrument linking to multiple collection devices. I created seven different collection devices to correspond to the seven colleges in this study. Each collection device had its own unique web hyperlink, which I associated to the respective colleges.

I composed and sent an invitation letter via email to the seven campus CMS liaisons, and then the CMS liaison forwarded the invitation letter to the faculty who teach online. This process aligned with system policies, individual college policies, and professional protocols. The invitation letter described my study and asked faculty for their voluntarily participation. The invitation letter also included the college-specific hyperlink to the survey instrument, which allowed for the responses from faculty members to be isolated by their specific college. The invitation letter also stated that the

survey should take approximately 15-20 minutes to complete and that their individual responses would remain anonymous. After approximately two weeks, I sent a reminder email to each CMS liaison asking them to forward the reminder email to faculty.

After the data collection period, I downloaded the dataset, completed data cleansing procedures, and examined the dataset through several statistical analyses. All of these steps are described in greater detail later in this chapter. The results of the descriptive statistical analysis and the results of the inferential statistical analysis are presented in Chapter 4.

Profile of Settings

The target population for this study was faculty members who teach online at a community college. This survey was administered to faculty at seven community colleges in the Midwest. All seven colleges are part of the same state-wide public system, have similar mission statements, have similar student profiles, and are part of the same community college system as the pilot study college. Each college uses the same course management system (CMS), and, because the system has a collective bargaining unit, all faculty definitions and teaching loads are universal across the colleges. I classified the colleges as "metropolitan" or "rural" based upon the federal Office of Management and Budget definition of a metropolitan statistical area. This classification includes a metropolitan area of having a population of 50,000 residents or more (Office of Management and Budget, 2012, p. 37,250). A brief profile of the seven colleges is presented in Table 11. The order in which the colleges appear in the table was

determined by the order in which final arrangements were made between the college and me to conduct the research on their campus.

Table 11. College Characteristics.

College	Geographic setting	Approximate student population	Approximate faculty headcount (FT and PT/adjunct)
A	Rural	3,000	210
B	Metropolitan	11,000	410
C	Metropolitan	9,500	320
D	Rural	4,500	180
E	Rural	1,700	90
F	Metropolitan	6,500	300
G	Metropolitan	10,500	360

Source: National Center for Education Statistics (IPEDS) (2012).[8]

Data Cleansing and Preparation

The data from each college were downloaded after the collection period resulting in seven separate datasets. Each dataset was then opened, and I inserted a unique tracking code into each record. Simply, the seven codes were "A", "B", "C", "D", "E", "F," and "G." Then I merged the seven datasets into one large dataset.

Textual responses in the dataset were then recoded as numerical values. The first 28 items had a Likert-scale response. Responses to these questions were recoded according to the system shown in Table 12.

[8] National Center for Education Statistics (IPEDS) (2012). Data are reported for Fall 2010. Numbers are rounded to protect the identity of the institution.

Table 12. Likert Scale Items Coded Values.

Response	Coded value
Strongly Agree	4
Agree	3
Disagree	2
Strongly Disagree	1
N/A	0

Next, the dependent variable, "Are you satisfied teaching online?" had two available responses of "Yes" or "No." Participant responses were recoded into the values shown in Table 13.

Table 13. Dependent Variable Coded Values.

Response	Coded value
Yes	1
No	0

Textual responses indicating gender were recoded according to the values seen in Table 14.

Table 14. Gender Coded Values.

Gender	Coded value
Prefer not to answer/unknown	0
Male	1
Female	2

Textual responses indicating if the subject's native language were English were recoded according to the values seen in Table 15.

Table 15. Native Language Coded Values.

English as a Native Language	Coded value
Prefer not to answer/unknown	0
Yes	1
No	2

Textual responses indicating employment status were recoded according to the values seen in Table 16.

Table 16. Employment Status Coded Values.

Employment Status	Coded value
Prefer not to answer/unknown	0
FT	1
PT/Adjunct	2

Finally, the textual responses indicating the subject's discipline were coded according to values seen in Table 17.

Table 17. Academic Discipline Coded Values.

Discipline	Coded value
Social Sciences	1
Business-related	2
Health and Nursing	3
Natural Sciences	4
Communications and Languages	5
Computers and Technology	6
Fine Arts	7
Unknown/No response	9

Statistical Assumptions

I used the help of a private statistical consultant to ensure that statistical tests were completed using conventional methods. The consultant had no relationship with the University of North Dakota or any of the colleges in this study.

Sample Size and Missing Data

The original dataset used in this study contained a total of 154 records. However, not all of the records were useful in this study, and some were deleted to prepare the dataset for statistical analysis. Thirteen records were deleted because no items were answered. Four records were deleted because the participant did not answer the item that was used as the dependent variable. Two records were removed from the dataset because the participants did not agree to the Informed Consent.

I then focused on missing data in individual records. In the dataset, seven participants did not answer one item, and one participant did not answer two items. The empty values in these nine items were replaced with mean substitution for the item. The practice of using mean substitution is currently debated among scholars (Hawthorne & Elliot, 2005; Schlomer, Bauman, & Card, 2010). However, I choose to use mean substitution so I could duplicate the methods used by Bolliger and Wasilik as closely as possible for comparison purposes.

All of the merging and data cleansing resulted in 135 useful records in this dataset. I then created backup copies of both the original datasets and the cleansed dataset and stored them in a safe, secure location.

Outliers

The dataset was examined with scatter plots to see if there were any obvious outliers. None existed, and all the data were retained.

Multicollinearity and Singularity

A Pearson correlation coefficients matrix was generated and examined to check for multicollinearity. The examination revealed the three highest correlated questions were questions 2 and 10 (0.51), 6 and 15 (0.50), and 11 and 20 (0.50). This procedure shows there is not a high correlation between the questions indicating that multicollinearity does not exist between the independent variables. Thus, each independent variable is an independent measure. The Pearson correlation matrix can be seen in Appendix J.

Factor Analysis

An exploratory factor analysis examination was completed on the dataset. Factor analysis is a method used to reduce a large number of variables into a few factors that explain a large portion of the variability. Questions 9 and 18 are general satisfaction items and do not fit into any factor identified in this study, so they were eliminated from the factor analysis examination.

Next, an eigenvector matrix was outputted from the factor analysis. This matrix identifies the instrument items and their eigenvalue in each of the Principal Component Factors (PCF). The Eigenvector Matrix is displayed in Appendix K.

The final step in the factor analysis was to generate and examine an Eigenvalues of Correlation Matrix and a scree plot. The results of these procedures will be discussed in detail in Chapter 4.

Reliability

Reliability of the instrument was calculated using Cronbach's alpha coefficient. The total scale included 28 items, which resulted in an overall reliability of 0.73. According to Nunnally and Bernstein (1994), an alpha score higher than 0.70 indicates the instrument is reliable. Therefore, the reliability of the instrument was demonstrated.

Model Assumption Diagnostic and Model Fitting

The overarching research question for this study, as stated in Chapter 1, is: *Do prepared curriculum materials influence community college faculty satisfaction when teaching online?* This overarching question was explored through four sub-questions that were examined using several logistic regression models. Logistic regression shows the relationship between a dichotomous variable and a set of explanatory variables (Ramsey & Schafer, 1997). The results are interpreted as odds, such as, given a certain collection of variables, what are the odds that this occurs? Accordingly, logistic regression "best predicts membership in a particular group" (Mertler & Vannatta, 2005, p. 313). For the purposes of this study, I am seeking the "membership" of those who are satisfied teaching online using prepared curriculum materials and searching for the explanatory variables that might predict why the faculty member identifies with being satisfied. The dependent variable, "Are you satisfied teaching online?" has only two possible responses

of "Yes" and "No." This dependent variable was examined along with the use of prepared curriculum materials and one or more previously discussed factors in a logistic regression model. The formula for the likelihood of logistic regression used in this study is:

$$L = \Pr(Y = y|X) = \frac{e^{B_0+B_1X_1+ B_2X_2+\ldots+B_kX_k}}{1 + e^{B_0+B_1X_1+ B_2X_2+\ldots+B_kX_k}}$$

Test #1: Examination of the Student, Instructor, and Institution-related Factors

Bolliger and Wasilik (2009) identified three factors that influence faculty satisfaction when teaching online, and the most influential of the three is the Student-related factor. However, their study did not include the use of prepared curriculum materials. To determine if prepared curriculum material affect faculty satisfaction, a logistic regression model was created to examine prepared curriculum materials using Bolliger and Wasilik's framework. Thus, the first test in this study was designed to answer Research Question 1: *To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of Bolliger and Wasilik's Student-related, Instructor-related and Institution-related factors?* The results of this test are described in detail in Chapter 4. Figure 10 visually depicts the logistic regression model used in Test #1, which was originally presented in Chapter 1.

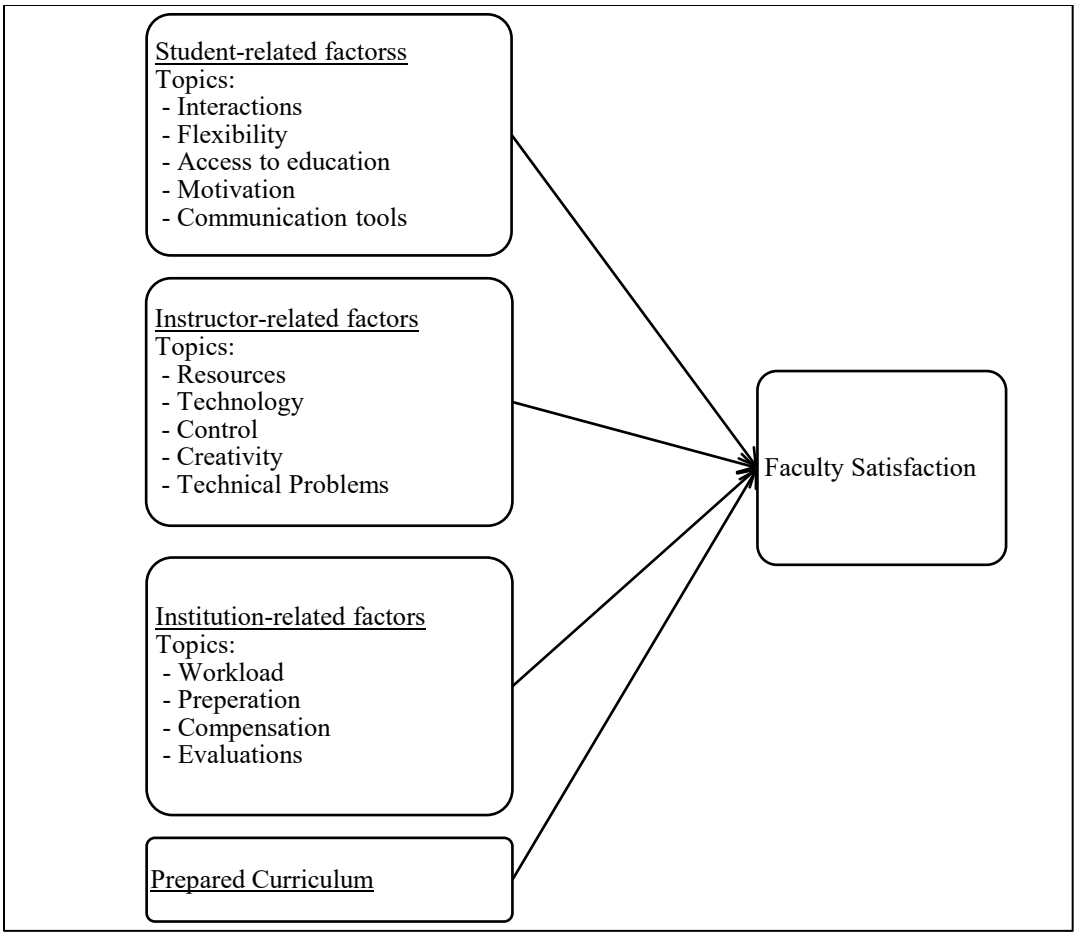

Figure 10. Logistic Regression Model Used in Test #1.

Test #2: Examination of the Technology-related Factor

The literature review presented in Chapter 2 suggests evidence that technology is a factor that affects faculty satisfaction when teaching online. An exploratory factor analysis examination was completed regarding technology. To understand the effect technology has upon faculty satisfaction with the use of prepared curriculum materials, two logistic regression models were fit to the dataset. The second test in this study was designed to answer Research Question 2: *To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of the Technology-related factor?* The results of this test are

discussed in detail in Chapter 4. Figure 11 visually depicts the logistic regression model used in Test #2, which was originally presented in Chapter 1.

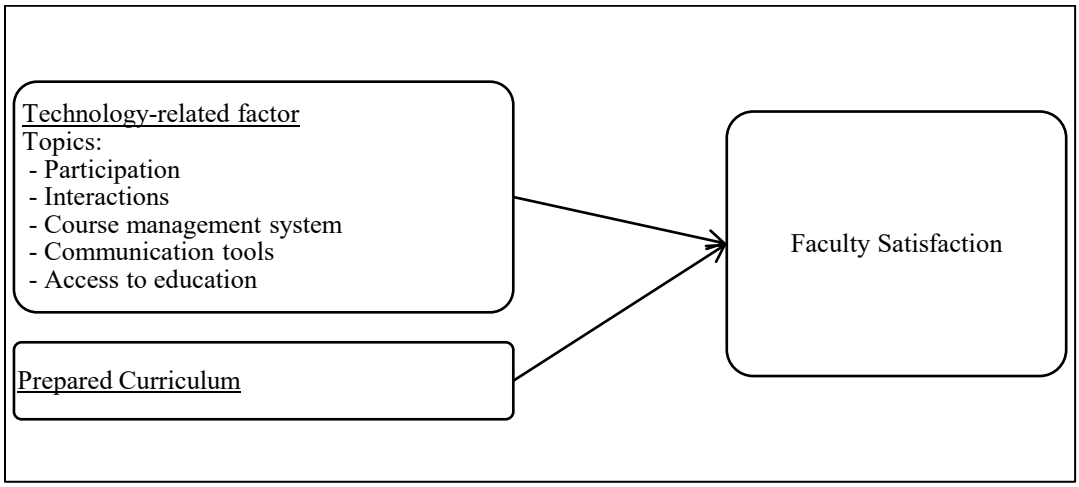

Figure 11. Logistic Regression Model Used in Test #2.

Test #3: Examination of the Time-related Factor

In addition to technology, the literature review presented in Chapter 2 suggests evidence that time is a factor that affects faculty satisfaction when teaching online. An exploratory factor analysis examination was completed regarding time. To understand the effect time has upon faculty satisfaction with the use of prepared curriculum materials, two logistic regression models were fit to the dataset. The third test in this study was designed to answer Research Question 3: *To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of the Time-related factor?* The results of this test are discussed in detail in Chapter 4. Figure 12 visually depicts the logistic regression model used in Test #3, which was originally presented in Chapter 1.

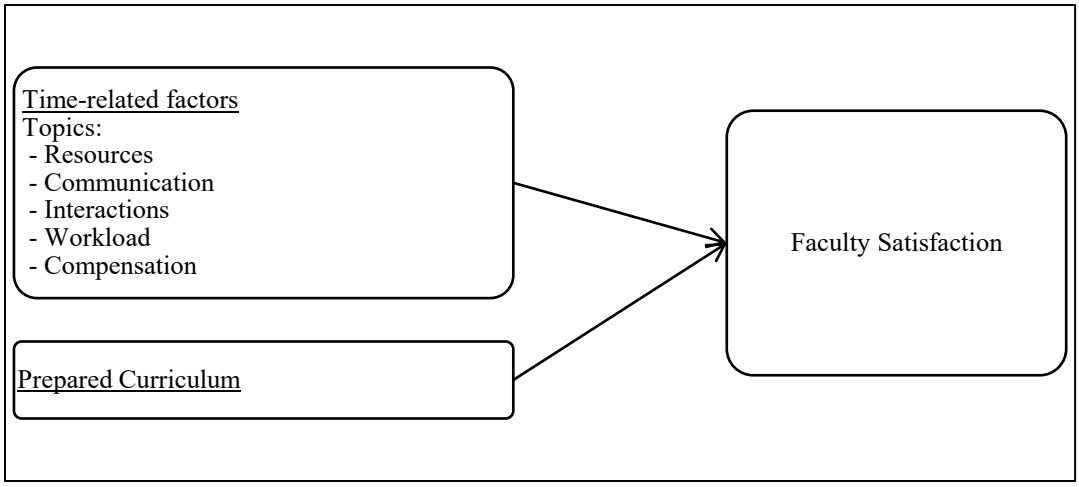

Figure 12. Logistic Regression Model Used in Test #3.

Test #4: Examination of Both the Technology-related and Time-related Factors

This study hypothesized that technology and time are factors that influence faculty satisfaction when teaching online. The previous tests modeled each factor individually. In order to understand more completely the affect that technology and time have upon faculty satisfaction with the use of prepared curriculum materials, a logistic regression model was created to test the influence of both factors together. The fourth test in this study was designed to answer Research Question 4: *To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of both the Technology-related and the Time-related factors?* The results of this test are discussed in detail in Chapter 4. Figure 13 visually depicts the logistic regression model used in Test #4, which was originally presented in Chapter 1.

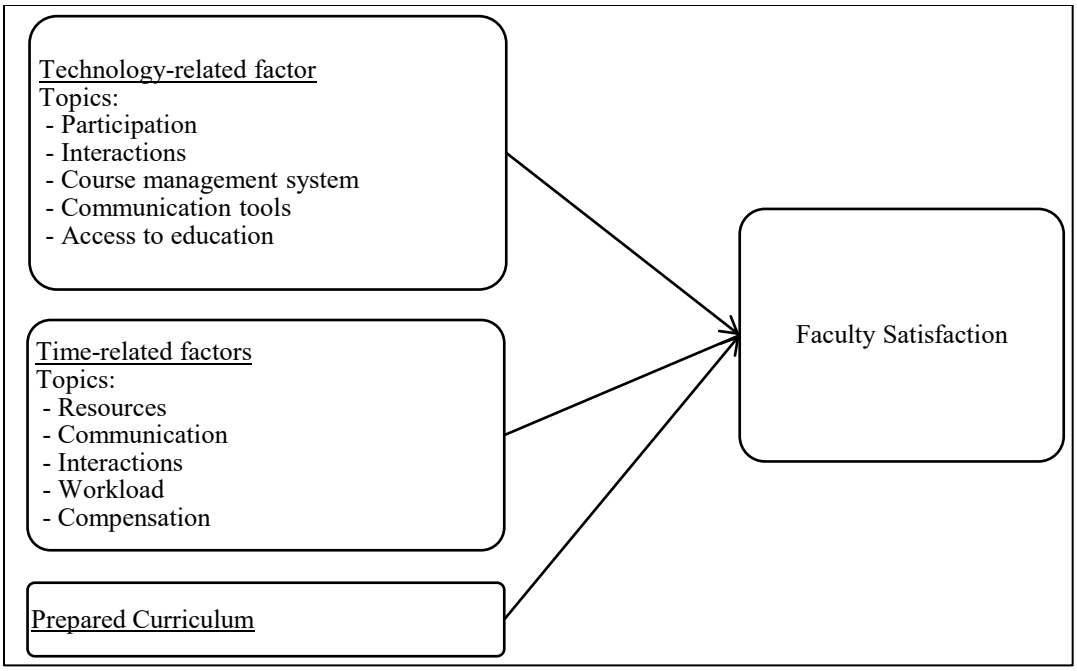

Figure 13. Logistic Regression Model Used in Test #4.

Chapter Summary

This chapter presented the information on the study methods used in this study. To examine the influence of prepared curriculum materials upon faculty satisfaction, permission to use and modify a previously developed instrument by Bolliger and Wasilik (2009) was obtained. Modifications to the instrument were completed. A pilot study was conducted to show that reliability and validity constructs held, and data were collected and analyzed. Faculty from seven colleges participated in completing the online survey. Factor analysis and reliability tests were completed on the dataset. Logistic regression models were fit on the dataset to examine the influence of the five factors of concern in this study with respect to faculty satisfaction. Findings from this dataset are presented in Chapter 4.

CHAPTER IV

FINDINGS AND DISCUSSION

Introduction

The purpose of this study is to examine the influence that prepared curriculum materials may have on community college faculty satisfaction when teaching online. In Chapter 3, the study methods were described, including the survey instrument and the data collection process. This chapter presents the findings, both the descriptive statistics and the inferential statistics generated from the dataset, along with analyses and discussion of the significant findings.

Descriptive Statistics

Mean and Standard Deviation

As described in the previous chapter, a survey was distributed to faculty teaching online at seven community colleges in the Midwest. Over 150 faculty voluntarily completed the online survey, and, after data cleansing, 135 usable records remained in the dataset. I calculated the mean and standard deviation for each question, which can be seen in Appendix L. Overall, of the 135 usable records, 110 faculty reported being "satisfied" teaching online (81.5%), and 109 faculty reported using prepared curriculum materials (80.7%)

Gender

The dataset used in this study consisted of 85 female faculty (62.3%), 42 male faculty (31.1%), and eight participants not indicating a gender (5.9%). I compared these numbers to the data reported for Fall 2010 in the Integrated Postsecondary Education Data System (IPEDS) from the National Center for Education Statistics. Collectively, these seven institutions had 442 full-time male faculty and 457 full-time female faculty, for an overall average population of 50.8% female faculty (National Center for Education Statistics, 2012).

Similar to the pilot study, the majority of participants in this study were female. The female participants in the study were also more satisfied than males, 85.9% as compared to 70.5%. This study supports previous research that female faculty members use CMS systems more frequently and have a more positive attitude about online learning (Clark 1993; Woods, Baker, & Hopper, 2004).

