1-1-2015

# The Relationship between Instructor Interaction and Student Retention in the Rural Community College Online Classroom

Jennifer Michelle Estisumerel

Follow this and additional works at: https://scholarsjunction.msstate.edu/td

The relationship between instructor interaction and student retention in the rural

community college online classroom


By

Jennifer M. Estis-Sumerel


A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in Community College Leadership
in the Department of Leadership and Foundations


Mississippi State, Mississippi

May 2015

The relationship between instructor interaction and student retention in the rural

community college online classroom

By

Jennifer M. Estis-Sumerel

Approved:

_____
Arthur D. Stumpf
(Major Professor)


_____
James E. Davis
(Committee Member)


_____
Stephanie B. King
(Committee Member)


_____
William W. Wiseman
(Committee Member)


_____
James E. Davis
(Graduate Coordinator)


_____
Richard L. Blackbourn
Dean
College of Education

Name: Jennifer M. Estis-Sumerel

Date of Degree: May 8, 2015

Institution: Mississippi State University

Major Field: Community College Leadership

Major Professor: Arthur D. Stumpf

Title of Study:    The relationship between instructor interaction and student retention in the rural community college online classroom

Pages in Study: 64

Candidate for Degree of Doctor of Philosophy

The purpose of the study was to examine the relationship between instructor interaction with students and retention in online classes in a rural community college classroom. The literature indicated that increased instructor/student interaction should lead to greater student satisfaction and retention in online instruction. The researcher operationalized interaction as announcements to the class, emails sent, amount of feedback given on assignments, and number of times the instructor logged into the course. Retention was measured by the number of students that successfully completed the class. Data were pulled from all online classes taught at Itawamba Community College during the fall 2013 semester. This data set included a total of 397 courses.

Unique to this study was that all courses used standardized material that control for content delivery. This empirical study used a quantitative approach through a causal-comparative design. The statistics computed included descriptive statistics, Pearson's product-moment correlation, and one-way ANOVA. In summary, the analysis did not support the research hypothesis in that there were no statistically significant differences in retention between the means of the instructors that met expected thresholds of the

independent variables. Limitations in the current study may have influenced the outcome

of the analysis and recommendations for further studies are discussed.

DEDICATION

This dissertation is dedicated to my son, Tyler. Thank you for your unconditional love, support, and patience.

## ACKNOWLEDGEMENTS

I would like to express my appreciation to my major professor, Dan Stumpf. His guidance and instruction have influenced me in untold ways as an administrator and future leader. I would like to thank my family and friends for their unwavering support through this project. I would additionally like to express my gratitude to my ICC family for their encouragement and opportunity to finish this degree.

TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

CHAPTER I

INTRODUCTION

Mississippi community colleges strive to deliver exceptional educational and job training opportunities to individuals in their districts through adult basic education, general education development, workforce training, career technical education, and academics through traditional, blended, and online modes of delivery. The Mississippi community college system is one of the oldest in the nation and has a strong history of leadership. Through this leadership the Mississippi Virtual Community College (MSVCC) was formed in January 2000 to deliver online education through a cooperative organization. The consortium has experienced unparalleled growth from its initial offerings of 29 classes with 1,382 enrollments to an increase in the fall of 2013 of 2,994 classes taught by 1,532 instructors for a total of 68,142 enrollments (Mississippi Community College Board, 2014).

Changing Course: Online Education in the United States (Allen & Seaman, 2013) is an annual report focusing on distance learning trends across the nation. Based on responses from over 2,800 colleges and universities, 69% reported that online learning was a critical part of their institution's long-term strategy; this is partly due to the continued increases in online enrollment. The study reports that there was a 9% increase for online enrollments as compared to the modest 1% growth of overall student population. Moreover, 32% of all higher education students in the United States take at

least one course online (Allen & Seaman, 2013). With this growth of online enrollment at the college level, there has developed a need to increase the number of students who successfully complete their course, certificate, or degree online (Hachey, Wladis, & Conway, 2012; Smith, Lange, & Huston, 2012).