I then examined each gender category in more detail including the use of prepared curriculum materials, which revealed more information. Each gender reported a much higher satisfaction level when they used prepared curriculum materials. This information is displayed in Table 18.

Table 18. Gender and Satisfaction with Prepared Curriculum Materials.

Gender	Use Prepared Curriculum Materials	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
Male				
	Yes	27	8	77.1%
	No	4	3	57.1%
Female				
	Yes	59	9	86.8%
	No	14	3	82.4%
Unknown				
	Yes	4	3	57.1%
	No	1	0	100.0%
Totals				
	Yes	90	20	81.8%
	No	19	6	76.0%

Employment Status

The dataset used in this study consisted of 87 full-time faculty members (64.4%) and 48 part-time faculty members (35.6%). I compared these numbers to the data reported for Fall 2010 in the IPEDS from the National Center for Education Statistics. Collectively, these seven institutions had 899 full-time faculty and 973 part-time female faculty, for an overall average population of 52.0% full-time faculty (National Center for Education Statistics, 2012).

Full-time faculty reported satisfaction of 77.0%, while part-time/adjunct faculty reported a much higher satisfaction at 87.5%. The data align with previous literature that finds part-time faculty are more satisfied overall than full-time community college faculty (Truell et al., 1998).

I then examined each employment category in more detail including the use of prepared curriculum materials. Among full-time faculty, levels of satisfaction were higher with the use of prepared curriculum materials. Part-time/adjunct faculty reported

higher levels of satisfaction without using prepared curriculum materials, although the number of part-time/adjunct faculty who do not use prepared curriculum materials are small. This data are presented in Table 19.

Table 19. Employment and Satisfaction with Prepared Curriculum Materials.

Employment Status	Use Prepared Curriculum Materials	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
Full-time				
	Yes	53	14	79.1%
	No	14	6	70.0%
Part-time/ adjunct				
	Yes	37	6	86.0%
	No	5	0	100%
Totals				
	Yes	90	20	81.8%
	No	19	6	76.0%

Faculty Age

The dataset used in this study contained ages for 123 of the 135 participants (91.1%). For purposes of analysis, ages of the faculty members were organized into ranges of ten years. The average age of the participants was 46.1 years old, with ages ranging from 28 to 74 years old. In each age category, satisfaction levels were higher with the use of prepared curriculum materials, except for the age bracket of 70-79, which had only one participant. Another important observation to note is that satisfaction decreases with each age category until group 60-69 reports higher satisfaction over the 50-59 group.

I then examined each age category in more detail including the use of prepared curriculum materials. These data are presented in Table 20.

Table 20. Faculty Age and Satisfaction with Prepared Curriculum Materials.

Faculty Age	Use Prepared Curriculum Materials	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
20-29				
	Yes	2	0	100%
	No	0	0	n/a
30-39				
	Yes	18	1	94.7%
	No	4	1	80.0%
40-49				
	Yes	29	6	82.9%
	No	6	2	75.0%
50-59				
	Yes	25	7	78.1%
	No	6	2	75.0%
60-69				
	Yes	11	2	84.6%
	No	2	0	100%
70-79				
	Yes	0	1	0.0%
	No	0	0	n/a
Unknown				
	Yes	5	3	62.5%
	No	1	1	50.0%
Totals				
	Yes	90	20	81.8%
	No	19	6	76.0%

In each age category, satisfaction levels were higher with the use of prepared curriculum materials, except for the single faculty member who was recorded in the 70-79 age group. These data also suggest that younger faculty are more satisfied teaching, as satisfaction levels appear to decrease generally as age increases. Younger faculty may

have more overall experience with technology and might be more comfortable teaching online.

Years of Teaching Online

The data in this study contain year of teaching online data for 130 of the 135 participants (96.3%). For purposes of analysis, years of teaching online were organized into three time spans of 0-5, 6-10, and 11+ years of teaching online. The average years of teaching online was 5.3, with a range from zero to 22. The satisfaction levels of these three categories appear similar at around 80%.

I then examined each category in more detail including the use of prepared curriculum materials. Information regarding years of teaching online with prepared curriculum materials is presented in Table 21.

Table 21. Years Teaching Online and Satisfaction with Prepared Curriculum Materials.

Years Teaching Online	Use Prepared Curriculum Materials	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
0-5				
	Yes	51	10	83.6%
	No	10	4	71.4%
6-10				
	Yes	26	7	78.8%
	No	9	2	81.8%
11+				
	Yes	9	2	81.8%
	No	0	0	n/a
Unknown				
	Yes	4	1	80.0%
	No	0	0	n/a
Totals				
	Yes	90	20	81.8%
	No	19	6	76.0%

Analyzing this data, I found that in the first five years of teaching online satisfaction levels were higher with the use of prepared curriculum materials. However, satisfaction levels in the 6-10 year range were higher without the use of prepared curriculum materials. This might be because faculty who have taught for five years online have already developed the material for their courses. Newer faculty, struggling to build the classes for the first time, may rely upon prepared curriculum materials more.

English as a Primary Language

The dataset used in this study consisted of 126, the vast majority, participants' indicating that English was their primary language (93.3%). Conclusions from further examination of this data were limited due to the small numbers in the other categories. However, among primary English speakers, satisfaction levels are higher with the use of prepared curriculum materials. This information is displayed in Table 22.

Table 22. English and Satisfaction with Prepared Curriculum Materials.

English as a Primary Language	Use Prepared Curriculum Materials	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
Yes				
	Yes	84	18	82.4%
	No	18	6	75.0%
No				
	Yes	2	0	100%
	No	0	0	n/a
Unknown				
	Yes	4	2	66.7%
	No	1	0	100%
Totals				
	Yes	90	20	81.8%
	No	19	6	76.0%

Discipline

The dataset used in this study consisted of 126 participants' indicating an academic discipline (93.3%). In these data, there appears to be a wide range of satisfaction in relation to academic discipline, ranging from 64.3% to 100%. However, previous research on faculty suggests that academic discipline is not a significant factor in job satisfaction (Hagedorn, 2000; Sabharwal & Corley, 2008; Terpstra & Honoree, 2004; Wagoner, 2007). The discipline area with the highest level of satisfaction was in fine arts (100%). This was a surprising finding, as none of the researched literature addressed faculty in the fine arts. It should be noted, however, that this was also the smallest category (N=6). The next highest satisfied discipline area was health and nursing at 95.8% (N=24), then natural sciences at 92.9% (N=14). Interestingly, faculty who teach computers and technology were in the middle of the satisfaction range, with an average satisfaction of 92.3% (N=13). The lowest category of satisfaction was with faculty who teach communication and languages at 64.3% (N=28). This category was also tied with the social sciences as the largest category, with each having 28 participants.

An examination of each discipline in more detail along with the use of prepared curriculum materials is displayed in Table 23. Through this lens of academic discipline, there does not appear to be a connection between prepared curriculum materials and levels of satisfaction, although there are differences among the disciplines.

Table 23. Discipline and Satisfaction with Prepared Curriculum Materials.

Discipline	Use Prepared Curriculum Materials	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
Social science disciplines				
	Yes	19	5	79.2%
	No	3	1	75.0%
Business-related disciplines				
	Yes	9	2	81.8%
	No	1	1	50.0%
Health and nursing disciplines				
	Yes	18	1	94.7%
	No	5	0	100%
Natural science disciplines				
	Yes	12	1	92.3%
	No	1	0	100%
Communication and language disciplines				
	Yes	11	8	57.9%
	No	7	2	77.8%
Computers and technology disciplines				
	Yes	11	1	91.7%
	No	1	0	100%
Fine art disciplines				
	Yes	5	0	100%
	No	1	0	100%
Unknown/No response				
	Yes	5	2	71.4%
	No	0	2	0.0%
Totals				
	Yes	90	20	81.8%
	No	19	6	76.0%

A closer examination of the communication and language faculty revealed that 21 of the 28 faculty (75%) are female. However, this raises a contradiction given the previously discussed findings and existing literature on higher satisfaction rates among female faculty. Because this category has a high percentage of female faculty, one would expect to see a higher than average satisfaction rate in this category, but this is not what the data indicate.

One plausible explanation for this difference to occur at the community college level is the emphasis on career or technical programs with the inclusion of so-called "general education" classes that do not funnel into a discipline. Gill and Leigh (2003) stated that the traditional role of community colleges to award an associate degree to a student who then transfers to a university has changed to also include a second primary role of offering vocational and occupational degrees. In short, this means that community colleges serve students who are motivated by two different objectives. Some students will enroll in a community college and be motivated academically with an intention to transfer, while other students are motivated by employment with an intention of earning a terminal degree (Gill & Leigh, 2003). Zinser and Hanssen (2006) stated this duality of missions was a challenge for community colleges. They continued, "the combination of technical and academic curricula has been problematic for occupational students, who do not complete their associate's degree as often as do academic students" (p. 40)

Truell et al. (1998) studied satisfaction of occupational and technical faculty at community colleges and found that part-time faculty were more satisfied than full-time faculty. Truell et al. contrasted their research to Williams and Wiatrek (1986), who

studied faculty satisfaction of speech and English faculty and community colleges and found that full-time faculty were more satisfied than part-time faculty. Truell et al. (1998) suggested the differences in faculty satisfaction may be a result of what they teach, not their employment status. Within a community college context, faculty in communication disciplines might be less satisfied because they teach "general education" classes that are, from the student's perspective, "add-on" mandatory classes that are outside of a vocational or occupational field.

Overall, the discipline category of communication and language is comprised of 75% female faculty. The only other discipline with a high female-to-male faculty ratio was health and nursing (83%). All other disciplines were close to an even ratio of female and male faculty. It is interesting to note that the two high female faculty ratio disciplines almost bookend the satisfaction range: Health and nursing had the second highest level of satisfaction (95.8%), while communication and language had the lowest (64.3%). This discrepancy of satisfaction levels among high-percentage female groups might be explained because of the community college setting. Health and nursing disciplines would generally be considered an occupational program, while communication and language generally are not.

Differences among Colleges

The dataset in this study contained the participants from seven different community colleges. There were 14 participants from college "F," and, interestingly, the entire faculty reported using prepared curriculum materials. College "F" also had the lowest overall faculty satisfaction percentage. All of the faculty from college "D"

reported being satisfied teaching online, but, of the six faculty, three reported using prepared curriculum materials and three reported they didn't use prepared curriculum materials. These are very small numbers to make reasonable observations from Colleges "C", "D", "E," and "F." However, it can be observed that in colleges with more than 20 participants ("A", "B," and "G"), there was an elevated level of satisfaction by faculty who used prepared curriculum materials. This information is presented in Table 24.

Table 24. Colleges and Satisfaction with Prepared Curriculum Materials.

College	Use Prepared Curriculum Materials	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
A				
	Yes	21	3	87.5%
	No	1	2	33.3%
B				
	Yes	19	1	95.0%
	No	6	1	85.7%
C				
	Yes	8	3	72.7%
	No	3	1	75.0%
D				
	Yes	3	0	100%
	No	3	0	100%
E				
	Yes	3	1	75.0%
	No	1	0	100%
F				
	Yes	10	4	71.4%
	No	0	0	n/a
G				
	Yes	26	8	76.5%
	No	5	2	71.4%
Totals				
	Yes	90	20	81.8%
	No	19	6	76.0%

This study included faculty from seven community colleges, three of which were categorized as "rural" colleges ("A", "D," and "E") and four as "metropolitan" colleges

("B", "C", "F," and "G"), based on geographic characteristics. Faculty satisfaction at the rural colleges ranged from 80% to 100%, while satisfaction at the metropolitan colleges ranged from 71.4% to 93%. I computed the mean satisfaction levels for both categories of colleges and found that faculty satisfaction at rural colleges was approximately 5% higher than faculty at metropolitan colleges. Overall, the mean of rural colleges was 84.2% and at metropolitan colleges was 79.4%. Admittedly, this difference is negligible and perhaps is limited by the small number of colleges included in this study. However, a slight difference does exist and perhaps could widen with the inclusion of more colleges. Bolliger and Wasilik (2009) stated that the university in their study was rural in nature and thus had been active in providing distance education. This implies that faculty at rural institutions may be more open to teaching online. While there is very little literature regarding faculty satisfaction regarding geographic areas, one national geographic study found that geographic regions do not affect faculty satisfaction (Terpstra & Honoree, 2004).

Rather than geographic location, another plausible explanation might be the size of the institution. After a subsequent literature search, I found little data on the size of a community college and a relationship to faculty satisfaction. However, Reese and Johnson (1988) studied faculty satisfaction at secondary schools and found that larger schools had "the lowest job satisfaction" (p. 383). In this study, the rural colleges average approximately 3,100 students and 160 faculty per institution, which computes to a student-faculty ratio of 19:1. In contrast, the metropolitan colleges averaged 9,375 students and 348 faculty, which computes to a student-faculty ratio of 27:1. This

relationship between institution size and faculty satisfaction supports Reese and Johnson's findings.

Prepared Curriculum Materials

The dataset in this study consisted of 110 faculty's (81.5%) reporting that they use prepared curriculum materials. The survey instrument asked the participants to identify both the source and the type of prepared curriculum materials they use. Both the source and the type of prepared curriculum materials were analyzed, and a discussion of each is presented in the following two sections.

Sources of Prepared Curriculum Materials

The data in this study contain information on six different sources of prepared curriculum materials. Table 25 displays the reported sources of prepared curriculum materials and their frequency of use in descending order, including the satisfaction levels.

Table 25. Sources of Prepared Curriculum Materials.

Source of Prepared Curriculum Materials	Total Frequency of Use	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied*
Book publisher	97	81	16	83.5%
Random Internet searches	57	45	12	78.9%
Online community	31	27	4	87.1%
Other	30	24	6	80.0%
Product manufacturer	23	20	3	87.0%
College's instructional design Department	16	15	1	93.8%

* Note: Of those participants reporting the use of this source of prepared curriculum materials.

The highest source of satisfaction came from using a college's instructional design department at 93.8% (N=16). It should be noted that faculty identified using this source of prepared curriculum the least. Although a small number of faculty use this source of prepared curriculum materials, it appears to generate the highest level of satisfaction. The second and third highest satisfied sources of prepared curriculum materials come from online communities at 87.1% (N=31), which is closely followed by product manufacturers at 87.0% (N= 23). Satisfaction using prepared curriculum materials from a product manufacturer might suggest that faculty are teaching students to use specific equipment and the resources from the manufacturer provide valuable learning opportunities. This would imply technical training courses rather than academic or transfer courses. Satisfaction using prepared curriculum materials from instructional design departments and online communities might suggest that faculty are more satisfied teaching online when they receive help building online classes. The literature supports this hypothesis, since faculty commonly report issues of lack of support and training when creating an online class (Maguire, 2005; Rockwell et al., 1999; Sorcinelli, 1994). It appears from the data that the most satisfied faculty members are those who reach out for help through either their instructional design department or fellow colleagues through an online community.

Book publishers were the highest used source of prepared curriculum materials at 88.2% (N=97). However, the level of satisfaction with the use of book publisher materials was lower than expected at 83.5% (N=81). Random Internet searches for prepared curriculum materials had the lowest satisfaction level of 78.9% (N=57). These data suggest that simply acquiring prepared curriculum materials may not increase

faculty satisfaction. This contrast of usage levels and satisfaction levels suggest there needs to be a connection between faculty to either other people or a specific product.

Overall, all sources of prepared curriculum materials had relatively high satisfaction levels, ranging from 78.9% to 93.8%. The differences in percentage points among these sources of prepared curriculum materials are small. However, synthesizing connections between the sources of prepared curriculum materials leads me to believe there are contextual connections with satisfaction. These differences may be more apparent with a larger sample size.

Types of Prepared Curriculum Materials

The data in this study contain information on nine different types of prepared curriculum materials. Table 26 displays the reported types of prepared curriculum materials and their frequency of use in descending order, including the satisfaction levels.

Table 26. Types of Prepared Curriculum Material.

Type of Prepared Curriculum Material	Total Frequency of Use	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied*
Quizzes/test banks	91	74	17	81.3%
Reading assignments	87	71	16	81.6%
Homework	78	64	14	82.1%
Slides/presentations	63	56	7	88.9%
Graphics/images	59	53	6	89.8%
Handouts	50	44	6	88.0%
Tables/diagrams	37	34	3	91.9%
Interactive labs	30	26	4	86.7%
Other	26	20	6	76.9%

* Note: Of those participants reporting the use of this type of prepared curriculum materials.

The type of prepared curriculum material with the highest satisfaction was the use of tables/diagrams (91.9%) followed by graphics/images (89.8%). In comparison, the most frequently used type of material was quizzes at 82.7% (N=91), however, satisfaction with quizzes as a type of prepared curriculum material were in the middle of the range at 81.3%. It is assumed that with today's CMS systems, most faculty could make quizzes, though this would be very time consuming. However, a faculty member may not possess the technical ability to display information effectively in tables, diagrams, graphics, or images. It appears from the dataset that faculty who use these visual prepared curriculum materials have higher levels of satisfaction than any other type of prepared curriculum material. This again might indicate that faculty are looking to others for development of material to avoid experiencing the frustration of developing all the content themselves.

Teaching Modalities

The faculty sampled in this study taught at least one class online and used the college system's CMS, as described in Chapter 3. However, the faculty might also have taught classes in a face-to-face modality or in a blended/hybrid modality. As defined in Chapter 1 of this study, face-to-face classes are conducted in a traditional format of meeting inside a classroom, and online class are conducted electronically through the use of a CMS, and a hybrid/blended class would be conducted as a mixture of some face-to-face and some CMS engagement. The survey instrument collected information on these three teaching modalities as well as a category for "other" to include the possibility of credit release, special projects, or special teaching arrangements. For each modality, the

participants were asked to identify both a range of credits and the number of students they teach in a typical academic year.

Examining the data from the four different teaching modalities, it appears that most faculty have a mixed teaching load of some face-to-face classes, some online classes, and some hybrid classes. Twenty participants indicated they did not have an online teaching load (14.8%). These faculty may teach face-to-face with some hybrid classes that use prepared curriculum material, but do not teach completely online classes. More interesting is that 23 faculty (17%) indicated that they do not have a face-to-face teaching load. This suggests that they teach some combination of online and/or hybrid classes. Overall statistics on the frequency of faculty in comparison of credits and number of students taught per modality can be found in Appendix M.

Workload

The community college faculty in this study's sample is part of one state-wide system and is governed by a collective bargaining agreement. Thereby, all faculty in this study share a standard definition of teaching expectations and workload. According to the collective bargaining agreement, full-time faculty teach 30 credits of classes in total between the fall and spring semesters, which averages to 15 credits per semester. Faculty may teach higher numbers of credits on an overload with a maximum of 44 credits in one academic year. That calculation is a combination of teaching more than 30 credits during the fall or spring semesters, or by teaching in an optional summer term. A typical class at these colleges is three to four credits in length, which means that the average full-time faculty member teaches eight to ten classes in a given academic year. The basis for a

single credit hour is one hour of lecture, two hours of laboratory work, or four hours of supervisory work experience per week for 16 weeks. Thus, in this environment, it is possible that a faculty member has more contact hours with a student than the credit number would reflect. For example, if a four-credit science class is comprised of three lecture credit hours and one laboratory credit hour, then the faculty-student contact is actually five hours a week. Therefore, faculty could teach 15 credits a semester, yet, if the faculty member teaches a significant number of laboratory classes, her/his student contact time could increase up to 20 hours a week. It should be noted that community college faculty at these institutions do not have a research or publishing requirement as part of their job description: The faculty's contract is solely on teaching undergraduate students leading to an associate's degree.

Faculty workload in this study was examined through two characteristics. The first workload characteristic inquired about the number of credits each faculty member taught in an average academic year. The second workload characteristic inquired about the number of students taught in an average academic year. I examined faculty workload based on teaching modalities, number of credits taught, and number of students taught. While more specific data may have been drawn to dig deeper at the actual hours a faculty member spends, that level of detail was beyond this study and would have complicated the analysis significantly had I obtained such information. The current data, however, provide a calculated basis beyond what Bolliger and Wasilik (2009) undertook and provides an initial analysis to relate workload to community college faculty satisfaction when teaching online.

Credits Taught

The data in this study contain reported information on the number of credits taught in various teaching modalities. Overall statistics on modality, credits, and satisfaction can be found in Appendix N.

The most frequent range of credits taught for online classes was 5-9 credits with 50 participants. The next highest range was 1-4 credits (N=26) followed closely by 10-16 credits (N=25). This means that 101 of the 135 participants (74.8%) taught at least one online class. Fourteen participants (10.4%) taught greater than 17 credits online, or more than a half of a full-time load online. I also observed that teaching more credits online corresponded with more students taught, which was expected.

I graphed the data of modality, credits, and satisfaction using "percent satisfied" on the Y-axis and "number of credits taught" on the X-axis. Figure 14 displays the faculty satisfaction along a continuum from 0 credits to 44 credits in each modality.

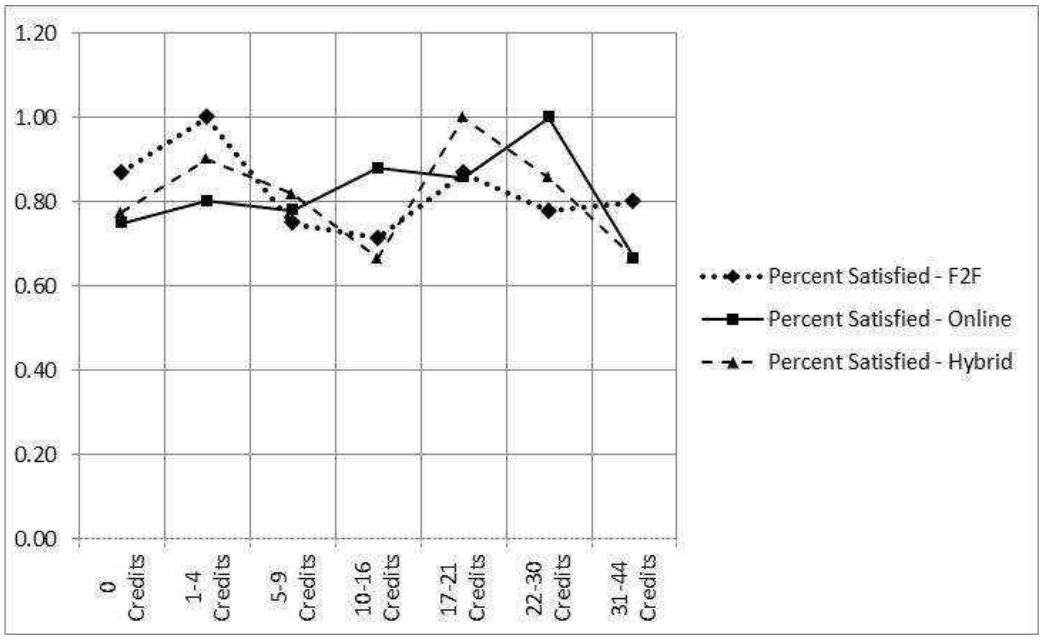

Figure 14. Percentage of Satisfied Faculty Versus Credits Taught.

These data imply that the satisfaction of faculty who teach face-to-face and hybrid classes appears to have an inverse bell-shape appearance. Teaching few credits in these modalities or teaching a majority of credits seem to provide the most satisfaction. However, it appears that faculty who teach about half of their teaching load in either one of these categories are the least satisfied. Perhaps this is a result of teaching some credits in each modality, rather than exclusively in one modality. The data also imply that, unlike face-to-face or hybrid classes, satisfaction when teaching online steadily increases with more credits taught. Perhaps teaching in this modality becomes engaging for the faculty member, and the teaching process becomes more enjoyable as faculty become more comfortable teaching online. This is true until the last category of credits, when the faculty member would teach above a normal load of credits.

Students Taught

The data in this study also contain reported information on the number of students taught in various teaching modalities. Overall statistics on modality, students, and satisfaction can be found in Appendix O.

The most frequent range of students taught was 76-150 students (N=41). The next two most frequent ranges were 26-50 (N=29) and 51-75 (N=20). This means that 90 of the 135 participants (66.7%) taught between 26 and 150 students online in a typical academic year.

I graphed this student data above in a similar manner as the credit data discussed earlier. The graph uses "percent satisfied" on the Y-axis and "number of students taught"

on the X-axis. Figure 15 displays the faculty satisfaction along a continuum from 0 students to 251+ students in each modality.

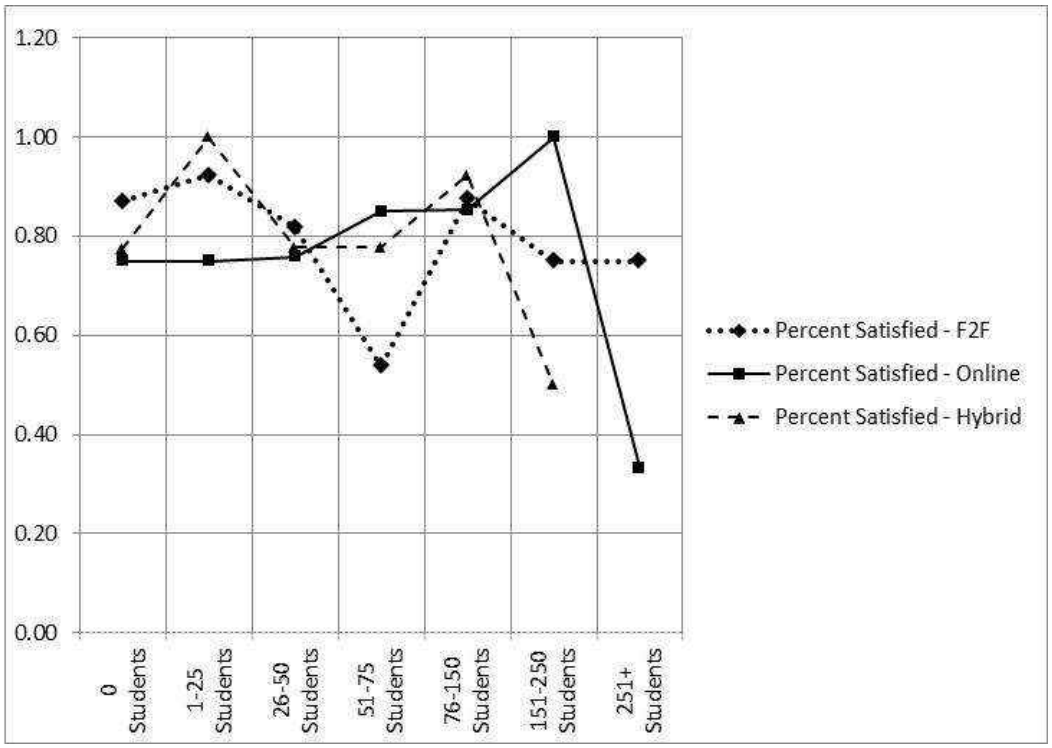

Figure 15. Percentage of Satisfied Faculty Versus the Number of Students Taught.

The phenomenon observed with the number of credits taught also presents itself with the number of students taught. When teaching in face-to-face or hybrid modalities, the data suggest that the highest satisfaction occurs with few students or many students. In contrast, faculty who teach online show a consistent increase in satisfaction as the number of students increase, until the teaching exceeds normal full-time workloads.

Further Discussion

The data suggest the use of prepared curriculum materials have a connection to faculty satisfaction. Of the faculty who indicated they were satisfied (N=110), the vast majority indicated they used prepared curriculum materials (N=90), or 81.8%. In other words, there is approximately a 4:1 ratio of faculty who indicated they were satisfied using prepared curriculum materials compared to faculty who indicated they were satisfied and did not use prepared curriculum materials.

Examining the descriptive statistics in detail suggests additional connections between faculty satisfaction and the use of prepared curriculum materials. Satisfaction when using prepared curriculum materials among male faculty was 20% higher than those who did not use prepared curriculum materials and among female faculty was almost 70% higher than those who did not use prepared curriculum materials. Full-time faculty who used prepared curriculum materials were almost 10% more satisfied than full-time faculty who did not use prepared curriculum materials. Regarding the age of faculty (excluding the one outlier in the range of 70-79), all age categories of faculty reported higher levels of satisfaction using prepared curriculum materials. Finally, both native English speakers and non-native English speakers reported increased levels of satisfaction using prepared curriculum materials.

For other variables, analyzing the data in more detail revealed mixed results. Examining the data by discipline show a mixed result, where faculty in three disciplines reported higher satisfaction levels with prepared curriculum materials, four disciplines reported higher satisfaction levels without prepared curriculum materials, and one discipline area reported a tie. Faculty were equally satisfied with and without prepared

curriculum materials. Also, satisfaction levels based on the college where the faculty member was employed also showed mixed results. Faculty at four colleges reported higher satisfaction levels with prepared curriculum materials, faculty from two colleges reported higher satisfaction without using prepared curriculum materials, and there was one tie, with an equal number of faculty reporting being satisfied with and without using prepared curriculum materials. Finally, the data on years of teaching online also had mixed results with less experienced faculty reporting higher levels of satisfaction using prepared curriculum materials and more experienced faculty reporting higher satisfaction without using prepared curriculum materials.

Inferential Statistics

Results of Test #1

The first test in this study was to replicate the Bolliger and Wasilik (2009) study with the inclusion of prepared curriculum materials. Bolliger and Wasilik used three factors to determine faculty satisfaction: Student-related, Instructor-related, or Institution-related factors. Test #1 was designed to answer the first research question: *To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of Bolliger and Wasilik's Student-related, Instructor-related or Institution-related factors?*

As previously discussed, the Bolliger and Wasilik (2009) study reduced the 28 items on the instrument down to three factors (student, instructor, and institution). Then only these three factors were evaluated against faculty satisfaction. To replicate the Bolliger and Wasilik study (2009) closely to compare results, this study used factor

analysis to reduce the individual items from the instrument into a small number of factors. To accomplish this, I used a procedure called factor analysis, which is a method used to reduce a large number of variables into a few factors that explain a large portion of the variability. Items 9 and 18 on the instrument are general satisfaction items and do not fit into any factors identified in this study. Thus, these two questions were eliminated from the factor analysis examination.

An eigenvector matrix was outputted from the factor analysis examination. This matrix displays Principal Component Factors (PCF) and organizes the individual items and their eigenvalue. The eigenvalue represents the variable's weight within the PCF. Through this process, the individual items are organized into factors and their placement in rank within each PFC. The Eigenvector matrix table is displayed in Appendix P.

The Eigenvalues of Correlation Matrix and a scree plot were generated and examined. The correlation matrix in Table 27 shows the PCF, its eigenvalue, its proportion of the variance explained, and cumulative variance. The scree plot, displayed in Figure 16, suggests that there are six factors present for this study with this dataset. Referring back to the correlation matrix in Table 27, these six factors explain 49.11% of the total variance.

Table 27. Eigenvalues of Correlation Matrix.

	Eigenvalue	Proportion	Cumulative
1	3.860	0.1485	0.1485
2	2.910	0.1119	0.2604
3	1.789	0.0688	0.3292
4	1.531	0.0589	0.3881
5	1.474	0.0567	0.4448
6	1.204	0.0463	0.4911
7	1.195	0.0460	0.5370
8	1.148	0.0442	0.5812
9	1.067	0.0410	0.6222
10	0.953	0.0366	0.6589
11	0.937	0.0361	0.6949
12	0.869	0.0334	0.7284
13	0.827	0.0318	0.7602
14	0.757	0.0291	0.7893
15	0.699	0.0269	0.8161
16	0.648	0.0249	0.8411
17	0.588	0.0226	0.8637
18	0.554	0.0213	0.8850
19	0.475	0.0183	0.9033
20	0.436	0.0168	0.9200
21	0.425	0.0163	0.9264
22	0.422	0.0162	0.9526
23	0.394	0.0152	0.9678
24	0.318	0.0122	0.9800
25	0.276	0.0106	0.9906
26	0.244	0.0094	1.0000

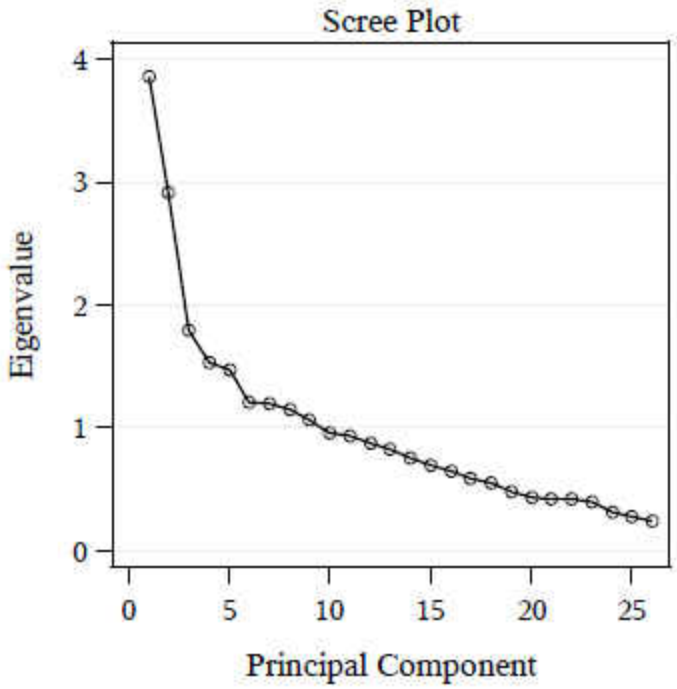

Figure 16. Scree Plot.

Examining the Eigenvalues of Correlation Matrix and the scree plot suggest there are six factors, PFCs, present in this dataset. With the discovery of six PFCs in this dataset, I initially assumed this confirmed the presence of the five factors discussed in this study plus one unknown factor. I examined the eigenvalues of each item inside of the six PFCs in order to determine which PFC represented which factor of student, instructor, institution, technology, or time. I expected that one of the six PFCs would display a strong connection to one of the five proposed factors used in this study. In other words, I expected that PCF1 would, for example, load the Student-related items, PCF2 would load the Instructor-related, PCF3 would load the Institution-related factors, etc. I created six PCF tables and visually inspected the loading of each item in the PCF and the related factor for each item. After this examination of the PCFs, it appears the items do not align into well-organized factors. This suggests there is a significant amount

of factor items mixing together, which does not support reducing this dataset down to any of the five factors discussed in this study.

Reliability of Factors

The PCFs discussed previously suggest there is mixing of the items within each PCF. To confirm these results, I calculated Cronbach's alpha coefficient for each factor. Calculating the reliability for each factor would support or dismiss evidence of the presence of the five proposed factors in this dataset.

Results from the previous study (Bolliger & Wasilik, 2009) show that overall reliability was 0.85, the subscale reliability for the Student-related factor was 0.86, the subscale for Instructor-related factor was 0.55, and the subscale for Institution-related factor was 0.55. The current study's reliability coefficients are comparably lower than the previous study; 0.55, 0.38, and 0.27, respectively. Comparisons from the current dataset and the results of Bolliger and Wasilik (2009) are shown in Table 28.

Table 28. Comparison of Calculated Reliability.

Reliability	Bolliger and Wasilik's Findings*	Current Study's Findings
Overall reliability	0.85	0.73
Student factor	0.86	0.55
Instructor factor	0.55	0.38
Institution factor	0.55	0.27
Technology factor	n/a	0.62
Time factor	n/a	0.39

Note: *From Bolliger and Wasilik (2009).

The results of the Cronbach's alpha tests indicate that reliability for each factor is below the standard accepted threshold of 0.70. These low results might be the result of a relatively small sample size (N=135). Nonetheless, no factor reached the 0.70 threshold, suggesting that none of the five discussed factors are present in this dataset.

After examining Cronbach's alpha coefficient for subscale reliability, and after examining the factor weightings in the PCF matrix, there is not enough evidence to support data reduction from individual items into factors. Therefore, examination of the data through factors cannot be completed with this dataset.

For this study to answer Research Question #1, Bolliger and Wasilik's three factors need to be present. Unfortunately, based on factor analysis and reliability examinations of the items presumably formulating these factors, the data in this study do not support Bolliger and Wasilik's findings because the data did not organize cleanly into Bolliger and Wasilik's factors. Therefore, I was unable to test this research question with this dataset and was unable to use the factor loadings in a regression model. Simply, this question remains unanswered.

Results of Test #2

The literature review in this study supports the establishment of a Technology-related factor as an influence on faculty satisfaction when teaching online. However, as described in Test #1, analysis of the dataset did not support reducing the individual items into a factor of *technology*. In the absence of a Technology-related factor, the regression models used in Test #2 were fit with the appropriate individual items from the survey instrument as independent variables. Test #2 was designed to answer the second research

question: *To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of the Technology-related factor?*

To answer the second research question, two models were fit with logistic regression. First, the dependent variable was examined with the variables associated with the Technology-related factor. Then a second model was fit based on the previous model with the addition of prepared curriculum materials. As stated previously, the factor analysis and Cronbach's reliability tests show that the data do not support evidence of a Technology-related factor. Instead, the items that comprise this factor were examined as separate independent variables against the dependent variable of "Are you satisfied teaching online?"

I generated a table with analysis of the maximum likelihood estimate and odds ratio estimate, displaying the estimated influence of each item, and its p-value. This information is collectively displayed for both models in Table 29.

In both models, the only items that are significant with an alpha level of below 0.05 are Items 2 and 14. Item 2, "The flexibility provided by the online environment is important to me," it is estimated that for every one increase in agreement with this item, faculty are 3.113 times more likely to be satisfied teaching online and 3.121 times more likely to be satisfied teaching online with the use of prepared curriculum materials. This is only an eight-thousandth difference in the odds ratio estimates, which shows barely any influence of prepared curriculum materials.

Table 29. Results of Test #2.

	Model 1: Regression Test Without Prepared Curriculum Materials			Model 2: Regression Test With Prepared Curriculum Materials		
Variable	Maximum Likelihood Estimate	p-value	Odds Ratio Estimate	Maximum Likelihood Estimate	p-value	Odds Ratio Estimate
1	-0.0607	0.8285	0.941	-0.0685	0.8085	0.934
2	1.1355	0.0125	3.113	1.1382	0.0120	3.121
3	0.4310	0.3115	1.539	0.3959	0.3772	1.486
5	-0.0588	0.8949	0.943	-0.0573	0.8979	0.944
14	-1.1681	0.0017	0.311	-1.1687	0.0017	0.311
16	0.3672	0.4244	1.444	0.3463	0.4593	1.414
20	0.1772	0.6660	1.194	0.1741	0.6714	1.190
23	0.5149	0.3223	1.673	0.5389	0.3097	1.714
27	0.4133	0.3802	1.512	0.4269	0.3675	1.532
Use of Prepared Curriculum Materials	NA	NA	NA	-0.0807	0.8063	0.851

The other significant item was Item 14, "Online teaching is often frustrating because of technical problems." The results for this item do not change at all with the use of prepared curriculum materials, with an estimation of only 0.311 times more likely to be satisfied for every one increase in agreement with the item.

The results of Test #2 indicate that the use of prepared curriculum materials are not a statistically significant variable affecting faculty satisfaction after accounting for the other technology variables. This is indicated by the use of prepared curriculum of having a p-value of 0.8063.

Results of Test #3

The literature review in this study also supports the establishment of a Time-related factor as an influence on faculty satisfaction when teaching online. As before, the

analysis described in Test #1 did not support reducing the individual items into a factor of *time.* In the absence of a Time-related factor, the regression models used in Test #3 were fit with the appropriate individual items from the survey instrument as independent variables. Test #3 was designed to answer the second research question: *To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of the Time-related factor?*

To answer this research question, two models were fit with logistic regression. First, the dependent variable was examined with the variables associated with the Time-related factors. Then a second model was fitted based on the previous model with the addition of prepared curriculum materials. As previously stated, factor analysis and Cronbach's reliability tests do not support evidence of a Time-related factor. Instead of using a factor of time, the items that comprise the factor were examined as separate independent variables against the dependent variable, "Are you satisfied teaching online?"

Similar to the previous test, I generated a table with analysis of maximum likelihood estimate and odds ratio estimate, displaying the estimated influence of each item, and its p-value. This information is collectively displayed for both models in Table 30.

Table 30. Results of Test #3.

	Model 3: Regression Test Without Prepared Curriculum Materials			Model 4: Regression Test With Prepared Curriculum Materials		
Variable	Maximum Likelihood Estimate	p-value	Odds Ratio Estimate	Maximum Likelihood Estimate	p-value	Odds Ratio Estimate
4	-0.3442	0.2394	0.709	-0.3440	0.2396	0.709
6	-.07422	0.0593	0.476	-0.7432	0.0595	0.476
10	0.8724	0.0189	2.393	0.8735	0.0191	2.395
11	0.8662	0.0684	2.378	0.8680	0.0693	2.382
15	0.1386	0.6844	1.149	0.1362	0.6943	1.146
21	0.0388	0.8912	1.040	0.0382	0.8930	1.039
24	0.3682	0.3155	1.445	0.3679	0.3162	1.445
Use of Prepared Curriculum Materials	NA	NA	NA	0.0108	0.9706	1.022

In both of these models, three questions are significant with p-values close to or below an alpha level of 0.05. For Item 6, "I have a higher workload when teaching an online course as compared to the traditional one," it is estimated that faculty are 0.476 times more likely to be satisfied with every increase in agreement with this item. Using prepared curriculum materials essentially does not alter the odds of being satisfied. Both items 10, "My students are very active in communicating with me regarding online course matters," and 11, "I appreciate that I can access my online course any time it is convenient to me," have similar results. For every one increase in agreement with these items, faculty are estimated to be approximately 2.5 times more likely to be satisfied, but neither significantly changed with the use of prepared curriculum materials.

The results of Test #3 indicate that the use of prepared curriculum materials are not a statistically significant variable affecting faculty satisfaction after accounting for the

other time variables. This is indicated by the use of prepared curriculum materials having a p-value of 0.9706.

Results of Test #4

The literature review in this study supported the establishment of Technology-related and Time-related factors. To understand further the effect that these two factors have upon faculty satisfaction when teaching online, the framework for Test #4 incorporates both of these factors with the use of prepared curriculum materials. Unfortunately, as described before, the analysis in Test #1 did not support reducing the individual items into factors of *Technology* or of *Time.* In the absence of both the Technology-related and Time-related factors, the regression models used in Test #4 were fit with the appropriate individual items from the survey instrument as independent variables. Test #4 was designed to answer the fourth research question: *To what extent do prepared curriculum materials increase the likelihood of community college faculty satisfaction when teaching online independent of both the Technology-related and Time-related factors?*

To answer this question, two models were fit with logistic regression. First, the dependent variable was examined with the items associated with the Technology-related together with the Time-related items. Then a second model was fitted based on the previous model but with the addition of prepared curriculum materials. Again, the factor analysis and Cronbach's reliability tests show the data do not support a Technology-related factor or a Time-related factor. Instead, the items that comprise these two factors

were used as separate independent variables against the dependent variable, "Are you satisfied teaching online?"

As before, I generated a table with analysis of the maximum likelihood estimate and odds ratio estimate, displaying the estimated influence of each item, and its p-value. This information is collectively displayed for both models in Table 31.