Completion rates in online classes are at the forefront of issues for most colleges in the United States having distance learning programs. The profound priority of retention is reflected by the number of state and federal agencies that request colleges and universities to report data pertaining to the issue (Stover, 2005). These recent demands for student success (such as the American Graduation Initiative) have emerged at the same time that many colleges are facing limited resources and funds. This will inevitably create situations in which colleges and universities must become creative in developing new strategies to help students be successful (Smith et al., 2012). All in all, retention is a salient issue for colleges, whether it is defined as students completing a single class, retaining them from semester to semester, first year to second year, or through completion of degrees or certificates.

Habley, Valiga, McClanahan, and Burkham (2010) report that a national survey conducted among community colleges in the United States indicated that there are several factors that may contribute to why students do not succeed in college. These factors may include individual-level causes such as student readiness for college level work, placement scores, and grade point average. They may also include environmental characteristics such as family responsibilities, job instability, and socio-economic stress (Habley et al., 2010). Additionally, the role of the instructor cannot be underestimated in discussions about persistence in the community college classroom. There are several

student retention theories that draw a connection between the success level of college students and their perceived level of interaction with faculty (Saret, 2015; Tinto, 1987; Tinto, Russo, & Stephanie, 1994).

In most cases, retention is reported to be lower in online courses when compared to face-to-face classes (Dietz-Uhler, Fisher, & Han, 2008; Hachey et al., 2012; Stover, 2005; Tyler & Smith, 2006). In many cases the difference between traditional and online retention is estimated at 15 to 20% with an estimated average of 60% retention for most online programs (Stover, 2005). Smith et al. (2012) argue that retaining online students is a challenge that must be addressed through institutional responses that are practical and mindful of resources. The role of the instructor will remain profoundly important in both online and face to face alike (Stumpf, McCrimon, & Davis, 2005).

Literature available for online student retention is limited at the community college level (Fike & Fike, 2008). When trying to determine predictors of retention and student success, most of the empirical studies have concentrated on traditional students, which would include students ranging in age from 18 to 24 and students who are high school graduates. It is important to recognize, however, that community colleges enroll a different demographic population with over half of their students being above the age of 25 (Fike & Fike, 2008). Because retention is an important issue for 2-year schools as well as universities, the investigation of the predictors of retention amongst community college students is of paramount significance.

This study was conducted in order to expand the development of research on student retention in online learning and instruction at the community college level. The research project should contribute to a more nuanced understanding of the process of

online course development, instructor interaction, and student retention for online programs as a whole. Findings from this study support the conclusion that there should be continued development of different approaches to retention research of online instruction.

## Statement of the Problem

Retention is a prominent issue for community colleges, leading to a greater need for information on how to predict retention. Retention is just as important in online instruction as it is in the face-to-face classroom. Given the importance of the instructor in the online classroom of a rural community college, is it possible to inform online faculty how retention is related to their frequency of interaction with students? The problem of this study is the question of whether the retention of students in online education in the rural community college may be related to instructor interaction as measured by the number of emails, announcements, feedback on assignments, and frequency of logins to the classroom, such that increased instructor interaction would predict increased retention.

## Purpose of the Study

The purpose of this study was to examine the relationship between instructor interaction with students and retention in online classes in a rural community college. Instructor interaction is represented by four independent variables: number of emails sent to the class, number of announcements posted, number of assignments on which feedback was posted, and number of logins to the course. Retention was measured by the number of students who successfully completed the class.

Data were obtained/gathered from all online classes taught at Itawamba Community College during the fall 2013 semester. This data set included a total of 397 courses. Unique to this study was that all courses used standardized material that control for content delivery. Because content delivery was the same for all courses the only discernable difference with instruction was teacher interaction with students.