Table 31. Results of Test #4

	Model 5: Regression Test Without Prepared Curriculum Materials			Model 6: Regression Test With Prepared Curriculum Materials		
Variable	Maximum Likelihood Estimate	p-value	Odds Ratio Estimate	Maximum Likelihood Estimate	p-value	Odds Ratio Estimate
1	-0.0170	0.9564	0.983	-0.0345	0.9135	0.966
2	1.1358	0.0217	3.114	1.1488	0.0207	3.155
3	0.5058	0.3102	1.658	0.4696	0.3598	1.599
4	-0.3628	0.2718	0.696	-0.3656	0.2693	0.694
5	0.00503	0.9918	1.005	0.00103	0.9983	1.001
6	-0.9561	0.0384	0.384	-0.9479	0.0412	0.388
10	0.3521	0.4116	1.422	0.3371	0.4365	1.401
11	-0.1418	0.8314	0.868	-0.1581	0.8138	0.854
14	-1.4607	0.0010	0.232	-1.4744	0.0010	0.229
15	0.8316	0.0517	2.297	0.8597	0.0509	2.362
16	0.1900	0.7087	1.209	0.1595	0.7588	1.173
20	0.2183	0.6420	1.244	0.2184	0.6418	1.244
21	-0.1834	0.6215	0.832	-0.1866	0.6171	0.830
23	0.4713	0.3839	1.602	0.5029	0.3665	1.653
24	0.5387	0.2102	1.714	0.5582	0.2013	1.748
27	0.8891	0.1463	2.433	0.9267	0.1398	2.526
Use of Prepared Curriculum Materials	NA	NA	NA	-0.1058	0.7797	0.809

Four items emerged as statistically significant with p-values less than or close to an alpha = 0.05 level. These four are Items 2 (technology), 6 (time), 14 (technology), and 15 (time).

The two significant variables in the technology models (Test #2) were also significant in these models (Test #4). Item 2 (p-value = 0.0207), which was observed in Test #2, is estimated in this model that for every one increase, faculty are 3.114 times more likely to be satisfied teaching online and 3.155 times more likely to be satisfied teaching online using prepared curriculum materials. Item 14 (p-value=0.0010), also previously observed in Test #2, is estimated in these models that for every one increase faculty are 0.232 times more satisfied without using prepared curriculum materials and 0.229 times more likely to be satisfied with using prepared curriculum materials. Table 32 summarizes the odds estimates in increased satisfaction of the significant technology related variables using prepared curriculum materials.

Table 32. Odds of Increased Satisfaction Estimates of Technology-Related Factor Items.

Item Number	Technology Only Model (Test #2)	Technology and Time Model (Test #4)
2 - The flexibility provided by the online environment is important to me.	3.121	3.155
14 - Online teaching is often frustrating because of technical problems.	0.311	0.229

The strongest time variable from Test #3 is also significant in Test #4. Item 6 (p-value = 0.0412) is estimated that for every one increase faculty are 0.384 times more likely to be satisfied without using prepared curriculum materials and 0.388 more satisfied with using prepared curriculum materials.

Item 15 (p value = 0.0509), a Time-related variable, emerged as a fourth significant variable. Item 15 is, “It takes me longer to prepare for an online course on a

weekly basis than for a face-to-face course." Odds estimates show that faculty are approximately 2.3 times more likely to be satisfied for every one increase of agreement. With the use of prepared curriculum materials, this is marginally stronger at approximately 2.4 times more likely to be satisfied. It is interesting to note this variable was determined not to be significant in the Time-related models (Test #3). However, the two Time-related variables (Item 10 and Item 11) significant in the Test #3 models were not significant in the Test #4 models. In other words, when the Technology-related and Time-related variables were used in the same model, Item 15 replaced or displaced both Items 10 and 11. Table 33 summarizes the odds estimates in increased satisfaction of the significant time related variables using prepared curriculum materials.

Table 33. Odds of Increased Satisfaction Estimates of Time-Related Factors Items.

Item Number	Time Only Model (Test #3)	Technology and Time Model (Test #4)
6 - I have a higher workload when teaching an online course as compared to the traditional one.	0.476	0.388
10 - My students are very active in communicating with me regarding online course matters.	2.395	N/A
11 - I appreciate that I can access my online course any time it is convenient to me.	2.382	N/A
15 - It takes me longer to prepare for an online course on a weekly basis than for a face-to-face course.	N/A	2.362

The results of Test #4 indicate that the use of prepared curriculum materials are not a statistically significant variable affecting faculty satisfaction after accounting for the other technology and time variables. This is indicated by the use of prepared curriculum materials of having a p-value of 0.7797. This is consistent with the results of Test #2 and Test #3, whereby the use of prepared curriculum materials did not manifest itself as statistically significant. Table 34 summarizes the alpha level of prepared curriculum in each test. These alpha levels are not even close to a significance level of 0.05 or lower.

Table 34. Overall Odds of Increased Satisfaction Estimates.

Variable	Technology Only Model (Test #2)	Time Only Model (Test #3)	Technology and Time Model (Test #4)
Use of Prepared Curriculum Materials	0.8063	0.7797	0.8090

Prepared Curriculum Materials

The descriptive statistics presented at the beginning of this chapter display information regarding both the source and type of prepared curriculum materials along with faculty satisfaction. Because the use of prepared curriculum materials is the focus of this study, I wanted to investigate the significance of both the source and type of prepared curriculum materials. The following three sections discuss the findings based on my follow-up analysis of the inferential statistics regarding prepared curriculum and provide selected descriptive statistics to contextualize the data.

Sources of Prepared Curriculum Materials

The descriptive data indicated that faculty satisfaction among the six sources of prepared curriculum materials ranged from 78.9% to 93.8%. The descriptive statistics suggest that faculty who use prepared curriculum materials from sources of an instructional design department, online communities, and product manufacturers are the most satisfied.

A Pearson Correlation Coefficient table was generated using the six sources of prepared curriculum and faculty satisfaction. The data suggest there are no sources of prepared curriculum materials that were statistically significant at a p-value level of 0.05. The p-value for the instructional design department was calculated to be 0.1622, online communities had a p-value of 0.3101, and product manufacturers had a p-value of 0.4103, which are not statistically significant. The entire correlation matrix is displayed in Appendix Q. These data suggest that the source of prepared curriculum materials does not influence faculty satisfaction as much as the type of prepared curriculum materials.

Types of Prepared Curriculum Materials

The descriptive data indicated that faculty satisfaction among nine types of prepared curriculum materials ranged from 76.9% to 91.9%. The descriptive statistics suggest that faculty who use types of prepared curriculum materials such as tables/diagrams and graphics/images are the most satisfied.

A Pearson Correlation Coefficient matrix was generated using the nine types of prepared curriculum materials and faculty satisfaction. I examined the table and the data suggest there are three types of prepared curriculum materials that were statistically

significant at a p-value level of 0.05: graphics/images (0.0182), slides/presentations (0.0247), and tables/diagrams (0.0439).

These three types of prepared curriculum materials, which are statistically significant with faculty satisfaction, are also the three highest in faculty satisfaction levels as reported in the descriptive statistics. These data suggest that the inferential statistics support the findings of the descriptive statistics. However, the rank ordering of significance among the types of prepared curriculum materials are different. In the descriptive statistics section, the order of ranking by satisfaction level was tables/diagrams (91.9%), graphics/images (89.8%), and slides/presentations (88.9%), while in order of statistical significance, the rank ordering was graphics/images, slides/presentations, and then tables/diagrams.

The previous discussion in the descriptive statistics section of this chapter noted that perhaps there was a connection between tables/diagrams and graphics/images because they were both visual types of prepared curriculum material. However, in the previous section, the type of slides/presentations was not discussed. This inferential examination of the data brings slides/presentations into the discussion, which could be considered a type of visual media as well. I examined the interrelationship among these three variables, and the data suggest there are strong correlations. For discussion purposes, Table 35 displays only the statistically significant variables from the Pearson Correlation Coefficient matrix and faculty satisfaction. These data not only suggest that these variables are significant, but that they are also significantly related to the other variables. The entire correlation matrix is displayed in Appendix R.

Table 35. Statistically Significant Types of Prepared Curriculum Material.

	Slides/ Presentations	Graphics/ Images	Tables/ Diagrams	Faculty Satisfaction
Slides/ Presentations	1.00000	0.40311 <.0001	0.45715 <.0001	0.19328 0.0247
Graphics/ Images	0.40311 <.0001	1.00000	0.59694 <.0001	0.20310 0.0182
Tables/ Diagrams	0.45715 <.0001	0.59694 <.0001	1.00000	0.17376 0.0439
Faculty Satisfaction	0.19328 0.0247	0.20310 0.0182	0.17376 0.0439	1.00000

Overall Influence of Prepared Curriculum Materials

The previous discussion in the description statistics section suggests that prepared curriculum materials do influence faculty satisfaction. Recall the overarching research question for this study: *Do prepared curriculum materials influence community college faculty satisfaction when teaching online?* In order to answer this question directly, I generated a Pearson Correlation Coefficient matrix using only two elements from the instrument: the use of prepared curriculum materials and faculty satisfaction. Based on how the instrument captured faculty's use of prepared curriculum materials, it was easiest to calculate this by using a field that indicated if faculty did not use prepared curriculum materials. In this analysis of the data, the correlation between not using prepared curriculum materials and faculty satisfaction is -0.0573 and the corresponding p-value is 0.5091. The small negative correlation was expected: that faculty who do not use prepared curriculum materials are less satisfied with teaching online. However, the high p-value suggests this is not statistically significant. In other words, the data suggest that, when faculty use prepared curriculum materials, there is a slight increase in faculty satisfaction levels; however, there is not sufficient evidence in this dataset to state this conclusively. This matrix is displayed in Table 36.

Table 36. Use of Prepared Curriculum Materials and Faculty Satisfaction.

	Don't Use Prepared Curriculum Materials	Faculty Satisfaction
Don't Use Prepared Curriculum Materials	1.00000	-0.05731 0.5091
Faculty Satisfaction	-0.05731 0.5091	1.00000

Chapter Conclusion and Summary

This chapter responded to the study's research questions for this study. I presented the findings from both the descriptive statistical analysis and inferential statistical analysis performed on the dataset. A summary of key findings follows.

Key findings arising from the descriptive statistics suggest that prepared curriculum materials may influence faculty satisfaction. Overall, faculty satisfaction with the sources of prepared curriculum materials ranged from 79% to 94%. At first, these descriptive statistics suggest the *source* of prepared curriculum materials might influence satisfaction levels. However, examining the data using an inferential statistical analysis, the data paints a different picture. The Pearson Correlation Coefficient matrix indicated that no *source* of prepared curriculum materials were statistically significant.

In addition, faculty satisfaction with the *type* of prepared curriculum materials ranged from 77% to 92%. Unlike the last set of analyses, the *type* of prepared curriculum materials presented a different outlook on the data. When reviewing the descriptive statistics regarding the *type* of prepared curriculum materials, the data suggest that perhaps faculty satisfaction is influenced by the type of prepared curriculum materials.

This Pearson Correlation Coefficient matrix supports the descriptive data; that analysis found that visual media is significant.

Overall, the descriptive statistics suggest a connection between the use of prepared curriculum materials and faculty satisfaction in this dataset, which is suggested by the data that shows that satisfied faculty use prepared curriculum materials approximately four times more than faculty who are satisfied but do not use prepared curriculum materials.

Key findings from the logistic regression models suggest that the use of prepared curriculum materials does not influence faculty satisfaction. A factor analysis examination of the dataset did not support the reduction of variables into the five factors discussed in this study. Cronbach's alpha coefficient was calculated for the entire dataset, suggesting reliability of the instrument. Then Cronbach's alpha coefficient was also calculated for the five factors, to confirm the results of the factor analysis examination. Existence of the five factors was not present in this dataset, thus Research Question #1 remains unanswered.

Next, logistic regression models were used to examine prepared curriculum materials with the individual items that comprised the Technology-related and Time-related factors. The use of prepared curriculum materials was not a statistically significant in any test conducted in this study. Therefore the answer to Research Questions 2, 3, and 4 are the same: the use of prepared curriculum materials does not appear to be statistically significant variable affecting faculty satisfaction. However, the logistic regression models did indicate statistically significant variables of technology and

time that do affect faculty satisfaction. A synthesis of the findings presented in this chapter, implications, and suggestions for further research are discussed in Chapter 5.

CHAPTER V

SYNTHESIS OF FINDINGS, IMPLICATIONS, AND FURTHER RESEARCH

Introduction

I introduced the changes occurring within online education at the beginning of this study. The data report that college education is increasingly shifting away from traditional delivery modalities to online modalities. This growth of online education presents a new challenge for higher education particularly in terms of faculty work. That is, community college faculty are assigned to teach in this new modality of online instruction. I outlined, through reviewing the literature regarding online teaching, that this shift has resulted in two main frustrations when teaching online: frustrations with technology and frustrations with the time it takes to create and conduct an online class. While previous college faculty satisfaction studies inform us about gender, instructional autonomy, and compensation, and have even started an exploration in online education, an intervening variable of the use of prepared curriculum materials for online instruction raises a new inquiry.

Recently, several major textbook publishers have begun to develop online instructional resource curriculum for faculty. I theorized that prepared curriculum materials, such as that provided by textbook publishers, would increase faculty satisfaction when teaching online because of the potential to reduce technical hurdles and time requirements. In other words, I speculated and asked in this study whether the

prepared instructional resources, which I called "prepared curriculum materials," would help increase college faculty satisfaction with teaching. Currently, little published literature on faculty satisfaction when teaching online exists, with even less understanding of the impact that prepared curriculum materials might have on faculty satisfaction. Thus, my study's scholarly contribution to the field is to understand the influence of prepared curriculum materials on community college faculty satisfaction when teaching online.

To conduct this study, I modified an existing instrument and distributed it to faculty at seven community colleges, as discussed in Chapter 3. Findings regarding the descriptive statistics and inferential statistics were discussed in Chapter 4. The descriptive statistics suggest that prepared curriculum materials do affect faculty satisfaction while the inferential statistics suggest that prepared curriculum materials do not affect faculty satisfaction. These conflicting data are an indication of the complexities of understanding faculty satisfaction. In other words, given a particular set of variables, prepared curriculum materials may influence faculty's level of satisfaction. Given other variables, prepared curriculum materials may not influence satisfaction levels. This study has contributed to understanding community college faculty satisfaction because we now have information regarding how prepared curriculum materials affect community college faculty satisfaction levels. This study has shown that prepared curriculum materials are not standalone components that can be simply inserted into an online class. Rather, the use of prepared curriculum materials are a delicate thread that needs to be properly woven into the fabric of faculty's work to influence faculty satisfaction. The data in this study suggest that the use of prepared curriculum

material does not increase faculty satisfaction; it *enhances* the online experience for certain faculty in certain circumstances.

A discussion of how the data suggest that prepared curriculum materials enhance faculty satisfaction is presented in the following section, Synthesis of Findings. This section examines the key findings presented in this study and draws from the data important observations of how prepared curriculum materials should be woven into course development to increase faculty satisfaction. Next, implications of this study are discussed and should be considered by community college faculty and administrators for making wise decisions offering online courses. The final section of this chapter suggests ideas for future research opportunities.

Synthesis of Findings

This study on community college faculty satisfaction when teaching online offers five important, overarching observations. These observations lead to new understandings of community college faculty and their work in terms of teaching online.

Collaboration and Prepared Curriculum Materials

The data in this study suggest that faculty report higher levels of satisfaction when working in collaboration with others in terms of the use and development of prepared curriculum materials. Specifically, within the scope of prepared curriculum material options, satisfaction levels were highest when the source of prepared curriculum materials was identified with the college's instructional design department and with participation in online communities. By contrast, satisfaction levels were lower when

faculty identified the sources of prepared curriculum materials coming from book publishers and random Internet searches. These data suggest that satisfaction with prepared curriculum materials stems from a collaboration between faculty and others and that faculty are not highly satisfied with solely using prepackaged instructional material.

There are several plausible explanations for this range of satisfaction levels. The most evident is that online learning is often an impersonal experience where the student and faculty member are distanced through the use of technology. However, regarding satisfaction levels, it appears that to be truly satisfied teaching online, faculty desire a personal experience that the technology cannot provide. Thus, examining the source of prepared curriculum materials provide clues on how to increase satisfaction levels by fostering collaboration among faculty members.

Instructional design departments and online communities provide opportunities for faculty to collaborate with others. Instructional design departments are resources for faculty to develop course materials, and online communities provide connections to other faculty or professionals. The common link between these two sources of prepared curriculum materials is that they promote active participation on the part of the faculty member. In contrast to the above sources of prepared curriculum materials, the common link between book publishers and random Internet searches (two sources associated with the lowest levels of faculty satisfaction) is that they are static, providing no opportunity for the faculty to engage actively in the production of course materials. This suggests that faculty enjoy creating their own curriculum, but look to others for assistance and collaboration with that preparation. In other words, from a faculty perspective, the curriculum matures through the use of an instructional design department. One

conceivable explanation for this might be understood by examining the types of prepared curriculum materials that revealed higher satisfaction levels. These could be categorized as visual aids, such as tables, diagrams, graphics, images, and slide presentations. It would be logical to assume that faculty who enjoy developing their own curriculum seek the assistance of others to help generate these visual aids because they lack the technical expertise to do so on their own, and consequently they feel more satisfied when their curriculum is presented in the manner they desire. In contrast, prepared curriculum materials from a book publisher is most likely a copy of the same coursework replicated throughout higher education, providing little opportunity for faculty to make their unique contribution to the subject matter.

In Chapter 1, three major book publishers were reported as heavily investing in the development and distribution of online curriculum. The data in this study suggest that book publishers are the most utilized source of prepared curriculum materials at 88%. However, satisfaction with this source is among the lowest at 83.5%, only four points higher than random Internet searches. These sources of prepared curriculum materials are not conducive to allowing for the individual faculty to collaborate in the curriculum development process and might explain the low satisfaction with this source. As such, faculty may not be as satisfied using these sources of prepared curriculum materials as other sources. Furthermore, this implies that faculty should carefully evaluate the resources for their online class and perhaps choose prepared curriculum materials from a source other than textbook publishers.

Reconceptualize Faculty Workload

The data in this study suggest that higher education should consider reconceptualizing faculty workload. Faculty workload is currently conceptualized through the measurement of credits taught regardless of modality. This conception of workload does not include variations in preparation time for teaching in different modalities. The literature review in this study presented previous research that indicates teaching online does require more time than traditional face-to-face classes. One might assume that teaching only online would create an overwhelming burden for faculty. However, the data presented in this study suggest that faculty satisfaction levels increase as their workload is limited to only teaching online. Findings presented in Chapter 4 indicate that the majority of faculty teach in multiple modalities and yet full-time faculty who only teach online were the most satisfied.

In this study, most of the faculty had a teaching load that included a mix of teaching modalities, i.e. face-to-face, online, blended, or other. The faculty who taught a mix of modalities were overall less satisfied than the faculty who exclusively taught online. Based on the growth of online classes, it is logical to assume that faculty have had online classes added as additional workload rather than being hired as an "online teacher." Perhaps there are economies of scale, in a faculty productivity sense, that come from teaching in only one modality. For instance, a faculty member who teaches solely online might have greater opportunities to develop patterns and routines that provide for a stable foundation in the way they work, and that, in turn, supports an increase in satisfaction levels. By contrast, a teaching load where a faculty has to adjust their teaching style on a daily basis, such as preparing for an in-class lecture, then checking

their asynchronous weekly discussion, may be faced with mental shifts and routine changes leading to cognitive and work flow disruptions for that faculty member. In other words, the juggling of modalities does not appear to provide an environment for satisfaction.

Perhaps one way to increase faculty satisfaction is to design workloads for faculty to teach in only one modality. That practice would enable faculty to specialize and enhance their teaching in that modality rather than having to shift from one modality to the next without fully perfecting or stabilizing one delivery mode.

Of course, reconceptualizing faculty workload is not limited to only teaching in one modality. This reconceptualization should also include limiting the number of credits taught or the number of students taught. As the data also suggest, teaching too much, as observed when faculty taught overload, dramatically reduces satisfaction levels. A new model should recognize the necessity of increased preparation time when teaching online by limiting the amount of credits or students taught. This would give faculty the time to collaborate with others in developing prepared curriculum materials, which as stated previously, increases faculty satisfaction.

Variables Instead of Factors

The data in this study suggest the use of factors to examine faculty satisfaction might not be a reliable representation of multiple variables influencing faculty satisfaction. An analysis of the data suggests that there is too much variance among the variables to reduce them to a limited number of factors. Perhaps the complexities of faculty satisfaction are so great that they can only be examined by individual items and

cannot be explained by categories of items or factors. The initial framework of data analysis in this study was to replicate the Bolliger and Wasilik (2009) study by organizing the survey items into the factors of Student-related, Instructor-related, and Institutional-related. Then I planned on using these factors as variables in a logistic regression analysis. However, after examining the data using factor analysis, inspecting the Principal Component Factors, and calculating reliability using the Cronbach's alpha coefficient, I found something quite notable. None of the five factors reached a threshold of reliability in this dataset.

My study data suggest that Bolliger and Wasilik's findings (2009) cannot be confirmed with community college faculty who reside within one state's system. Bolliger and Wasilik (2009) conducted their study at a rural public research university. Traditionally, public research universities provide a range of baccalaureate and graduate programs and emphasize the importance of new research. This study focused on community colleges, which traditionally provide associate degrees that either prepare students for employment or transfer to a university. Thus, there is a difference in missions between public research universities and community colleges, which may explain the differences in faculty responses. In addition to mission differences, it should also be noted that faculty at community colleges usually carry a much higher teaching load than university faculty. Furthermore, recall from Chapter 1 that community colleges offer the majority of online coursework, thus placing an increased incentive to understand the satisfaction of these faculty.

A threshold of Cronbach's alpha coefficient of 0.70 was used in this study to prove the existence of factors. Interestingly, my data show that none of Bolliger and

Wasilik's three factors (Student-related, Instructor-related, and Institution-related) reached this threshold in my study. Even in their published report of their study, as presented in Table 28, two factors did not reach this threshold. Similarly, the literature reported frequently that time and technology played a role in college faculty satisfaction when teaching online. However, my data show that these two factors also failed to reach a threshold of Cronbach's alpha coefficient of 0.70. My data suggest there is too much variance among the variables to allow them to be organized into factors, hence the finding of low reliability. This implies that using factors to examine faculty satisfaction is not an effective analysis. In other words, the data suggest that researchers should examine the variables as individual ones recognizing that each variable represents its own unique qualities and interrelationships with other variables. As a result, concepts of faculty satisfaction might be too intricate or complicated to be reduced from variables into factors.

Variables of Technology and Time

As the previous section explains, inferential analysis of the dataset used in this study does not support the reduction of variables into factors of technology and time. However, this statement does not mean that issues of technology and time do not matter. Although the data do not support the construction of factors, the data suggest that the variables that represent technology and time are important in community college satisfaction. This observation can be drawn from both the descriptive and inferential statistics.

Logistic regression analysis of the dataset revealed six items to be statistically significant regarding faculty satisfaction. These six items demonstrate that issues of technology and time are important to faculty. Table 37 displays the six significant items found in this study.

Table 37. Variables with Statistical Significance.

Item Number	Question	Factor
2	The flexibility provided by the online environment is important to me.	Technology-related
6	I have a higher workload when teaching an online course as compared to the traditional one.	Time-related
10	My students are very active in communicating with me regarding online course matters.	Time-related
11	I appreciate that I can access my online course any time it is convenient to me.	Time-related
14	Online teaching is often frustrating because of technical problems.	Technology-related
15	It takes me longer to prepare for an online course on a weekly basis than for a face-to-face course.	Time-related

The logistic regression models indicate these six items were statistically significant in affecting faculty satisfaction. In other words, this means these items influence the prediction of faculty satisfaction beyond random chance. Two variables show that faculty are concerned about Technology-related items, and four variables show that faculty are concerned about Time-related items. Regarding technology issues, I interpret this data to suggest that faculty like the flexibility of teaching online, but become frustrated when the technology does not work effectively. Regarding time issues, faculty like teaching online because of active communication with students and

the convenience of teaching online, but are frustrated with the increased workload and additional time requirements to teach online.

In addition to the inferential analysis, the descriptive statistics also support that technology and time variables influence faculty satisfaction levels when teaching online. The mean score and standard deviation for each item on the instrument can be seen in Appendix L. I sorted the table by the mean score for each item, and the top five items are presented in Table 38.

Table 38. Items with the Highest Mean Score.

Item Number	Question	Mean Score (out of 4.0)
11	I appreciate that I can access my online course any time it is convenient to me.	3.61
20	It is valuable to me that my students can access my online course from any place in the world.	3.39
3	My online students are actively involved in their learning.	3.33
2	The flexibility provided by the online environment is important to me.	3.32
23	Technical problems do not discourage me from teaching online.	3.22

The data suggest that faculty derive satisfaction from teaching online because it is convenient, it provides educational access to students, it engages students in learning, and it provides flexibility. The data also suggest that satisfaction occurs when technical problems do not exist. As it turns out, all five of these are either a Technology-related or a Time-related item. This would indicate that of the many items on the instrument, the top five concerns of faculty are issues related to technology and time, and this supports the inferential findings previously described.

Two additional observations should be discussed regarding the data in Table 38. First, Item 2 and Item 11 emerge as important variables in both the descriptive and the inferential statistics. Item 2 is a Technology-related item, while Item 11 is a Time-related item. This suggests that issues of convenience and flexibility are very important to faculty satisfaction when teaching online. Secondly, the remaining three variables, Item 3, Item 20, and Item 23, are all Technology-related items. This further suggests that this evidence of these two issues of technology and time greatly influence faculty satisfaction when teaching online.

The data suggest that issues of technology and time definitely are important variables affecting faculty satisfaction. Factor analysis of the dataset in this study did not reveal a hypothetical Technology-related or a Time-related factor, which is a specific statistical examination. However, looking at the data through both descriptive and inferential statistics strongly suggests that issues of technology and time influence faculty satisfaction.

Academic Discipline

Finally, the data suggest that academic discipline does affect community college faculty satisfaction when teaching online. Previous studies have shown that discipline does not affect faculty satisfaction (Hagedorn, 2000; Sabharwal & Corley, 2008; Terpstra & Honoree, 2004; Wagoner, 2007). However, the almost 30% difference between the highest and lowest satisfied disciplines in this study raises some interesting questions.

The satisfaction levels reported by communication and language instructors are perplexing. Overall, in this study, female faculty were found to have a 15% higher

satisfaction level than male faculty. In addition, the body of literature also supports that generally female faculty are more satisfied teaching online than male faculty (Clark 1993; Woods, Baker, & Hopper, 2004). Given that the discipline category of communication and English had high population of female faculty, one would expect this group of faculty to report above-average satisfaction levels. However, the study data presents contradictory information by showing this group as having the lowest satisfaction levels among all discipline categories. The inversion of the normal and expected trends of faculty satisfaction in this discipline category suggest there is something unique about this discipline at community colleges that may not be present at a university level. Admittedly, there is nothing in the dataset to suggest a resolution of this contradiction. However, for purposes of discussion, I have developed five plausible explanations.

One plausible explanation for why communication and language faculty are less satisfied than expected could simply be the nature of discipline. It could be assumed that faculty who teach communication and language classes might enjoy teaching through classroom dialogue. The lack of oral dialogue in online classes might be frustrating and unnatural for these faculty. This suggests that discretion should be used by faculty and administrators when discussing faculty workload assignments.

Another explanation is that communication and language faculty may be pressured to teach online more than other faculty. Communication and language classes typically do not require any specialized equipment. Therefore, college administrators may see these "lecture only" courses as easily convertible to the online modality and subsequently pressure faculty to teach online. This pressure to teach online could decrease satisfaction if the faculty feel this material is better suited for a classroom

experience. This would suggest that there are tensions between college or system goals and faculty's ability to teach effectively.

A third explanation for the lower satisfaction levels could be that students are required to complete these courses even though students may not have an adequate skill level to complete this type of coursework online. Every college in this study had at least one English requirement for student graduation. Also, given the current higher educational environment, it is well known that a large percentage of incoming college students need remedial English. It is possible that a student does not possess the communication skills necessary to pass a communication class that requires the use of technology to facilitate the communication. This would suggest that students should be screened before being allowed to complete an online class.

A fourth plausible explanation for the lower than expected satisfaction level of communication and language faculty could be because they primarily teach general education courses to vocational students. Vocational students are focused on obtaining relevant job-related skills. These students may have the mindset that taking a general education class, such as an English class, is a distraction from the skill-building classes in their desired trade. I reviewed each college catalog of the seven colleges in this study, and counted the number of transfer programs and the number of vocational programs. While the number of students in each program is unknown, I assumed that the number of offerings would be a relative indication of the institution's focus. In this collection of seven community colleges, I counted 370 vocational programs (62.6%) and 221 transfer programs (37.4%). This cursory high-level scan suggests that the colleges in this study are focused more on vocational programs than transfer programs. This could mean that

students are not motivated to complete these communication and language courses, which could be frustrating to faculty, particularly in consideration of the additional time requirements needed to teach online.

The last plausible explanation for lower satisfaction levels among communication and language faculty is perhaps the result of system-level policies. All seven colleges in this study are members of the same system and compete with each other for funding and other resources. System-level initiatives or policies could mandate all colleges in the system to increase transferability of credits between institutions. A potential result of these initiatives or policies could mean that faculty would be forced to adjust their curriculum to conform to these transfer standards, which may increase faculty's frustrations. Since communication and language courses at these colleges are generally considered "general education" courses, this group of faculty may experience more frustration with these policies than other faculty, since typically general education classes are transferred the most between institutions.

The dataset does not provide any insight into answering why this group of faculty is not satisfied, neither was it designed to. That said, there must be unique variables in this discipline that generate a lower-than-expected satisfaction level. These unknown variables might also affect other discipline groups, even though a discrepancy was noticably present in this group. The previous five plausible explanations might be avenues for future research. Nonetheless, my data show that this group of faculty deviate from expected faculty satisfaction levels. This suggests that, for one reason or another, not all faculty, students, or disciplines might be appropriate for an online modality.

Implications

The findings of this study provide valuable insights into faculty satisfaction when teaching online. Based on these findings, key implications can be drawn. These implications should be considered as suggestions for faculty and administrators at community colleges when planning for online work assignments for faculty.

The first implication is to monitor teaching assignments and load. The majority of the faculty appear to have a mix of teaching face-to-face, online, and hybrid classes. However, the data indicate that, as online workload increases, reported levels of satisfaction also increase. Perhaps teaching in one modality allows faculty to establish comfortable teaching patterns and routines, whereas teaching in several different modalities could create disruptions for faculty, constantly changing routines for the different pedagogical environments. Faculty and administrators should consider teaching assignments that focus on teaching in one pedagogical modality to allow for faculty to establish patterns, routines, and expertise while limiting the disruptions of changing modalities.

The second implication of this study is for community colleges to support the faculty who teach online with an instructional design department. As more classes are being pushed to be taught online, the greater the need to help bridge the transition from face-to-face to online course development. Literature presented in Chapter 2 strongly suggests faculty desire this type of help, and the data presented in Chapter 4 indicate that satisfaction increases when faculty use the instruction design department. The data in this study would suggest that one area of particular focus for instructional design support

would be on the development of visual aids. Another area of focus, for the instructional design support, as suggested by the data, would be faculty with fewer than five years' teaching experience online. Having a local support service focused on helping faculty build online classes might increase levels of satisfaction as well as facilitate the introduction of new faculty to a new teaching modality. Community college administrators should recognize the importance of providing adequate resources to fund and staff an instructional design department on campus. This is supported both by the analysis of this dataset and existing literature (Schifter, 2000; Phillips et al., 2007; Chapman, 2009; Tabata & Johnsrud, 2008).

The third implication of this study is to recognize that levels of faculty satisfaction when teaching online could vary among disciplines at community colleges. Interpretation of the data would suggest that faculty and administrators should be thoughtful about which courses colleges should offer in an online format. Student demands for online courses might require lengthy discussions between faculty and administrators to develop and conduct certain online courses purposefully. It seems that online coursework is a good modality for some courses, and in some cases it may be a superior modality than a traditional face-to-face delivery. However, it is important to consider the strengths and weaknesses of offering courses on a course-by-course basis in an online modality. Rather assuming that every online class is equal with face-to-face classes might not be accurate with respect to variables of faculty, students, and discipline.

Future Research

This study offered legitimate insight into faculty satisfaction when teaching online and using prepared curriculum materials. However, some questions still remain, and the results of this study have raised additional questions that provide opportunities for further research.

First, as recognized as a limitation of this study, online classes can be conducted in a synchronous or asynchronous format, or a combination of both. Yet, this study did not take into consideration these different formats of online classes. Since synchronous online classes, by definition, require more active participation by the faculty and student, perhaps there is a potential of synchronous online classes' having a different level of faculty satisfaction than asynchronous online classes. A future study could investigate the format of online classes and see if there is distinction with regard to faculty satisfaction.

Second, one area of additional research would be to expand the study to a larger geographic region or a national survey. This study was limited to seven community colleges in one college system in the Midwest and only had 135 useful participant responses. Additional research should be conducted to include more participants to strengthen the reliability of the instrument and see if the factors of technology or time emerge with more participants. Also, extending the survey to faculty at more colleges might yield more clues to understanding the influence of prepared curriculum materials.

Third, further research should be conducted to see if exclusively teaching in one modality increases faculty satisfaction as the data from this study suggest. The data in this study show that faculty who teach online are more satisfied as their teaching load is limited to teaching only online. The faculty in this study all use some form of online

teaching methods; faculty who teach exclusively in a face-to-face format were not included in this study. Comparisons of solely face-to-face faculty against solely online faculty, with and without the use of prepared curriculum materials, should be examined to see if there are underlying pedagogical issues related to teaching in different modalities that affect faculty satisfaction.

Fourth, the descriptive data analysis supports some connections between the use of prepared curriculum materials and faculty satisfaction. From this analysis, we can draw the conclusion that prepared curriculum materials do influence a part of faculty satisfaction; however it warrants further study to determine/understand why and how prepared curriculum materials affects the subpopulation categories. This study found a wide range in levels of faculty satisfaction among different academic disciplines. More research should be conducted focused on faculty satisfaction with respect to their disciplines to understand how important this variable is at a community college level. A particular item of interest would be to examine the amount of prepared curriculum materials that are available to each discipline category.

A fifth area would be to understand further faculty satisfaction in relationship to the mission and focus of the community college. Perhaps there is a greater divide among community college faculty who support two very different attainment goals for students. Community colleges enroll students in academic (transfer) programs and vocational (employment) programs. Further research could reveal important information that could more adequately guide decisions regarding faculty satisfaction and online course offerings. One area of particular focus would be to understand the relationships among

the different disciplines at community colleges as well as how the disciplines develop online coursework.

Lastly, further research should be conducted to understand the dynamics between faculty satisfaction and the relationship between geography and size of the college. The data in this study show that faculty at rural colleges report higher satisfaction when teaching online when compared to metropolitan colleges. Because the rural colleges are smaller, both in number of faculty and students, it is undetermined if the higher satisfaction levels are because of the size of the institution or if, because of the rural nature, there is a stronger culture that supports distance education. This is an important issue to understand, given the open access that online learning presents. It is possible to enroll in an online class in a college from any geographic area. This raises a whole new set of implications for the mission of community colleges on how to respond to growing online enrollment outside of its traditional geographic footprint. The direction of growth could also affect the type of prepared curriculum materials that are most effective to meet at institution's goals by choosing which courses or programs to offer online.

Chapter Summary

This chapter concludes this study by presenting a synthesis of findings, implications from this study, and areas recommended for further study. This study produced several findings, including that prepared curriculum materials do affect faculty satisfaction. This study also concludes that issues of technology and time do affect faculty satisfaction. Through inferential statistics, the use of prepared curriculum materials was determined not to be a statistically significant variable influencing faculty

satisfaction. However, examining the descriptive statistics revealed some noticeable observations. The college where faculty teach, which discipline they teach, how much they teach online, and how they construct an online class all affect faculty satisfaction. This chapter also discussed three key implications of this study for faculty and administrators at community colleges to consider. The implications suggest monitoring teaching load and assignments, supporting faculty with instructional design help, and carefully choosing which discipline subjects should be delivered online. Finally, four areas of additional research were suggested. These include expanding the study to a larger population, investigating the effects of teaching exclusively in one modality, understanding the nature and roles of teaching different disciplines at community colleges in an online modality, and uncovering the relationship between the geography and size of a community college and levels of faculty satisfaction.

APPENDICES

Appendix A
Permission to Reproduce Copy Written Material from I. Elaine Allen, PhD

Subject: RE: Reprinting request
From: "Allen, I. Elaine" <allenie@babson.edu>
Date: 8/6/2012 5:28 PM
To: "ryan@brovold.com" <ryan@brovold.com>
CC: "jseaman@seagullhaven.com" <jseaman@seagullhaven.com>

Feel free to site and use the information in our reports giving attribution in the references or footnotes as needed. And best of luck on your dissertation.

-Elaine Allen

"There is hardly ever a good reason to invert a matrix." - John D. Cook, The Endeavour

I. Elaine Allen, Phd

Visiting Professor of Quantitative Biosciences & Biostatistics \ UCSF
Emeritus Professor of Statistics & Entrepreneurship \ Babson College
Co-Director, Babson Survey Research Group \ Babson College
P: 508-667-7737 \ allenie@babson.edu
Personal: Twitter \ LinkedIn \ Facebook \ Profile

-----Original Message-----

From: Ryan Brovold [mailto:ryan@brovold.com]
Sent: Monday, August 06, 2012 4:22 PM
To: Babson Survey Research Group
Subject: Reprinting request

Greetings.

I am a doctoral student at the University of North Dakota in the Department of Educational Leadership. I am working on my dissertation entitled "Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter?" In short, I am studying variables that influence faculty satisfaction teaching online, with particular attention to prepared curriculum.

I am writing to request permission to reproduce some of your copy written material to be included in my dissertation. Specifically, I have identified two tables that are of interest to me:

Request 1: From Allen, I. E., & Seaman, J. (2006). Making the grade: Online education in the United States, 2006. Needham, MA: Babson Survey Research Group.

- I would like to use the data presented in the table on page 6 entitled "Students taking at least one online course - Fall 2005" and adapt the data to be presented as a bar graph.

Request 2: From Allen, I. E., & Seaman, J. (2011). Going the distance: Online education in the United States 2011. Needham, MA: Babson Survey Research Group.

- I would like to use the data presented in the table on page 11 entitled "Total and online enrollment in degree-granting postsecondary institutions - Fall 2002 through fall 2010" and adapt the data to be presented as two line charts. One chart would include total enrollment and online enrollment. The other chart would only display the annual growth of online enrollment.

Thank you for your time and consideration. If you have any questions, please feel free to contact me.

Sincerely,

Ryan Brovold

Appendix B
Permission to Reproduce Copy Written Material from Janet Moore, PhD

Subject: RE: [Publications] Reprint graphic from publication request
From: jmoore@sloanconsortium.org
Date: 8/6/2012 4:23 PM
To: ryan@brovold.com
CC: publication@sloanconsortium.org, info@sloanconsortium.org

Dear Ryan Brovold,

You have permission to reproduce the image. Or since the image has been updated to reflect the change in emphasis from institutional commitment and cost effectiveness to scale, you may also use the newer version at http://sloanconsortium.org/effective. Below is the rationale for the pillar name change.

Please let us know when your dissertation is published?

Best wishes,

Janet

Janet C. Moore, Ph.D.
Chief Knowledge Officer
jmoore@sloanconsortium.org
401-749-2877
janetcmoore (Skype ID)
781-583-7578 (SKYPE #)

http://sloanconsortium.org/publications/view/v7n7/viewv7n7.htm

From "Cost Effectiveness and Institutional Commitment" to "Scale"

If we want things to stay the same, things must change. ~Lampedusal

Scale is the new name for the quality pillar known as "cost effectiveness and institutional commitment." Keeping scale front and center as a quality indicator emphasizes more clearly the reason Sloan-C exists: "the whole point...is to increase access to education to a pool of learners who currently do not have this access, and so we need to be able to assess whether increased access is, in fact, being provided."2

Scale is not to be confused with rampant growth. Rather, strategic decisions about scale should guide growth in ways that are intrinsic to the distinctive institutional mission and vision, a "disciplined approach" to integrating online programs, pedagogy and faculty with "the campus mission and strategic plan... [with] institutional support...apparent at all levels, from department heads to deans to provosts to presidents to trustees."3 Planning for scale is planning for capacity enrollment such that tuition is affordable yet sufficient to insure quality, innovation and return on investment.

Although the pillar name has changed, many of its aspects are the same. Scale includes the quality metrics associated with cost effectiveness and institutional commitment: infrastructure, methodologies (for conserving

costs, resources, time, and effort), partnerships, marketing, localness and global reach.

Scale is also intended to encourage going beyond experiments and pilots, towards a fully institutionalized embodiment. But in terms of absolute numbers, we see scale as related to the size of the basic institution and its growth aspirations. Thus, scaled up versions at a major state institution might be very large in absolute terms, compared to those at a smaller institution, but both may very well have demonstrated successful scale-up. There will also be cases, where the smaller one demonstrates even greater success.

Demands for institutional accountability and transparency are converging with demographic shifts and the need for energy efficiencies. The pool of learners includes minorities, disabled learners, teleworkers, and those who can't afford to travel to campus. A more conscious focus on scale will help us provide for learners who will have access only when institutions take them into account and scale to provide quality education online.

1 Quoted from The Leopard in Friedman, T. Hot, Flat, and Crowded: Why We Need a Green Revolution--and How It Can Renew America. Farrar, Strauss and Giroux, New York: 2008.

2 Miller, G. E. An Interview with Frank Mayadas of the Alfred P. Sloan Foundation. The American Journal of Distance Education 11(3): 1997. Reprinted with permission at http://www.sloan-c.org/resources/mayadas.asp.

3 Oakley, B. and Moloney, J. Scaling Online Education: Increasing Access to Higher Education. Journal of Asynchronous Learning Networks 10(3): July 2006. http://www.sloan-c.org/publications/jaln/v10n3/v10n3_2moloney.asp

-----Original Message-----
From: ryan@brovold.com
Sent: Monday, August 6, 2012 4:59pm
To: publication@sloanconsortium.org, info@sloanconsortium.org
Subject: [Publications] Reprint graphic from publication request

Ryan Brovold sent a message using the contact form at http://sloanconsortium.org/contact.

I am a doctoral student at the University of North Dakota in the Department of Educational Leadership. I am working on my dissertation entitled "Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter?" In short, I am studying variables that influence faculty satisfaction teaching online, with particular attention to prepared curriculum.

I am writing to request permission to reproduce some of your copy written material to be included in my dissertation. Specifically, I would like to

reprint Figure 1 on page 3 of the 2005 article titled "The Sloan Consortium Quality Framework and the Five Pillars" by Janet Moore.

Thank you for your time and consideration. If you have any questions, please feel free to contact me.

Sincerely,

Ryan Brovold

Appendix C
Permission to Reproduce Copy Written Material from Kay Rockwell, Ph.D.

Subject: RE: Reprint permission request
From: "S. Kay Rockwell" <krockwell1@unl.edu>
Date: 8/6/2012 5:19 PM
To: "ryan@brovold.com" <ryan@brovold.com>

Hello Ryan,

It is always nice to receive requests on publications. I'm glad it is useful to you. It is fine with me if you want to use it.