This empirical study used a quantitative approach through a causal-comparative design. The statistics computed included descriptive statistics, Pearson's product-moment correlation, and one-way analysis of variance (ANOVA). The study empirically explored the relationship between instructor interaction and online student retention to increase the knowledge of what factors will predict greater retention in the online classroom.

## Research Questions

The following research questions were answered in order to meet the purpose of the study:

1. Is there a relationship between instructor interaction as defined by number of emails sent to the class and retention in an online rural community college classroom?

2. Is there a relationship between instructor interaction as defined by number of announcements posted in the class and retention in an online rural community college classroom?

3. Is there a relationship between instructor interaction as defined by number of assignments on which written feedback was posted and retention in an online rural community college classroom?

4. Is there a relationship between instructor interaction as defined by number of logins to the class and retention in an online rural community college classroom?

Each of these variables were measured on a ratio level that lended itself to Pearson's product moment correlation analysis and one-way ANOVA.

Research hypotheses for this study were as follows:

1. There would be a strong, positive correlation between number of emails sent to class members and retention. The researcher expected as the number of emails sent to class members increased there would be a corresponding increase in retention.

2. There would be a strong, positive correlation between number of announcements posted in the course and retention. The researcher expected as the number of announcements in a class increased there would be a corresponding increase in retention.

3. There would be a strong, positive correlation between number of modules with feedback comments in the grade book and retention. The researcher expected as the number of feedback comments increased there would be a corresponding increase in retention.

4. There would be a strong, positive correlation between number of logins by the instructor and retention. The researcher expected as the number of logins by the instructor increased there would be a corresponding increase in retention.

## Significance of the Study

Examining the relationship between instructor interaction and retention in online learning will contribute to the knowledge of retention literature. Early works primarily focused on comparing online learning with face-to-face learning environments. There seemed to be a consensus that online instruction should strive to create a sense of community in order to engage the student. It was thought that if instructors could virtually recreate the face-to-face atmosphere, students would feel more engaged and students would be retained. More recent research suggests that this sense of community may be less important to some students than the structure of the class and engagement with the instructor. Consequently, these factors are being found as more pertinent to student success and retention (Drouin, 2008).

One of the most difficult aspects of studying retention is looking beyond student characteristics and looking at the structure of a course or behaviors of the instructor. The aforementioned limitations have restricted the number of existing empirical studies on retention in online classes at community colleges, supporting the assertion that more analysis is needed in this area. This study addressed these limitations by exploring the relationship between instructor interaction and student retention in an online program that uses standardized courses.

## Limitations and Delimitations

The researcher acknowledged the following possible limitations and delimitations of this study:

1. The study was limited to one online program at a rural, public 2-year school in Mississippi.

2. The study included data only obtained from one semester, fall 2013 semester.

3. The study depended on data collected from available course statistics in the current Learning Management System, which could pose a threat to the internal validity of the study.

4. The operationalization of the independent variable may be cause for concern due to a lack of strong literature to draw from which to draw. This may call into question construct validity of these variables.

5. The experience level of the student with technology may impact the internal validity of the results.

This study was an attempt to empirically measure the influence that instructor interaction has on student retention in standardized online classes. While this study may be innovative in its use of standardized courses, it also presented limitations. Whenever measuring human behavior it can be tenuous, and without strong literature to consult, the selection of measures chosen for this evaluation may have been a set-back for the overall evaluation.

**Definition of Terms**

The following terms are defined for the purpose of this study:

1. *Asynchronous learning* refers to learning that occurs at any time. Instructors make materials and assessments available and students may complete them at any time (elearners.com, 2013).

2. *Attrition* is defined as a reduction in a number. In reference to education, attrition is used to determine the number of students who drop-out of a course, program, or college (Smith et al., 2012).

3. *Community college* is defined as a regionally accredited institution of higher education that is committed to serving the needs of the community in which it is in. A community college offers the Associate degree as its highest degree (Vaughn, 2006).

4. *Distance education* is a formal educational process in which the majority of instruction in a course occurs when students and instructors are not in the same physical space. Instruction may be synchronous or asynchronous (sacscoc.org, 2013).

5. *Interaction* refers to student and instructor communication as well as student communications among themselves (Gold, 2003).

6. *Learning Management System (LMS)* is a software application that serves as a vehicle for the administration and tracking of elearning education.

7. *Model shell* refers to a concept developed by the eLearning department at Itawamba Community College. The model shell is created to adhere to the Southern Association of Colleges and Schools recommendations, Itawamba Community College standards and eLearning criteria. Each model shell has standardized menus with consistent course information.

8. *Online course* is defined as a delivery method where at least 80% of the course content is delivered online (Allen & Seaman, 2011).

9.  *Retention* refers to the number of students who are retained for a defined length of time. The quantitative definition of retention varies (Dietz-Uhler et al., 2008).

10. *Synchronous learning* requires students and instructors to be online at the same time (elearners.com, 2013).

CHAPTER II

REVIEW OF THE RELATED LITERATURE

**Introduction**

Community colleges are in the business of teaching and learning. Instruction is defined by Cohen and Brawer (2008) as "the process of causing learning. Learning may occur in any setting, but instruction involves arranging conditions so that it is predictable and directed" (p. 464). Community colleges have been at the forefront of the development of online instruction primarily due to the flexibility and open access philosophy that is characteristic of the system. Research has demonstrated that retention is consistently 10 to 15% lower in online classes when compared to traditional modes of delivery. Online retention is a salient issue for colleges, particularly those with large online programs (Cohen & Brawer, 2008).

This chapter is a review of the literature related to online delivery methods of instruction and retention. The review begins with a brief look at the history of community colleges in the United States and community and junior colleges in Mississippi. This is followed by a brief discussion about the creation of the MSVCC system. Online instruction is subsequently defined, and current trends in online education are reviewed. This is followed by an assessment of the varying definitions of retention. Next, there is a theoretical review of retention theories. An investigation of literature related to online

retention and online interaction will be conducted. Finally, a summary will conclude chapter two.

## History of Community Colleges

The oldest existing community college, Joliet Junior College, was founded in 1901 by J. Stanley Brown and William Rainey Harper. Their vision was to create a junior college that taught the first 2 years typically instructed by 4-year universities. The college was designed to allow students to remain in their communities while pursuing higher education (Cohen & Brawer, 2008; jjc.edu, 2013). The authoritarian book, *The American Community College*, cites the second annual meeting for the American Association of Junior Colleges that took place in 1922. At this meeting the definition of a junior college was defined as "an institution offering two years of instruction of strictly collegiate grade" (p. 4). Cohen and Brawer (2008) state that in 1925:

> The junior college may, and is likely to, develop a different type of curriculum suited to the larger and ever-changing civic, social, religious, and vocational needs of the entire community in which the college is located. It is understood that in this case, also, the work offered shall be on a level appropriate for high-school graduates (p. 4)

Junior colleges grew exponentially since their founding in 1901. It was reported that twenty existed in 1909, which increased to 170 within 10 years. By 1922, the majority of states contained at least one junior college, thus making education accessible to those that were previously excluded. With the expansion of 2-year colleges, changes developed. Cohen and Brawer (2008) state the "term junior college was applied more often to the lower-division branches of private universities and to two-year colleges

supported by churches or organized independently, while community college came gradually to be used for the comprehensive, publicly supported institutions" (p. 4). Cohen and Brawer (2008) currently define the community college as "any institution accredited to award the Associate in Arts or the Associate in Science as its highest degree" (p. 5).

Community colleges have transformed over time to develop entrenched missions that set them apart from other institutions of higher education. The overarching charge is to provide access to higher education and services to better serve the community. According to Vaughn (2000), community colleges have specifically five missions or goals: open access, lifelong learning, community service, comprehensive education, and teaching and learning. In order to reach these goals the community college serves the following functions: academic transfer programs, vocational–technical education, continuing education, remedial education, and community service (Cohen & Brawer, 2008; Vaughn, 2000).