However, since the article is published in the Online Journal of Distance Learning Administration, you will need to contact the journal to get their permission.

May you dissertation go well.

Sincerely, Kay Rockwell

-----Original Message-----
From: Ryan Brovold [mailto:ryan@brovold.com]
Sent: Monday, August 06, 2012 3:36 PM
To: S. Kay Rockwell
Subject: Reprint permission request

Hello Dr. Rockwell,

I am a doctoral student at the University of North Dakota in the Department of Educational Leadership. I am working on my dissertation entitled "Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter?" In short, I am studying variables that influence faculty satisfaction teaching online, with particular attention to prepared curriculum.

I am writing to request permission to reproduce a table in an article you published in 1999. The title of the article was "Incentives and obstacles influencing higher education faculty and administrators to teach via distance." It was published in the Online Journal of Distance Learning Administration. Specifically, I would like to republish Table 2 - Incentives and Obstacles for Teaching Via Distance, found on page 5 of the article.

Thank you for your time and consideration. If you have any questions, please feel free to contact me.

Sincerely,

Ryan Brovold

Appendix D
Permission to Reproduce Copy Written Material from Curtis Bonk, Ph.D.

Subject: RE: Reprint request
From: "Bonk, Curtis Jay" <cjbonk@indiana.edu>
Date: 8/6/2012 4:52 PM
To: "ryan@brovold.com" <ryan@brovold.com>

Sure thing Ryan. Best of luck!

curt

-----Original Message-----
From: Ryan Brovold [mailto:ryan@brovold.com]
Sent: Monday, August 06, 2012 4:51 PM
To: Bonk, Curtis Jay
Subject: Reprint request

Hello Dr. Bonk,

I am a doctoral student at the University of North Dakota in the Department of Educational Leadership. I am working on my dissertation entitled "Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter?" In short, I am studying variables that influence faculty satisfaction teaching online, with particular attention to prepared curriculum.

I am writing to request permission to reproduce some of your copy written material to be included in my dissertation. Specifically, I would like to reproduce Figure 17 on page 35 of your 2001 report titled "Online teaching in an online world."

Thank you for your time and consideration. If you have any questions, please feel free to contact me.

Sincerely,

Ryan Brovold

Appendix E
Permission to Use and Modify the Online Faculty Satisfaction Survey
from Doris Bolliger, Ph.D.

-----Original Message-----
From: Doris U Bolliger [mailto:dorisbolliger@gmail.com]
Sent: Monday, January 18, 2010 02:58 PM
To: ryan@brovold.com
Subject: Re: Research Article

Dear Ryan,

Thank you for contacting me and for your interest in my work. I am attaching the faculty satisfaction questionnaire for your use. You have my permission to utilize or modify it according to your needs.

Sincerely,

Dr. Bolliger
--
Doris U. Bolliger, Ed.D.
Assistant Professor of Instructional Technology
College of Education
Department of Professional Studies
University of Wyoming
1000 E. University Avenue, ED 322
Laramie, WY 82071
Ph. 307-766-2167 dorisbolliger@gmail.com

On Tue, Jan 12, 2010 at 11:00 AM, <ryan@brovold.com> wrote:
Professor Bolliger,

Greetings. I read your article published last spring titled "Factors influencing faculty satisfaction with online teaching and learning in higher education." I like the article as I have an interest in the subject matter.

I would like to use your work as a foundation and conduct additional research on faculty satisfaction. I am a doctoral student in educational leadership and my dissertation subject is on faculty satisfaction teaching prepared or "canned" online curriculum. To that end, would you allow me to see the actual survey instrument you used in your study? If it fit my research, would there be a possibility for me to use your instrument in my study?

Thank you for your time and consideration. I would be happy to visit with you at your convenience.

Sincerely,

Ryan Brovold

Appendix F
Study Instrument

1. The level of my interactions with students in the online course is higher than in a traditional face-to-face class.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree
   - N/A

2. The flexibility provided by the online environment is important to me.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree
   - N/A

3. My online students are actively involved in their learning.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree
   - N/A

4. I incorporate fewer resources when teaching an online course as compared to traditional teaching.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree
   - N/A

5. The technology I used for online teaching is reliable.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree
   - N/A

6. I have a higher workload when teaching an online course as compared to the traditional one.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

7. I miss face-to-face contact with students when teaching online.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

8. I do not have any problems controlling my students in the online environment.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

9. I look forward to teaching my next online course.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

10. My students are very active in communicating with me regarding online course matters.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

11. I appreciate that I can access my online course any time it is convenient to me.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

12. My online students are more enthusiastic about learning than their traditional counterparts.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

13. I have to be more creative in terms of the resources used for the online course.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

14. Online teaching is often frustrating because of technical problems.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

15. It takes me longer to prepare for an online course on a weekly basis than for a face-to-face course.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

16. I am satisfied with the use of communication tools in the online environment (e.g., chat rooms, threaded discussions, etc.).
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

17. I am able to provide better feedback to my online students on their performance in the course.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

18. I am more satisfied with teaching online as compared to other delivery methods.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

19. My online students are somewhat passive when it comes to contacting the instructor regarding course related matters.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

20. It is valuable to me that my students can access my online course from any place in the world.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

21. The participation level of my students in the class discussions in the online setting is lower than in the traditional one.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

22. My students use a wider range of resources in the online setting than in the traditional one.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

23. Technical problems do not discourage me from teaching online.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

24. I receive fair compensation for online teaching.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

25. Not meeting my online students face-to-face prevents me from knowing them as well as my on-site students.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

26. I am concerned about receiving lower course evaluations in the online course as compared to the traditional one.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

27. Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

28. It is more difficult for me to motivate my students in online environment than in the traditional setting.
    - Strongly Agree
    - Agree
    - Disagree
    - Strongly Disagree
    - N/A

29. Are you satisfied teaching online?
    - Yes
    - No

30. What is your employment status?
    - Full-time
    - Part-time/Adjunct

31. What is your discipline (i.e. Accounting, English, Medical Terminology, etc)?

32. Select the range of credits you teach in a typical year.

	Face-to-face	Online	Hybrid/Blended	Other
Academic Year				

33. Select the range of students you teach in a typical year.

	Face-to-face	Online	Hybrid/Blended	Other
Academic Year				

34. Indicate the type(s) of prepared curriculum you use when you teach online.

☐ Quizzes/Test Banks	☐ Homework
☐ Slides/Presentations	☐ Graphics/Images
☐ Interactive Labs	☐ Tables/Diagrams
☐ Reading Assignments	☐ Other
☐ Handouts	☐ I don't use prepared curriculum.

35. Indicate the source(s) of the prepared curriculum you use.

☐ Book publisher	☐ Random Internet Searches
☐ Product Manufacturer	☐ Other
☐ Online Community	☐ I don't use prepared curriculum.
☐ College's Instructional Design Department	

36. What are you major frustrations about teaching online?

37. What do you like the most about teaching online?

38. How many years have you taught courses online?

39. What is your age?

40. What is your gender?
    - Male
    - Female
    - Prefer not to answer

41. Is English you native language?
    - Yes
    - No
    - Prefer not to answer

Appendix G
Institutional Review Board Permission to Conduct the Pilot Study

UNIVERSITY OF UND NORTH DAKOTA

INSTITUTIONAL REVIEW BOARD
c/o RESEARCH DEVELOPMENT AND COMPLIANCE
DIVISION OF RESEARCH
TWAMLEY HALL ROOM 106
264 CENTENNIAL DRIVE STOP 7134
GRAND FORKS ND 58202-7134
(701) 777-4279
FAX (701) 777-6708
www.und.edu/dept/rdc/regucomm/IRB

November 10, 2011

Ryan Brovold
1953 141st Avenue
Clear Lake, MN 55319

Dear Mr. Brovold:

We are pleased to inform you that your project titled, "Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter? - Pilot Study" (IRB-201111-104) has been reviewed and approved by the University of North Dakota Institutional Review Board (IRB). The expiration date of this approval is November 3, 2012. Your project cannot continue beyond this date without an approved Research Project Review and Progress Report.

As principal investigator for a study involving human participants, you assume certain responsibilities to the University of North Dakota and the UND IRB. Specifically, an unanticipated problem or adverse event occurring in the course of the research project must be reported within 5 days to the IRB Chairperson or the IRB office by submitting an Unanticipated Problem/Adverse Event Form. Any changes to or departures from the Protocol or Consent Forms must receive IRB approval prior to being implemented (except where necessary to eliminate apparent immediate hazards to the subjects or others.)

All Full Board and Expedited proposals must be reviewed at least once a year. Approximately ten months from your initial review date, you will receive a letter stating that approval of your project is about to expire. If a complete Research Project Review and Progress Report is not received as scheduled, your project will be terminated, and you must stop all research procedures, recruitment, enrollment, interventions, data collection, and data analysis. The IRB will not accept future research projects from you until research is current. In order to avoid a discontinuation of IRB approval and possible suspension of your research, the Research Project Review and Progress Report must be returned to the IRB office at least six weeks before the expiration date listed above. If your research, including data analysis, is completed before the expiration date, you must submit a Research Project Termination form to the IRB office so your file can be closed. The required forms are available on the IRB website.

If you have any questions or concerns, please feel free to call me at (701) 777-4279 or e-mail michelle.bowles@research.und.edu.

Sincerely,

Michelle L. Bowles, M.P.A., CIP
IRB Coordinator

MLB/jle

Enclosures

REPORT OF ACTION: EXEMPT/EXPEDITED REVIEW

University of North Dakota Institutional Review Board

Date: 11/1/2011 **Project Number:** IRB-201111-104

Principal Investigator: Brovold, Ryan

Department: Educational Leadership

Project Title: Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter? - Pilot Study

The above referenced project was reviewed by a designated member for the University's Institutional Review Board on November 4, 2011 and the following action was taken:

☐ Project approved. **Expedited Review** Category No. _____
Next scheduled review must be before: _____

☐ **Copies of the attached consent form with the IRB approval stamp dated _____ must be used in obtaining consent for this study.**

☑ Project approved. Expedited Category No. Seven (7)
This approval is valid until November 3, 2012 as long as approved procedures are followed. No periodic review scheduled unless so stated in the Remarks Section.

☐ **Copies of the attached consent form with the IRB approval stamp dated _____ must be used in obtaining consent for this study.**

☐ Minor modifications required. The required corrections/additions must be submitted to RDC for review and approval. **This study may NOT be started UNTIL final IRB approval has been received.**

☐ Project approval **deferred. This study may not be started until final IRB approval has been received.**
(See Remarks Section for further information.)

☐ Disapproved claim of exemption. This project requires Expedited or Full Board review. The Human Subjects Review Form must be filled out and submitted to the IRB for review.

☐ Proposed project is not human subject research and does not require IRB review.
☐ Not Research ☐ Not Human Subject

PLEASE NOTE: Requested revisions for student proposals MUST include adviser's signature. All revisions MUST be highlighted.

☒ Education Requirements Completed. (Project cannot be started until IRB education requirements are met.)

Appendix H
Institutional Review Board Permission to Conduct the Study

UNIVERSITY OF UND NORTH DAKOTA

INSTITUTIONAL REVIEW BOARD
c/o RESEARCH DEVELOPMENT AND COMPLIANCE
DIVISION OF RESEARCH
TWAMLEY HALL ROOM 106
264 CENTENNIAL DRIVE STOP 7134
GRAND FORKS ND 58202-7134
(701) 777-4279
FAX (701) 777-6708
http://und.edu/research/research-economic-development/institutional-review-board/

February 2, 2012

Ryan Brovold
1953 141st Avenue
Clear Lake, MN 55319

Dear Mr. Brovold:

We are pleased to inform you that your project titled, "Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter?" (IRB-201201-233) has been reviewed and approved by the University of North Dakota Institutional Review Board (IRB). The expiration date of this approval is January 29, 2013. Your project cannot continue beyond this date without an approved Research Project Review and Progress Report.

As principal investigator for a study involving human participants, you assume certain responsibilities to the University of North Dakota and the UND IRB. Specifically, an unanticipated problem or adverse event occurring in the course of the research project must be reported within 5 days to the IRB Chairperson or the IRB office by submitting an Unanticipated Problem/Adverse Event Form. Any changes to or departures from the Protocol or Consent Forms must receive IRB approval prior to being implemented (except where necessary to eliminate apparent immediate hazards to the subjects or others.)

All Full Board and Expedited proposals must be reviewed at least once a year. Approximately ten months from your initial review date, you will receive a letter stating that approval of your project is about to expire. If a complete Research Project Review and Progress Report is not received as scheduled, your project will be terminated, and you must stop all research procedures, recruitment, enrollment, interventions, data collection, and data analysis. The IRB will not accept future research projects from you until research is current. In order to avoid a discontinuation of IRB approval and possible suspension of your research, the Research Project Review and Progress Report must be returned to the IRB office at least six weeks before the expiration date listed above. If your research, including data analysis, is completed before the expiration date, you must submit a Research Project Termination form to the IRB office so your file can be closed. The required forms are available on the IRB website.

If you have any questions or concerns, please feel free to call me at (701) 777-4279 or e-mail michelle.bowles@research.und.edu.

Sincerely,

Michelle L. Bowles, M.P.A., CIP
IRB Coordinator

MLB/jle

Enclosures

INFORMED CONSENT

TITLE: Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter?

PROJECT DIRECTOR: Ryan Brovold

PHONE # 612-567-3642

DEPARTMENT: Educational Leadership

A person who is to participate in this research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information that is important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate.

You are invited to be in a research study regarding faculty satisfaction teaching. You received this invitation because your college has identified you as a faculty member who teaches online.

The purpose of this research study is to understand the effects that prepared curriculum has on faculty satisfaction.

Faculty from six community colleges in the upper Midwest will take part in this study.

The survey contains 40 questions and will take approximately 15-20 minutes to complete.

If you choose to participate in the study, click the button below acknowledging that you have read and understood this informed consent form. After you click the button, a new web page will appear with a list of questions. Read each question carefully and mark your response to the question. You may choose to not answer any question.

You may experience frustration that is often experienced when completing surveys. Some questions may be of a sensitive nature, and you may therefore become upset as a result. However, such risks are not viewed as being in excess of "minimal risk"

If, however, you become upset by questions, you may stop at any time or choose not to answer a question. If you would like to talk to someone about your feelings about this study, you are encouraged to contact a professional counseling service in your area.

You will not benefit personally from being in this study. However, I hope that in the future, other people might benefit from this study because faculty satisfaction is an important issue.

You will not have any costs for being in this research study.

You will not be paid for being in this research study.

The University of North Dakota and the researcher are receiving no payments from other agencies, organizations, or companies to conduct this research study.

The records of this study will be kept private to the extent permitted by law. In any report about this study that might be published, you will not be identified. Your study record may be reviewed by Government agencies, and the University of North Dakota Institutional Review Board.

Any information that is obtained in this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of keeping the data secure and only allowing the researcher access to the data.

If I write a report or article about this study, I will describe the study results in a summarized manner so that you cannot be identified. The information might be released to your institution for purposes of further trying to understand and improve faculty satisfaction.

Your participation is voluntary. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. Your decision whether or not to participate will not affect your current or future relations with the University of North Dakota.

The researcher conducting this study is Ryan Brovold. You may ask any questions you have before or after the study. You can contact the researcher at 612-567-3642, or Dr. Jeffrey Sun at 701-777-3452.

If you have questions regarding your rights as a research subject, or if you have any concerns or complaints about the research, you may contact the University of North Dakota Institutional Review Board at (701) 777-4279. Please call this number if you cannot reach research staff, or you wish to talk with someone else.

By clicking the "I Agree" button below indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study.

REPORT OF ACTION: EXEMPT/EXPEDITED REVIEW

University of North Dakota Institutional Review Board

Date: 1/23/2012 **Project Number:** IRB-201201-233

Principal Investigator: Brovold, Ryan

Department: Educational Leadership

Project Title: Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter?

The above referenced project was reviewed by a designated member for the University's Institutional Review Board on January 30, 2012 and the following action was taken:

☒ Project approved. **Expedited Review** Category No. 7
Next scheduled review must be before: January 29, 2013

☒ **Copies of the attached consent form with the IRB approval stamp dated January 30, 2012 must be used in obtaining consent for this study.**

☐ Project approved. **Exempt Review** Category No. _____
This approval is valid until _____ as long as approved procedures are followed. No periodic review scheduled unless so stated in the Remarks Section.

☐ **Copies of the attached consent form with the IRB approval stamp dated _____ must be used in obtaining consent for this study.**

☐ Minor modifications required. The required corrections/additions must be submitted to RDC for review and approval. **This study may NOT be started UNTIL final IRB approval has been received.**

☐ Project approval **deferred. This study may not be started until final IRB approval has been received.**
(See Remarks Section for further information.)

☐ Disapproved claim of exemption. This project requires Expedited or Full Board review. The Human Subjects Review Form must be filled out and submitted to the IRB for review.

☐ Proposed project is not human subject research and does not require IRB review.
☐ Not Research ☐ Not Human Subject

PLEASE NOTE: Requested revisions for student proposals MUST include adviser's signature. All revisions MUST be highlighted.

☒ Education Requirements Completed. (Project cannot be started until IRB education requirements are met.)

cc: Dr. Jeffrey Sun (no attach.)

Signature of Designated IRB Member
UND's Institutional Review Board

1/30/2012
Date

If the proposed project (clinical medical) is to be part of a research activity funded by a Federal Agency, a special assurance statement or a completed 310 Form may be required. Contact RDC to obtain the required documents.

(Revised 10/2006)

Appendix I
Institutional Review Board Permission to Modify the Study Protocol

REPORT OF ACTION: PROTOCOL CHANGE
University of North Dakota Institutional Review Board

Date: 3/7/2012 **Project Number:** IRB-201201-233

Principal Investigator: Brovold, Ryan

Department: Educational Leadership

Project Title: Faculty Satisfaction Teaching Online: Does Using Prepared Curriculum Matter?

The above referenced project was reviewed by a Designated Member for the University's Institutional Review Board on March 19, 2012 and the following action was taken:

☒ Protocol Change approved. **Expedited Review** Category No. 7
Next scheduled review must be before: January 29, 2013

☐ **Copies of the attached consent form with the IRB approval stamp dated _____ must be used in obtaining consent for this study.**

☐ Protocol Change approved. **Exempt Review** Category No. _____
This approval is valid until _____ as long as approved procedures are followed.
No periodic review scheduled unless so stated in the Remarks Section.

☐ **Copies of the attached consent form with the IRB approval stamp dated _____ must be used in obtaining consent for this study.**

☐ Minor modifications required. The required corrections/additions must be submitted to RDC for review and approval. **This study may NOT be started UNTIL final IRB approval has been received.**
(See Remarks Section for further information.)

☐ Protocol Change approval **deferred. This study may not be started until final IRB approval has been received.**
(See Remarks Section for further information.)

☐ Protocol Change **disapproved. This study may not be started until final IRB approval has been received.**

REMARKS: Any unanticipated problem or adverse occurrence in the course of the research project must be reported within 5 days to the IRB Chairperson or RDC by submitting an Unanticipated Problem/Adverse Event Form.

Any changes to the Protocol or Consent Forms must receive IRB approval prior to being implemented (except where necessary to eliminate apparent immediate hazards to the subjects or others).

PLEASE NOTE: Requested revisions for student proposals MUST include adviser's signature. All revisions MUST be highlighted.

☒ Education Requirements Completed. (Project cannot be started until IRB education requirements are met.)

WCJP 3/19/2012
Signature of Designated IRB Member Date
UND's Institutional Review Board

cc: Dr. Jeffrey Sun (no attach.)

If the proposed project (clinical medical) is to be part of a research activity funded by a Federal Agency, a special assurance statement or a completed 310 Form may be required. Contact RDC to obtain the required documents.