According to the American Association of Community Colleges (AACC), there are currently 1,132 community colleges in the United States. These colleges are serving approximately 13 million students through credit and noncredit offerings. Describing the community college student is a problematic task, due to the ever-changing nature of community college student profiles. Cohen and Brawer (2008) aptly describe these students as being many in number and variety. Community college student populations include increasing numbers of minority, first-generation, and disabled students. There has been a significant rise in the number of students needing at least one remedial course and financial aid. The typical student attending a community college would be a 28 year-old, white female. Over 60% of students are over the age of 22 and considered to be

13

nontraditional. The majority of students are female making up 57% and white students making up 52% of the overall population. Another major difference between university and community college students is that approximately 40% are first generation college students. These demographic trends can be attributed to many aspects of community college culture including open door access, which does not restrict admission to the college, flexibility in scheduling, by offering day, evening, and online classes, and a variety of academic and vocational programs (AACC.edu, 2013; Cohen & Brawer, 2008).

## History of Mississippi's Community and Junior Colleges

The Mississippi junior college system was created in 1922 with Senate Bill No. 251, introduced by Dr. Julius Christian Zeller from Yazoo County. The first junior colleges in Mississippi originated from agricultural high schools. Pearl River County Agricultural High School in Poplarville and Hinds County Agricultural High School in Raymond were the first to offer educational opportunities beyond a high school diploma. During the 1922-23 academic year, Hinds County enrolled 30 students, and Pearl River County enrolled 13 students. By 1929, eleven junior colleges had been created and are referred to as the "original" junior colleges. The community colleges in Mississippi are strategically placed in rural areas to expressly serve the needs of the residents of these rural communities (Young & Ewing, 1978).

The Mississippi junior college system was designed to maintain an open door policy that allowed any student to attend college. Mississippi community and junior colleges have a rich history of meeting the needs of their students. Scholarships, transportation, and work opportunities were historically available for students that lacked

the financial means to attend. According to Young and Ewing (1978), by law, each agricultural high school was required "to have a farm, a dairy, a garden, and other facilities in land, animals, and equipment" (p. 8).

By the end of 1949, there were four additional schools created. These included Meridian Municipal Junior College, Itawamba County Agricultural High School, Prentiss County Agricultural High School, and Coahoma County Agricultural High School. The names of the schools were changed by law in 1950 from agricultural high Schools to junior colleges. This change was important to not only distinguish these schools from high schools, but it allowed supervisors to designate local tax dollars for junior colleges. Mississippi currently has fifteen community colleges (Young & Ewing, 1978).

## Mississippi Virtual Community College

In the mid 1990's Mississippi's community colleges received a bond to advance several technologies. With improved capabilities, research began on a statewide offering of online classes. This led to the creation of the MSVCC in January of 2000 with an enrollment of 1,382. The rationale behind this consortium was to provide instruction to those students that were limited in attending face to face class for various reasons such as finance, travel, family constraints, and work schedules. The colleges recognized the need to provide access to higher education to a population of people who could not physically attend classes in a satisfactory way by offering courses and services through distance learning (Mississippi Community College Board, 2014).

The MSVCC is a consortium of Mississippi's 15 community colleges that leverage their collective distance learning resources such as faculty, courses, support services, and technology. Through this consortium, students take courses from

15

community colleges anywhere in Mississippi while getting support services from their local college. In the fall semester of 2013, the MSVCC provided instruction to over 28,000 students through 68,142 enrollments (Mississippi Community College Board, 2014).