(Revised 10/2006)

Appendix J
Pearson Correlation Matrix of the Faculty Satisfaction Items

	q1	q2	q3	q4	q5	q6	q7	q8	q9	q10	q11	q12	q13	q14
q1	1.00000	-0.03832 0.6591	0.06900 0.4265	0.18540 0.0313	-0.05688 0.5123	0.14365 0.0965	0.06590 0.4476	0.06729 0.4381	0.10912 0.2077	-0.01483 0.8644	0.01809 0.8351	0.12468 0.1496	0.00571 0.9475	0.12089 0.1625
q2	-0.03832 0.6591	1.00000	0.32016 0.0002	0.10933 0.2068	0.27929 0.0010	-0.05562 0.5217	-0.22928 0.0075	0.13075 0.1306	0.50390 <.0001	0.28436 0.0008	0.42349 <.0001	0.01881 0.8285	0.05924 0.4949	0.04184 0.6299
q3	0.06900 0.4265	0.32016 0.0002	1.00000	0.09209 0.2881	0.27119 0.0015	0.02153 0.8043	-0.26511 0.0019	0.07199 0.4067	0.38362 <.0001	0.29260 0.0006	0.44252 <.0001	0.14859 0.0854	0.06758 0.4361	-0.01963 0.8212
q4	0.18540 0.0313	0.10933 0.2068	0.09209 0.2881	1.00000	0.05845 0.5007	0.15162 0.0792	-0.05327 0.5395	0.09953 0.2508	0.09296 0.2835	0.16212 0.0603	0.18867 0.0284	0.17469 0.0427	0.11905 0.1691	0.17812 0.0387
q5	-0.05688 0.5123	0.27929 0.0010	0.27119 0.0015	0.05845 0.5007	1.00000	0.13011 0.1326	-0.21543 0.0121	0.07767 0.3706	0.31518 0.0002	0.13278 0.1247	0.30186 0.0004	0.00089 0.9918	0.18394 0.0327	-0.22021 0.0103
q6	0.14365 0.0965	-0.05562 0.5217	0.02153 0.8043	0.15162 0.0792	0.13011 0.1326	1.00000	0.00441 0.9596	0.02938 0.7352	-0.02788 0.7482	0.04521 0.6026	0.07737 0.3724	0.09454 0.2754	0.31212 0.0002	0.08514 0.3262
q7	0.06590 0.4476	-0.22928 0.0075	-0.26511 0.0019	-0.05327 0.5395	-0.21543 0.0121	0.00441 0.9596	1.00000	0.07712 0.3740	-0.20192 0.0188	-0.12003 0.1656	-0.17559 0.0416	0.04495 0.6047	-0.06973 0.4216	0.16809 0.0513
q8	0.06729 0.4381	0.13075 0.1306	0.07199 0.4067	0.09953 0.2508	0.07767 0.3706	0.02938 0.7352	0.07712 0.3740	1.00000	0.07384 0.3947	0.33485 <.0001	0.02614 0.7635	0.08184 0.3453	-0.04314 0.6194	-0.04504 0.6040
q9	0.10912 0.2077	0.50390 <.0001	0.38362 <.0001	0.09296 0.2835	0.31518 0.0002	-0.02788 0.7482	-0.20192 0.0188	0.07384 0.3947	1.00000	0.23329 0.0065	0.38018 <.0001	0.07601 0.3809	0.22018 0.0103	0.02309 0.7903
q10	-0.01483 0.8644	0.28436 0.0008	0.29260 0.0006	0.16212 0.0603	0.13278 0.1247	0.04521 0.6026	-0.12003 0.1656	0.33485 <.0001	0.23329 0.0065	1.00000	0.22199 0.0097	0.11235 0.1945	-0.04612 0.5953	0.04526 0.6022
q11	0.01809 0.8351	0.42349 <.0001	0.44252 <.0001	0.18867 0.0284	0.30186 0.0004	0.07737 0.3724	-0.17559 0.0416	0.02614 0.7635	0.38018 <.0001	0.22199 0.0097	1.00000	0.14382 0.0961	0.14350 0.0968	0.03563 0.6816
q12	0.12468 0.1496	0.01881 0.8285	0.14859 0.0854	0.17469 0.0427	0.00089 0.9918	0.09454 0.2754	0.04495 0.6047	0.08184 0.3453	0.07601 0.3809	0.11235 0.1945	0.14382 0.0961	1.00000	0.06442 0.4579	0.14185 0.1008
q13	0.00571 0.9475	0.05924 0.4949	0.06758 0.4361	0.11905 0.1691	0.18394 0.0327	0.31212 0.0002	-0.06973 0.4216	-0.04314 0.6194	0.22018 0.0103	-0.04612 0.5953	0.14350 0.0968	0.06442 0.4579	1.00000	0.06217 0.4738
q14	0.12089 0.1625	0.04184 0.6299	-0.01963 0.8212	0.17812 0.0387	-0.22021 0.0103	0.08514 0.3262	0.16809 0.0513	-0.04504 0.6040	0.02309 0.7903	0.04526 0.6022	0.03563 0.6816	0.14185 0.1008	0.06217 0.4738	1.00000

Pearson Correlation Matrix of the Faculty Satisfaction Items (Continued)

	q15	q16	q17	q18	q19	q20	q21	q22	q23	q24	q25	q26	q27	q28
q1	0.19338 0.0246	-0.03168 0.7153	0.20874 0.0151	0.20486 0.0171	0.27657 0.0012	-0.03120 0.7194	0.20848 0.0152	-0.00470 0.9568	0.04291 0.6212	-0.03446 0.6915	0.09737 0.2612	-0.03490 0.6878	0.07455 0.3901	0.09515 0.2723
q2	-0.10024 0.2474	0.21438 0.0125	0.16784 0.0517	-0.00916 0.9160	-0.00429 0.9606	0.32705 0.0001	0.03183 0.7140	0.11237 0.1944	0.41148 <.0001	0.14686 0.0892	-0.08897 0.3048	0.15756 0.0680	0.27024 0.0015	-0.13853 0.1091
q3	-0.15755 0.0680	0.09007 0.2989	0.17016 0.0485	0.00196 0.9820	-0.04902 0.5723	0.20426 0.0175	-0.03407 0.6948	0.21967 0.0105	0.22713 0.0081	0.02392 0.7831	-0.25155 0.0032	-0.06956 0.4227	0.31910 0.0002	-0.05108 0.5563
q4	0.20400 0.0176	0.07786 0.3694	0.14271 0.0987	0.09886 0.2540	0.29290 0.0006	0.12227 0.1577	0.19530 0.0232	0.11152 0.1978	0.09421 0.2771	0.08802 0.3100	-0.01978 0.8199	0.08548 0.3242	0.11290 0.1923	0.04145 0.6331
q5	0.06225 0.4732	0.27391 0.0013	0.15209 0.0782	0.00848 0.9222	-0.05960 0.4923	0.28088 0.0010	-0.01951 0.8223	0.12187 0.1591	0.35053 <.0001	0.03864 0.6563	-0.06253 0.4712	0.10105 0.2435	0.23006 0.0073	-0.14290 0.0982
q6	0.50200 <.0001	-0.12917 0.1354	0.22864 0.0076	0.12389 0.1522	0.14334 0.0972	0.07931 0.3605	0.09234 0.2868	0.02459 0.7771	-0.05153 0.5528	-0.15350 0.0755	0.03475 0.6891	0.08780 0.3112	0.02821 0.7453	0.12341 0.1539
q7	0.22053 0.0102	-0.04749 0.5844	-0.06753 0.4365	0.09000 0.2992	-0.02824 0.7451	-0.14887 0.0848	-0.06697 0.4402	-0.18167 0.0350	-0.19793 0.0214	0.01091 0.9000	0.39809 <.0001	0.08863 0.3067	-0.11870 0.1703	0.17425 0.0433
q8	0.02413 0.7811	0.06949 0.4232	0.06619 0.4456	0.09960 0.2504	-0.03498 0.6871	0.02997 0.7300	-0.09861 0.2552	0.06551 0.4503	0.14600 0.0911	0.12905 0.1358	-0.17000 0.0487	0.06854 0.4296	-0.02565 0.7677	-0.10174 0.2403
q9	-0.04299 0.6205	0.25737 0.0026	0.18723 0.0297	0.11017 0.2034	-0.01031 0.9055	0.27435 0.0013	0.03251 0.7082	0.10034 0.2469	0.31345 0.0002	0.13376 0.1219	-0.13825 0.1098	0.03936 0.6504	0.42026 <.0001	-0.14253 0.0991
q10	-0.04250 0.6246	0.02925 0.7363	0.16745 0.0522	-0.00173 0.9841	-0.20938 0.0148	0.24347 0.0044	-0.05539 0.5234	0.11551 0.1822	0.08543 0.3245	0.00070 0.9936	-0.25828 0.0025	0.01647 0.8496	0.27847 0.0011	-0.16344 0.0582
q11	0.02396 0.7826	0.21206 0.0135	0.21521 0.0122	0.16971 0.0491	0.04072 0.6391	0.50059 <.0001	0.01738 0.8415	0.20062 0.0196	0.33772 <.0001	0.02204 0.7997	-0.08672 0.3173	-0.00066 0.9939	0.32017 0.0002	-0.10989 0.2045
q12	0.17655 0.0405	0.08368 0.3346	0.44749 <.0001	0.33949 <.0001	0.20969 0.0146	0.09130 0.2923	0.08939 0.3025	0.22763 0.0079	0.09001 0.2992	0.06230 0.4728	-0.13426 0.1205	0.06106 0.4817	0.19337 0.0246	0.14424 0.0951
q13	0.30190 0.0004	0.04609 0.5955	0.14300 0.0980	-0.05415 0.5328	-0.03569 0.6811	0.06722 0.4385	0.06838 0.4307	0.19806 0.0213	-0.03502 0.6868	-0.07065 0.4155	-0.04734 0.5856	0.16800 0.0515	0.15110 0.0802	-0.01381 0.8737
q14	0.22474 0.0088	-0.03736 0.6670	0.02039 0.8144	0.05540 0.5233	0.18091 0.0357	-0.03252 0.7081	0.07500 0.3873	-0.04817 0.5790	-0.00200 0.9816	0.14562 0.0919	0.13797 0.1105	0.12986 0.1333	0.05399 0.5340	0.23771 0.0055

Pearson Correlation Matrix of the Faculty Satisfaction Items (Continued)

	q1	q2	q3	q4	q5	q6	q7	q8	q9	q10	q11	q12	q13	q14
q15	0.19338 0.0246	-0.10024 0.2474	-0.15755 0.0680	0.20400 0.0176	0.06225 0.4732	0.50200 <.0001	0.22053 0.0102	0.02413 0.7811	-0.04299 0.6205	-0.04250 0.6246	0.02396 0.7826	0.17655 0.0405	0.30190 0.0004	0.22474 0.0088
q16	-0.03168 0.7153	0.21438 0.0125	0.09007 0.2989	0.07786 0.3694	0.27391 0.0013	-0.12917 0.1354	-0.04749 0.5844	0.06949 0.4232	0.25737 0.0026	0.02925 0.7363	0.21206 0.0135	0.08368 0.3346	0.04609 0.5955	-0.03736 0.6670
q17	0.20874 0.0151	0.16784 0.0517	0.17016 0.0485	0.14271 0.0987	0.15209 0.0782	0.22864 0.0076	-0.06753 0.4365	0.06619 0.4456	0.18723 0.0297	0.16745 0.0522	0.21521 0.0122	0.44749 <.0001	0.14300 0.098	0.02039 0.8144
q18	0.20486 0.0171	-0.00916 0.9160	0.00196 0.9820	0.09886 0.2540	0.00848 0.9222	0.12389 0.1522	0.09000 0.2992	0.09960 0.2504	0.11017 0.2034	-0.00173 0.9841	0.16971 0.0491	0.33949 <.0001	-0.05415 0.5328	0.05540 0.5233
q19	0.27657 0.0012	-0.00429 0.9606	-0.04902 0.5723	0.29290 0.0006	-0.05960 0.4923	0.14334 0.0972	-0.02824 0.7451	-0.03498 0.6871	-0.01031 0.9055	-0.20938 0.0148	0.04072 0.6391	0.20969 0.0146	-0.03569 0.6811	0.18091 0.0357
q20	-0.03120 0.7194	0.32705 0.0001	0.20426 0.0175	0.12227 0.1577	0.28088 0.0010	0.07931 0.3605	-0.14887 0.0848	0.02997 0.7300	0.27435 0.0013	0.24347 0.0044	0.50059 <.0001	0.09130 0.2923	0.06722 0.4385	-0.03252 0.7081
q21	0.20848 0.0152	0.03183 0.7140	-0.03407 0.6948	0.19530 0.0232	-0.01951 0.8223	0.09234 0.2868	-0.06697 0.4402	-0.09861 0.2552	0.03251 0.7082	-0.05539 0.5234	0.01738 0.8415	0.08939 0.3025	0.06838 0.4307	0.07500 0.3873
q22	-0.00470 0.9568	0.11237 0.1944	0.21967 0.0105	0.11152 0.1978	0.12187 0.1591	0.02459 0.7771	-0.18167 0.0350	0.06551 0.4503	0.10034 0.2469	0.11551 0.1822	0.20062 0.0196	0.22763 0.0079	0.19806 0.0213	-0.04817 0.5790
q23	0.04291 0.6212	0.41148 <.0001	0.22713 0.0081	0.09421 0.2771	0.35053 <.0001	-0.05153 0.5528	-0.19793 0.0214	0.14600 0.0911	0.31345 0.0002	0.08543 0.3245	0.33772 <.0001	0.09001 0.2992	-0.03502 0.6868	-0.00200 0.9816
q24	-0.03446 0.6915	0.14686 0.0892	0.02392 0.7831	0.08802 0.3100	0.03864 0.6563	-0.15350 0.0755	0.01091 0.9000	0.12905 0.1358	0.13376 0.1219	0.00070 0.9936	0.02204 0.7997	0.06230 0.4728	-0.07065 0.4155	0.14562 0.0919
q25	0.09737 0.2612	-0.08897 0.3048	-0.25155 0.0032	-0.01978 0.8199	-0.06253 0.4712	0.03475 0.6891	0.39809 <.0001	-0.17000 0.0487	-0.13825 0.1098	-0.25828 0.0025	-0.08672 0.3173	-0.13426 0.1205	-0.04734 0.5856	0.13797 0.1105
q26	-0.03490 0.6878	0.15756 0.0680	-0.06956 0.4227	0.08548 0.3242	0.10105 0.2435	0.08780 0.3112	0.08863 0.3067	0.06854 0.4296	0.03936 0.6504	0.01647 0.8496	-0.00066 0.9939	0.06106 0.4817	0.16800 0.0515	0.12986 0.1333
q27	0.07455 0.3901	0.27024 0.0015	0.31910 0.0002	0.11290 0.1923	0.23006 0.0073	0.02821 0.7453	-0.11870 0.1703	-0.02565 0.7677	0.42026 <.0001	0.27847 0.0011	0.32017 0.0002	0.19337 0.0246	0.15110 0.0802	0.05399 0.5340
q28	0.09515 0.2723	-0.13853 0.1091	-0.05108 0.5563	0.04145 0.6331	-0.14290 0.0982	0.12341 0.1539	0.17425 0.0433	-0.10174 0.2403	-0.14253 0.0991	-0.16344 0.0582	-0.10989 0.2045	0.14424 0.0951	-0.01381 0.8737	0.23771 0.0055

Pearson Correlation Matrix of the Faculty Satisfaction Items (Continued)

	q15	q16	q17	q18	q19	q20	q21	q22	q23	q24	q25	q26	q27	q28
q15	1.00000	-0.11006 0.2038	0.05408 0.5333	0.10842 0.2107	0.17216 0.0459	-0.05590 0.5196	0.01138 0.8958	0.00040 0.9963	0.06990 0.4205	-0.08852 0.3073	0.08720 0.3146	0.11616 0.1797	-0.09052 0.2965	0.09351 0.2807
q16	-0.11006 0.2038	1.00000	0.16673 0.0533	0.06471 0.4559	-0.09923 0.2522	0.19130 0.0262	-0.04639 0.5932	0.03156 0.7163	0.25295 0.0031	0.13632 0.1149	0.07227 0.4048	-0.00277 0.9746	0.37167 <.0001	-0.00816 0.9252
q17	0.05408 0.5333	0.16673 0.0533	1.00000	0.39223 <.0001	0.14160 0.1014	0.12006 0.1654	0.18953 0.0277	0.13896 0.1080	0.15129 0.0798	0.11188 0.1964	-0.09350 0.2807	0.16295 0.0590	0.14648 0.0900	0.09572 0.2694
q18	0.10842 0.2107	0.06471 0.4559	0.39223 <.0001	1.00000	0.27627 0.0012	0.18351 0.0331	0.20199 0.0188	0.01451 0.8673	0.22527 0.0086	0.08723 0.3144	-0.00549 0.9496	0.02590 0.7655	0.08035 0.3543	0.08628 0.3197
q19	0.17216 0.0459	-0.09923 0.2522	0.14160 0.1014	0.27627 0.0012	1.00000	-0.09003 0.2991	0.37022 <.0001	-0.06592 0.4475	0.03422 0.6936	-0.08181 0.3455	0.17716 0.0398	0.18344 0.0332	-0.01663 0.8482	0.44822 <.0001
q20	-0.05590 0.5196	0.19130 0.0262	0.12006 0.1654	0.18351 0.0331	-0.09003 0.2991	1.00000	0.06991 0.4204	0.16935 0.0496	0.26301 0.0021	0.12087 0.1626	-0.12219 0.1580	0.02250 0.7956	0.37581 <.0001	-0.10520 0.2246
q21	0.01138 0.8958	-0.04639 0.5932	0.18953 0.0277	0.20199 0.0188	0.37022 <.0001	0.06991 0.4204	1.00000	0.18309 0.0335	0.04413 0.6113	0.06631 0.4448	0.17357 0.0441	0.19338 0.0246	0.16452 0.0566	0.27909 0.001
q22	0.00040 0.9963	0.03156 0.7163	0.13896 0.1080	0.01451 0.8673	-0.06592 0.4475	0.16935 0.0496	0.18309 0.0335	1.00000	0.21305 0.0131	-0.03784 0.6630	-0.19257 0.0252	0.04571 0.5986	0.09527 0.2717	-0.05941 0.4937
q23	0.06990 0.4205	0.25295 0.0031	0.15129 0.0798	0.22527 0.0086	0.03422 0.6936	0.26301 0.0021	0.04413 0.6113	0.21305 0.0131	1.00000	0.08638 0.3192	-0.01025 0.9061	0.03590 0.6793	0.13939 0.1069	-0.11831 0.1717
q24	-0.08852 0.3073	0.13632 0.1149	0.11188 0.1964	0.08723 0.3144	-0.08181 0.3455	0.12087 0.1626	0.06631 0.4448	-0.03784 0.6630	0.08638 0.3192	1.00000	0.04058 0.6403	0.03312 0.7029	-0.05564 0.5215	0.08322 0.3372
q25	0.08720 0.3146	0.07227 0.4048	-0.09350 0.2807	-0.00549 0.9496	0.17716 0.0398	-0.12219 0.1580	0.17357 0.0441	-0.19257 0.0252	-0.01025 0.9061	0.04058 0.6403	1.00000	0.22461 0.0088	-0.04631 0.5938	0.32589 0.0001
q26	0.11616 0.1797	-0.00277 0.9746	0.16295 0.0590	0.02590 0.7655	0.18344 0.0332	0.02250 0.7956	0.19338 0.0246	0.04571 0.5986	0.03590 0.6793	0.03312 0.7029	0.22461 0.0088	1.00000	0.07251 0.4033	0.34855 <.0001
q27	-0.09052 0.2965	0.37167 <.0001	0.14648 0.0900	0.08035 0.3543	-0.01663 0.8482	0.37581 <.0001	0.16452 0.0566	0.09527 0.2717	0.13939 0.1069	-0.05564 0.5215	-0.04631 0.5938	0.07251 0.4033	1.00000	0.02647 0.7605
q28	0.09351 0.2807	-0.00816 0.9252	0.09572 0.2694	0.08628 0.3197	0.44822 <.0001	-0.10520 0.2246	0.27909 0.0010	-0.05941 0.4937	-0.11831 0.1717	0.08322 0.3372	0.32589 0.0001	0.34855 <.0001	0.02647 0.7605	1.00000

Appendix K
Eigenvector Matrix of the Faculty Satisfaction Items

	Prin1	Prin2	Prin3	Prin4	Prin5	Prin6	Prin7	Prin8	Prin9
q1	0.027811	0.24948	-0.06322	-0.21018	-0.05555	-0.2276	-0.30485	0.289762	0.19171
q2	0.320279	-0.04428	0.188582	0.049942	0.099975	-0.18998	0.016584	-0.23487	-0.00199
q3	0.3068	-0.0662	-0.02634	-0.12475	-0.13601	0.068459	-0.15514	-0.0835	0.072339
q4	0.151414	0.2371	-0.06246	-0.16176	0.045264	-0.22159	-0.14751	-0.11909	-0.13785
q5	0.277494	-0.04576	-0.01771	0.35429	0.030068	-0.17978	0.171165	0.161931	0.16242
q6	0.056003	0.271753	-0.41852	0.210879	0.060292	-0.02204	-0.04198	-0.02985	0.123685
q7	-0.204459	0.15	0.07032	0.035238	0.452116	0.187201	-0.10348	0.143215	0.074699
q8	0.109786	-0.03324	-0.09035	-0.29842	0.422339	-0.21556	0.269236	-0.01593	0.317348
q10	0.24431	-0.08682	-0.12434	-0.28009	0.250101	0.136168	-0.05969	-0.30522	0.321187
q11	0.354182	0.018516	0.032429	0.109916	-0.00384	-0.03595	-0.25629	-0.05873	-0.11323
q12	0.157104	0.227197	-0.08936	-0.32093	0.011038	0.305832	0.11624	0.327994	-0.14375
q13	0.115318	0.153104	-0.30932	0.357675	-0.01914	0.215459	0.152662	-0.08552	-0.20051
q14	-0.016474	0.257005	0.075366	-0.14317	0.238415	0.109666	-0.27517	-0.30472	-0.38848
q15	-0.015633	0.308727	-0.3776	0.196185	0.264511	-0.15997	-0.06982	0.061877	-0.14215
q16	0.199208	-0.03594	0.292297	0.172637	0.156844	0.161135	-0.02637	0.424586	-0.00285
q17	0.216653	0.214969	-0.04754	-0.17842	-0.02215	0.174604	0.244981	0.337384	0.062427
q19	-0.020764	0.383287	0.115309	-0.12275	-0.26444	-0.28851	-0.06655	-0.0109	0.114227
q20	0.308397	-0.03192	0.081893	0.128557	0.037879	0.074465	-0.17384	-0.10705	-0.07975
q21	0.052344	0.293716	0.175589	-0.05138	-0.35378	-0.05343	0.108549	-0.11241	0.048816
q22	0.202614	0.022213	-0.14584	-0.06748	-0.222	0.083197	0.316457	-0.03036	-0.25564
q23	0.274603	-0.0063	0.144826	0.092061	0.069952	-0.43608	0.072596	0.168649	-0.12467
q24	0.059562	0.009833	0.298589	-0.175	0.261269	-0.05633	0.228914	0.01148	-0.45719
q25	-0.160228	0.226301	0.339977	0.30534	0.150087	-0.04934	-0.1038	0.059515	0.10061
q26	0.039429	0.256218	0.16446	0.171804	0.11045	0.089284	0.436561	-0.34542	0.228933
q27	0.284198	0.049013	0.140849	0.090936	-0.0556	0.399233	-0.2868	0.002406	0.22584
q28	-0.09522	360217	0.257727	-0.01805	-0.08558	0.168688	0.107151	-0.11395	0.11797

Eigenvector Matrix of the Faculty Satisfaction Items (Continued)

	Prin10	Prin11	Prin12	Prin13	Prin14	Prin15	Prin16	Prin17	Prin18
q1	0.181504	0.02057	0.120429	0.510045	-0.07277	-0.02711	-0.21314	-0.27195	-0.35439
q2	-0.16713	-0.00631	-0.02436	0.14718	-0.34233	-0.17862	-0.10283	0.124889	0.238569
q3	-0.32523	0.016022	-0.04418	0.362043	0.488393	-0.09421	0.153265	-0.02472	0.097664
q4	0.393055	-0.16074	-0.31263	-0.29359	0.158111	-0.40855	0.290296	-0.04153	-0.13904
q5	-0.04685	-0.15352	-0.01812	-0.01492	0.228728	0.091862	0.260929	-0.40813	0.085696
q6	-0.07242	-0.22131	0.246036	-0.04229	0.062461	0.24095	0.123987	0.376893	-0.06979
q7	0.051311	0.346627	0.186718	-0.00892	0.154445	-0.2671	0.000239	-0.07324	0.244906
q8	0.164835	0.0722	-0.10551	0.019381	0.219384	0.128858	-0.39857	0.22572	0.143443
q10	0.099861	-0.00047	0.056263	-0.02568	-0.11357	0.08916	0.372855	0.024942	-0.02559
q11	-0.18552	0.116689	0.170371	-0.11023	0.14957	-0.31592	-0.18741	0.206309	-0.01147
q12	-0.21754	0.141642	-0.04624	-0.27	-0.05016	-0.01223	-0.01394	-0.25319	0.222502
q13	0.174967	-0.11927	-0.20207	0.318845	0.019938	-0.19457	-0.31288	0.039309	0.201008
q14	-0.14813	0.037581	-0.2	0.196425	-0.18731	0.260219	0.058313	0.031886	-0.08383
q15	-0.05404	0.066387	-0.02903	-0.08459	-0.0455	0.194549	0.050282	-0.1744	0.086105
q16	0.19277	-0.11478	-0.4042	-0.04362	-0.00881	0.119097	-0.01606	0.329605	-0.2017
q17	-0.16699	-0.2175	0.225575	0.080445	-0.32111	-0.25678	0.152781	0.22523	-0.10839
q19	-0.16441	-0.06213	-0.18111	-0.25172	0.071914	-0.03322	-0.23371	0.034517	0.175888
q20	0.153819	0.016327	0.462193	-0.36827	0.009042	0.096828	-0.33271	-0.12296	-0.26552
q21	0.424647	0.040051	0.248001	0.070472	-0.11402	0.15423	0.112853	0.079269	0.426149
q22	0.232442	0.578411	0.002294	0.091986	0.185393	0.066271	0.100108	0.127518	-0.24183
q23	-0.16205	0.316752	-0.06161	0.015053	-0.18288	0.265828	0.110835	-0.002	0.015112
q24	0.116291	-0.42276	0.282951	0.163884	0.241516	0.095394	0.006478	-0.13395	0.073587
q25	0.05816	0.192085	0.146455	0.120754	0.073625	-0.16374	0.280959	0.184971	0.031487
q26	-0.09395	0.052726	-0.09323	0.01679	-0.16107	-0.18354	-0.07821	-0.31437	-0.33085
q27	0.198977	-0.00873	-0.15827	0.01758	-0.06566	0.244806	-0.06423	-0.19648	0.202855
q28	-0.22968	-0.0473	-0.03331	-0.04796	0.356633	0.25852	-0.0508	0.12286	-0.1988

Eigenvector Matrix of the Faculty Satisfaction Items (Continued)

	Prin19	Prin20	Prin21	Prin22	Prin23	Prin24	Prin25	Prin26
q1	-0.07025	0.129751	0.073468	-0.00806	-0.01123	0.054983	-0.11971	0.128629
q2	-0.42443	0.447233	-0.15444	0.014435	0.164482	0.100072	-0.15062	-0.09743
q3	-0.10042	-0.23909	-0.20532	-0.01005	-0.0397	0.291083	0.303815	-0.13253
q4	-0.11836	-0.15891	-0.11816	0.075732	0.160592	-0.0053	-0.17989	-0.07785
q5	0.418895	0.356005	-0.07181	0.032856	0.100516	-0.00763	-0.17762	-0.02678
q6	-0.17289	0.008741	-0.302	0.282768	-0.06705	-0.01308	-0.07333	0.35965
q7	0.031385	0.032829	-0.33451	-0.24795	0.29204	-0.0714	0.066688	0.25441
q8	0.169624	-0.08619	-0.02637	0.183324	-0.0906	0.003103	-0.10578	-0.24983
q10	0.038869	0.126809	0.471523	-0.18219	0.073445	0.034791	0.191266	0.258154
q11	0.218058	-0.02836	0.185393	-0.23957	-0.4305	-0.22081	-0.3069	0.142207
q12	-0.12333	0.061467	0.155297	0.306368	-0.14119	0.317878	-0.20102	0.141613
q13	0.087411	-0.11915	0.342418	0.038224	0.296205	0.087132	0.051919	0.134271
q14	0.485093	0.089171	-0.18428	0.127571	0.012704	0.058295	-0.04292	-0.06368
q15	-0.24988	0.026974	0.110847	-0.38859	-0.24826	-0.00258	0.187624	-0.42428
q16	-0.02648	0.12272	-0.08359	-0.22746	-0.16423	0.285628	0.17209	0.141873
q17	0.213101	-0.11208	-0.07159	-0.08361	0.175384	-0.2277	0.113467	-0.33326
q19	0.129405	0.230255	0.059391	0.047141	0.059561	-0.1948	0.529113	0.191038
q20	0.051103	-0.03597	-0.02539	0.105428	0.255921	0.29046	0.22472	-0.17507
q21	0.149822	-0.11483	-0.12091	-0.25243	-0.16432	0.289868	-0.10904	0.002374
q22	-0.06335	0.329539	-0.07908	0.056366	-0.00433	-0.22912	0.118764	-0.02763
q23	-0.04214	-0.50938	0.091387	0.006457	0.266536	-0.08198	-0.02381	0.235771
q24	-0.17996	0.022148	0.076009	0.017384	-0.13143	-0.2288	0.134305	0.164237
q25	-0.02066	0.026841	0.36024	0.477937	-0.12781	0.065789	0.101742	-0.22772
q26	-0.03579	-0.19415	-0.16995	-0.00337	-0.31191	0.046435	0.091037	0.15341
q27	-0.17543	-0.13636	-0.10095	0.164392	-0.05032	-0.52625	-0.01992	-0.11566
q28	-0.16575	0.034481	0.203068	-0.26422	0.344824	-0.00983	-0.37183	-0.11699

Appendix L
Mean and Standard Deviation

Question	Mean	Standard Deviation
1	2.76	0.87
2	3.32	0.65
3	3.33	0.62
4	2.86	0.89
5	3.17	0.62
6	3.14	0.81
7	3.19	0.70
8	2.94	0.70
9	3.16	0.63
10	2.98	0.67
11	3.61	0.51
12	2.56	0.69
13	3.13	0.66
14	2.57	0.78
15	2.99	0.83
16	2.84	0.64
17	2.76	0.77
18	2.57	0.83
19	2.73	0.77
20	3.39	0.64
21	2.79	0.86
22	2.70	0.63
23	3.22	0.58
24	2.89	0.65
25	3.11	0.72
26	2.56	0.77
27	3.11	0.61
28	2.66	0.70

Appendix M
Comparison of Credits and Students Taught by Modality

		0 Students	1-25 Students	26-50 Students	51-75 Students	76-150 Students	151-250 Students	251+ Students
Face-to-Face								
	0 Credits	23						
	1-4 Credits		7	7	1			
	5-9 Credits			11	5	7	1	
	10-16 Credits		3	2	6	17	6	1
	17-21 Credits					5	7	3
	20-30 Credits		2	2	1	2	5	6
	31-44 credits		1			1	1	2
Online								
	0 Credits	20						
	1-4 Credits		10	12	2	2		
	5-9 Credits		2	15	14	19		
	10-16 Credits			1	4	16	4	
	17-21 Credits			1		2	3	1
	20-30 Credits					2	1	1
	31-44 credits						2	1
Hybrid/Blended								
	0 Credits	71						
	1-4 Credits		10	19	1	1		
	5-9 Credits		1	5	5			
	10-16 Credits			1	2	5	1	
	17-21 Credits					2		
	20-30 Credits			1		5	1	
	31-44 credits		1	1	1			
Other								
	0 Credits	130						
	1-4 Credits		1	1	1			
	5-9 Credits			2				
	10-16 Credits							
	17-21 Credits							
	20-30 Credits							
	31-44 credits							

Appendix N
Comparison of Modality, Credits Taught, and Faculty Satisfaction

Range of Credits: Face-to-Face	Total Frequency	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
0 Credits	23	20	3	87.0%
1-4 Credits	15	15	0	100%
5-9 Credits	24	18	6	75.0%
10-16 Credits	35	25	10	71.4%
17-21 Credits	15	13	2	86.7%
22-30 Credits	18	14	4	77.8%
31-44 Credits	5	4	1	80.0%
Range of Credits: Online	Total Frequency	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
0 Credits	20	15	5	75.0%
1-4 Credits	26	21	5	80.1%
5-9 Credits	50	39	11	78.0%
10-16 Credits	25	22	3	88.0%
17-21 Credits	7	6	1	85.7%
22-30 Credits	4	4	0	100%
31-44 Credits	3	2	1	66.7%
Range of Credits: Hybrid	Total frequency	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
0 Credits	71	55	16	77.5%
1-4 Credits	32	29	3	90.1%
5-9 Credits	11	9	2	81.8%
10-16 Credits	9	6	3	66.7%
17-21 Credits	2	2	0	100%
22-30 Credits	7	6	1	85.7%
31-44 Credits	3	2	1	66.7%
Range of Credits: Other	Total frequency	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
0 Credits	130	104	26	80.0%
1-4 Credits	3	3	0	100%
5-9 Credits	1	1	0	100%
10-16 Credits	1	1	0	100%
17-21 Credits	0	0	0	NA
22-30 Credits	0	0	0	NA
31-44 Credits	0	0	0	NA

Appendix O
Comparison of Modality, Students Taught, and Faculty Satisfaction

Range of Student: Face-to-Face	Total Frequency	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
0 Students	23	20	3	87.0%
1-25 Students	13	12	1	92.3%
26-50 Students	22	18	4	81.8%
51-75 Students	13	7	6	53.8%
76-150 Students	32	28	4	87.5%
151-250 Students	20	15	5	75.0%
251+ Students	12	9	3	75.0%
Range of Students: Online	Total Frequency	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
0 Students	20	15	5	75.0%
1-25 Students	12	9	3	75.0%
26-50 Students	29	22	7	75.9%
51-75 Students	20	17	3	85.0%
76-150 Students	41	35	6	85.3%
151-250 Students	10	10	0	100%
251+ Students	3	1	2	33.3%
Range of Students: Hybrid	Total Frequency	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
0 Students	71	55	16	77.5%
1-25 Students	12	12	0	100%
26-50 Students	27	21	6	77.8%
51-75 Students	9	7	2	77.8%
76-150 Students	13	12	1	92.3%
151-250 Students	2	1	1	50%
251+ Students	0	0	0	NA
Range of Students: Other	Total frequency	Indicated "Satisfied"	Indicated "Not Satisfied"	Percent Satisfied
0 Students	130	104	26	80.0%
1-25 Students	1	1	0	100%
26-50 Students	2	2	0	100%
51-75 Students	1	1	0	100%
76-150 Students	0	0	0	NA
151-250 Students	0	0	0	NA
251+ Students	0	0	0	NA

Appendix P
Six Principal Component Factors

Principal Component Factor 1						
Variable	Eigenvalue	Student-related	Instructor-related	Institution-related	Technology-related	Time-related
q11	0.354182	X				X
q2	0.320279	X			X	
q20	0.308397	X			X	
q3	0.3068	X			X	
q27	0.284198	X			X	
q5	0.277494		X		X	
q23	0.274603		X		X	
q10	0.24431	X				X
q17	0.216653	X				
q7	-0.204459	X				
q22	0.202614		X			
q16	0.199208	X			X	
q25	-0.160228	X				
q12	0.157104	X				
q4	0.151414		X			X
q13	0.115318		X			
q8	0.109786		X			
q28	-0.09522	X				
q24	0.059562			X		
q6	0.056003			X		X
q21	0.052344	X				X
q26	0.039429			X		
q1	0.027811	X			X	
q19	-0.020764	X				
q14	-0.016474		X		X	
q15	-0.015633			X		X

Principal Component Factor 2						
Variable	Eigenvalue	Student-related	Instructor-related	Institution-related	Technology-related	Time-related
q19	0.383287	X				
q28	0.360217	X				
q15	0.308727			X		X
q21	0.293716	X				
q6	0.271753			X		X
q14	0.257005		X		X	
q26	0.256218			X		
q1	0.24948	X			X	
q4	0.2371		X			X
q12	0.227197	X				
q25	0.226301	X				
q17	0.214969	X				
q13	0.153104		X			
q7	0.15	X				
q10	-0.086817	X				X
q3	-0.066195	X			X	
q27	0.049013	X			X	
q5	-0.045762		X		X	
q2	-0.044284	X			X	
q16	-0.035937	X			X	
q8	-0.033244		X			
q20	-0.031924	X			X	
q22	0.022213		X			
q11	0.018516	X				X
q24	0.009833			X		X
q23	-0.006295		X		X	

Principal Component Factor 3						
Variable	Eigenvalue	Student-related	Instructor-related	Institution-related	Technology-related	Time-related
q6	-0.418523			X		X
q15	-0.377597			X		X
q25	0.339977	X				
q13	-0.309324		X			
q24	0.298589			X		X
q16	0.292297	X			X	
q28	0.257727	X				
q2	0.188582	X			X	
q21	0.175589	X				X
q26	0.16446			X		
q22	-0.145844		X			
q23	0.144826		X		X	
q27	0.140849	X			X	
q10	-0.124339	X				X
q19	0.115309	X				
q8	-0.090351		X			
q12	-0.089355	X				
q20	0.081893	X			X	
q14	0.075366		X		X	
q7	0.07032	X				
q1	-0.063223	X			X	
q4	-0.062455		X			X
q17	-0.047541	X				
q11	0.032429	X				X
q3	-0.026338	X			X	
q5	-0.017705		X		X	

Principal Component Factor 4						
Variable	Eigenvalue	Student-related	Instructor-related	Institution-related	Technology-related	Time-related
q13	0.357675		X			
q5	0.35429		X		X	
q12	-0.320927	X				
q25	0.30534	X				
q8	-0.298423		X			
q10	-0.280093	X				X
q6	0.210879			X		X
q1	-0.210176	X			X	
q15	0.196185			X		X
q17	-0.17842	X				
q24	-0.174999			X		X
q16	0.172637	X			X	
q26	0.171804			X		
q4	-0.161761		X			X
q14	-0.143168		X		X	
q20	0.128557	X			X	
q3	-0.124747	X			X	
q19	-0.122751	X				
q11	0.109916	X				X
q23	0.092061		X		X	
q27	0.090936	X			X	
q22	-0.067476		X			
q21	-0.051383	X				X
q2	0.049942	X			X	
q7	0.035238	X				
q28	-0.018053	X				

Principal Component Factor 5						
Variable	Eigenvalue	Student-related	Instructor-related	Institution-related	Technology-related	Time-related
q7	0.452116	X				
q8	0.422339		X			
q21	-0.353779	X				X
q15	0.264511			X		X
q19	-0.264439	X				
q24	0.261269			X		X
q10	0.250101	X				X
q14	0.238415		X		X	
q22	-0.221997		X			
q16	0.156844	X			X	
q25	0.150087	X				
q3	-0.136011	X			X	
q26	0.11045			X		
q2	0.099975	X			X	
q28	-0.085584	X				
q23	0.069952		X		X	
q6	0.060292			X		X
q27	-0.055603	X			X	
q1	-0.055548	X			X	
q4	0.045264		X			X
q20	0.037879	X			X	
q5	0.030068		X		X	
q17	-0.022145	X				
q13	-0.019137		X			
q12	0.011038	X				
q11	-0.003843	X				X

Principal Component Factor 6						
Variable	Eigenvalue	Student-related	Instructor-related	Institution-related	Technology-related	Time-related
q23	-0.436075		X		X	
q27	0.399233	X			X	
q12	0.305832	X				
q19	-0.288507	X				
q1	-0.227602	X			X	
q4	-0.221587		X		X	
q8	-0.215559		X			
q13	0.215459		X			
q2	-0.189978	X			X	
q7	0.187201	X				
q5	-0.179784		X		X	
q17	0.174604	X				
q28	0.168688	X				
q16	0.161135	X			X	
q15	-0.159973			X		X
q10	0.136168	X				X
q14	0.109666		X		X	
q26	0.089284			X		
q22	0.083197		X			
q20	0.074465	X			X	
q3	0.068459	X			X	
q24	-0.05633			X		X
q21	-0.053427	X				X
q25	-0.049344	X				
q11	-0.035954	X				X
q6	-0.02204			X		X

Appendix Q
Pearson Correlation Matrix of the Types of Prepared Curriculum Materials

	Quizzes/ Test Banks	Slides/ Presentations	Interactive Labs	Reading Assignments	Handouts	Homework	Graphics/ Images	Tables/ Diagrams	Other	Satisfied
Quizzes/ Test Banks	1.00000	0.46038 <.0001	0.25764 0.0026	0.47394 <.0001	0.27150 0.0014	0.49346 <.0001	0.29406 0.0005	0.25011 0.0034	0.21938 0.0106	0.02108 0.8083
Slides/ Presentations	0.46038 <.0001	1.00000	0.21429 0.0126	0.38463 <.0001	0.29722 0.0005	0.49902 <.0001	0.40311 <.0001	0.45715 <.0001	0.10794 0.2127	0.19328 0.0247
Interactive Labs	0.25764 0.0026	0.21429 0.0126	1.00000	0.28537 0.0008	0.10659 0.2185	0.27657 0.0012	0.13969 0.1061	0.23079 0.0071	0.14559 0.0920	0.08033 0.3544
Reading Assignments	0.47394 <.0001	0.38463 <.0001	0.28537 0.0008	1.00000	0.40946 <.0001	0.61826 <.0001	0.49847 <.0001	0.42171 <.0001	0.20580 0.0166	0.02965 0.7328
Handouts	0.27150 0.0014	0.29722 0.0005	0.10659 0.2185	0.40946 <.0001	1.00000	0.43824 <.0001	0.34475 <.0001	0.35408 <.0001	0.24780 0.0038	0.14119 0.1024
Homework	0.49346 <.0001	0.49902 <.0001	0.27657 0.0012	0.61826 <.0001	0.61826 <.0001	1.00000	0.32990 <.0001	0.45802 <.0001	0.22735 0.0080	0.03888 0.6544
Graphics/Images	0.29406 0.0005	0.40311 <.0001	0.13969 0.1061	0.49847 <.0001	0.34475 <.0001	0.32990 <.0001	1.00000	0.59694 <.0001	0.13774 0.1111	0.20310 0.0182
Tables/Diagrams	0.25011 0.0034	0.45715 <.0001	0.23079 0.0071	0.42171 <.0001	0.35408 <.0001	0.45802 <.0001	0.59694 <.0001	1.00000	0.16315 0.0587	0.17376 0.0439
Other	0.21938 0.0106	0.10794 0.2127	0.14559 0.0920	0.20580 0.0166	0.24780 0.0038	0.22735 0.0080	0.13774 0.1111	0.16315 0.0587	1.00000	-0.04728 0.5860
Satisfied	0.02108 0.8083	0.19328 0.0247	0.08033 0.3544	0.02965 0.7328	0.14119 0.1024	0.03888 0.6544	0.20310 0.0182	0.17376 0.0439	-0.04728 0.5860	1.00000

Appendix R
Pearson Correlation Matrix of the Sources of Prepared Curriculum Materials

	Book Publisher	Product Manufacturer	Online community	Instructional Design Dept.	Random Internet Searches	Other	Satisfied
Book Publisher	1.00000	0.10839 0.2108	0.14591 0.0913	0.12759 0.1403	0.33496 <.0001	0.13646 0.1145	0.11200 0.1959
Product Manufacturer	0.10839 0.2108	1.00000	0.08050 0.3533	0.07766 0.3706	0.21098 0.0140	0.18430 0.0324	0.07143 0.4103
Online Community	0.14591 0.0913	0.08050 0.3533	1.00000	0.29020 0.0006	0.35341 <.0001	0.25888 0.0024	0.08800 0.3101
Instructional Design Dept.	0.12759 0.1403	0.07766 0.3706	0.29020 0.0006	1.00000	0.19694 0.0221	0.13475 0.1192	0.12097 0.1622
Random Internet Searches	0.33496 <.0001	0.33496 <.0001	0.35341 <.0001	0.19694 0.0221	1.00000	0.19239 0.0254	-0.03888 0.6554
Other	0.13646 0.1145	0.13646 0.1145	0.25888 0.0024	0.13475 0.1192	0.19239 0.0254	1.00000	-0.01004 0.9080
Satisfied	0.11200 0.1959	0.11200 0.1959	0.08800 0.3101	0.12097 0.1622	-0.03888 0.6554	-0.01004 0.9080	1.00000

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