## Online Instruction

Online classes are defined as an educational delivery mode where at least 80% of the course content is delivered online (Allen & Seaman, 2011). Online distribution of material may occur in a synchronous or asynchronous fashion. Synchronous learning requires that the teacher and student be online at the same time. Examples of synchronous learning tools include online chat, instant messaging, whiteboard collaboration, and web conferencing. Classes that support this type of instruction can often mirror many of the techniques used in traditional, face to face classrooms. Asynchronous learning occurs anytime and anywhere. Examples of asynchronous learning tools include discussion forums, assessments, and activities that may be completed at any time. Online classes that support this type of learning give the student more control over when and where communication and completion of assignments occur. It also gives the student more time to reflect and respond (Gold, 2003).

Colleges and universities have increased distance offerings exponentially, and online learning has become commonplace over the last fifteen years (Palloff & Pratt, 2007). In 2012, there were 6.7 million students taking at least one online class (Allen & Seaman, 2013). This tremendous growth has been partially driven by colleges that were searching for new avenues of enrollment and ways to meet changing student demands. More and more students are choosing online education as a mode of course delivery

because of increasing environmental demands such as travel expense and work and family obligations. Interestingly, more traditional students are choosing online course delivery. Latest trends show that recent high school graduates are choosing online classes at higher rates (Palloff & Pratt, 2007).

Online instruction and completely online programs have particularly boomed at community colleges. This may be attributed to the fact that online education fits very well with the community college's mission of open access and commitment to meet students where they are. Online education allows community colleges to meet their goals by providing a wide range of classes and programs to students (Hachey et al., 2012).

During this rapid increase, there have been mixed reviews by instructors and administrators about the quality of online instruction. In the past, many saw online learning and instruction the same as traditional and approached course design in this manner (Stumpf et al., 2005). Fortunately, there has been an increase in research and literature, and there has been a shift in instructional practices and course design. One of the main findings is that learning and teaching over a distance requires active participation. Students can no longer simply login but must contribute to the educational process with active submission of work and communications (Palloff & Pratt, 2007). With an increase in quality design and student achievement, attitudes toward online education have been changing. Over the last ten years, the number of administrators that report online learning was a critical part of their long-term strategy has steadily increased and in 2011 was around 65%. In this study, 67% of academic leaders rated online student outcomes as the same or superior to those in traditional (Allen & Seaman, 2011).

**Retention**

Retention is an important issue for colleges and universities today. ACT's 2010 "What Works in Student Retention Survey" reports that 69% of responding institutions have a person on their campus that is responsible for retention. Two-thirds of these same institutions report having a specific goal for first to second year retention and have numerous strategies in place to address these issues specifically (Hadley et al., 2010). One area of difficulty when reviewing retention literature is the varying definitions of retention. It becomes difficult to compare results from research studies because often the same information is not being compared. Examples of different definitions of retention would include number of students successfully completing a course, number of students returning from semester to semester, and number of students that return from one year to the next.

In addition, there are different definitions of retention based on the mode of delivery (traditional vs. online). Classifications of online retention can vary from conservative to very liberal. For example, conservative definitions of retention include the percentage of students whose name appeared on the roster at the beginning/end of the semester and percentage of students that started the first assignment and stayed until the end of the semester. Liberal definitions of retention include the percentage of students that do not withdraw from a class and the percentage of students that earn a C or better (Dietz-Uhler et al., 2008). In addition to a disagreement about the definition of retention, there is little consensus about the meaning of attrition (Stover, 2005). Examples of attrition would include differences between a student initiated drop and withdrawal of a student due to excessive absences or failing grades. Research has demonstrated that

18

retention is consistently 10 to 15% lower in online classes when compared to traditional

classes (Hachey et al., 2012). These differences contribute to the importance of

developing a consistent definition of online retention and uncovering possible causes of

students' lack of success.

## Theoretical Review

There are several student retention theories that postulate why students may

choose to remain or eventually leave school. Bean and Metzner (1985) put forth a non-

traditional student attrition model that focuses on a students' background and how this

can influence a person's decision on whether or not to stay in school. Specifically, the

model argues that there are four sets of variables that influence through direct and

indirect means (Bean & Metzner, 1985).

The first set would include academic performance. The argument is that students

with poor academic performance in the past (high school) will be more likely to drop out

in the future. The second group of variables is referred to as intent to leave, which is

influenced by psychological outcomes and academic variables. The next set of variables

includes background and defining variables such as high school performance and

educational goals. Lastly, environmental variables will have a substantial direct effect.

The theory uses path modeling to predict student dropout rates. The authors give the

example that poor academic performance does not directly influence dropout rates but

instead directly influences college grades; this, in turn, has a significant effect on dropout

rates (Bean & Metzner, 1985).

Astin (1991) shaped his input-environment-outcome model on retention to help

explain how environment plays a role. In this model the author argues that output, for

example completed degree or the number of graduates, has to be evaluated in terms of inputs such as student ability, gender, and age. The environment itself completes the model, and this would include such things as the courses or programs that are offered, the facilities, faculty, or peer groups of which the student is exposed. The model requires that in order to assess student outcomes one must accurately measure input, output, and environmental factors (Astin,1991).

A major contributor to retention literature has been Tinto and his work in higher education. Tinto (1993) has written a student development theory that incorporates a student integration model. This theory proposes that students' progress through stages as they move from being a first time in college student to a mature student. Variables that influence these stages are specifically academic and social integration. It is the interaction between these variables that predict student retention or, in other words, the decision whether or not a student will decide to stay or leave college in their first year (Tinto, 1993).

Transactional distance theory developed by Moore (1997) is suitable for studying online retention and will be the guiding theoretical model for this study. The concept of transactional distance is characterized by the teacher/learner relationship that exists when they are separated by time and space. The theory posits that the quality of teaching and interaction between the instructor and student is less related to geographic location and more with the quality of interaction. According to the theory, increased dialogue results in a lower degree of transactional distance. When applying this theory to online learning we would focus on the relationship between structure, interaction, and dialogue in courses and how this impacts the learner. Higher levels of interaction should shrink the

transactional distance between the instructor and learner in the online environment and positively impact retention rates.

## Online Retention Literature

Issues of student online retention are becoming more important for colleges and universities as these institutions continue to struggle to retain students (Dietz-Uhler et al., 2008). Previous studies on distance learning retention have focused on similarities and differences between online and traditional classrooms. Many of the conclusions were that recreating the traditional classroom by constructing communities of learners was the only effective way to have successful student outcomes. As online programs have grown in universities and colleges, there has been a shift in the research to focus on additional factors such as structure of the courses and students' online experience that may have a more direct influence on retention (Blackmon, 2012; Hachey et al., 2012; Mensh, 2013).

Student retention is also an under-researched problem in community college literature. This problem is particularly evident when compared to the vast amount of information and empirical inquiry available on universities (Fike & Fike, 2008; Wild & Ebbers, 2002). When attempting to determine predictors of retention and student success, most of the empirical studies have concentrated on traditional students which would include students ranging in age from 18 to 24 and students who are high school graduates. It is important to recognize that community colleges enroll a different demographic with over half of their students being over the age of 25 (Fike & Fike, 2008). Because retention is an important issue for 2-year schools as well as universities it seems even more important to investigate the predictors of retention associated with community college students.

According to Dietz-Uhler et al. (2008), students report several reasons for not completing online classes that usually fall within three categories: personal, academic, and institutional. Personal issues include such explanations as family and work obligations, job changes, and private problems. Academic reasons can be traced back to the increasing number of students entering college that require remedial education. Poor high school performance or incomplete high school degrees additionally contribute to students not completing online courses. Institutional reasons include course design and not having a connection with the teacher or other students (Dietz-Uhler et al., 2008).

Gold (2003) conducted a research study that goes a step further than traditional survey research that is typical for higher education. The author investigates retention by utilizing data gathered from the course management system for quantitative analysis. In this study, the author notes that advances in technology now allow the automatic recording of course interaction, the exact number of times faculty and students were active in a course, as well as the type of activity he/she was performing in order to determine the quality of interaction experienced in the class. The author looked at specific variables including the number of postings in a discussion thread, the number of grade book postings, number of class announcements, and use of chat rooms. What the author found was that the type of interaction was more important than the quantity of interaction (Gold, 2003).

Course length offerings have also been investigated as to their impact on student retention and success. As distance learning programs have grown, strategies in course length offerings have been employed to better fit the need of the learner. Many traditional and nontraditional students alike desire shorter term offerings in order to complete

courses, certificates, and degrees in a timely manner. Most course offerings are taught in 4, 8, and 16 week intervals. Mensch (2013) conducted a study on how course length impacted student success and retention rates. The author found that students were more successful in shorter, 4 week terms as compared to longer length courses of the same content (Mensch, 2013).

**Online Course Structure**

Online course structure refers to the way a course is designed and organized in order to facilitate instruction and communication between the teacher and the learner (Fabry, 2009). There are several tools and technologies that may be used to build a course to enable instruction and communication in synchronous and asynchronous ways. Online course structure also includes the way that content is organized. Material should be organized in a clear and straightforward manner because much of online learning is self-directed. It is easy for students to become discouraged if they become lost in the learning environment (Creasman, 2012). The way that an online course is structured can have a direct impact on student success and retention. This becomes very important in order to facilitate understanding and learning. If the course is designed well, the instructional goals will be equal to those in face-to-face deliveries (Morrison & Ross, 2007).

Dietz-Uhler et al. (2008) ask the following question: How can course design or structure promote student success? As stated previously, when students were asked why they dropped an online class, many times institutional reasons were given which includes course design and the feeling of not being connected to others. Baker (2010) states that researchers are beginning to move beyond the question of whether online instruction is as effective or the same as traditional instruction. The focus has shifted to identifying

instructional strategies that are more effective for online learning as opposed to traditional. The authors state that current and future studies that focus on empirically validating the best instructional practices are the most useful. These best practices can provide clear direction on the structuring of more effective online classes (Baker, 2010; Dietz-Uhler et al., 2008; Tobin, 2014).

Tobin (2014) argues that the trend of many online learners in higher education is to primarily use a mobile device to complete their studies. This development leads course designers to not only present materials in an effective manner for the online learner but also in a universal design for learning. Following the Universal Design for Learning allows materials to be accessible to everyone. Many students report frustrations with technology as a reason why they drop out of online classes. Following a course design that eliminates these problems should lead to higher levels of retention and student satisfaction (Tobin, 2014).

## Interaction

The structure of a course is very important in how it creates interaction between the instructor and student and contributes to the overall experience. The asynchronous nature of some online classes is less important if the structure of the course allows for meaningful interaction. Dietz-Uhler et al., (2008) note that one of the structural reasons students drop online courses is that they do not feel connected to the instructor or other students. The authors conclude that there needs to be meaningful instructor-student interaction and student-student interaction. They also surmise that highly engaged instructors foster learning. The relationship between interaction and student success is supported by Gold (2003), who claims quality education at a distance is directly related

to the type of communication between the student and instructor. When the quantity and quality of communication between participants is higher, the level of educational experience is increased. Baker (2010) states that interaction is central to the learning experience and necessary for a successful learning experience for online as well as traditional learning. It is thought that the more interaction between the instructor and student the more effective the communication. This may be the foundational thought, but some instructors seem to engage in more successful interactions when compared to others (Baker, 2010).

Garrison, Anderson, and Archer (2010) argue that a meaningful educational experience is embedded in a community of inquiry that includes students and teachers. Learning occurs within this community through the interaction of three elements: cognitive presence, social presence, and teaching presence. Looking at these concepts individually, cognitive presence refers to the extent to which the student is able to construct meaning through continuous communication. The authors define social presence as the ability of the participants (students and teachers) to share their personal lives and personalities with the community. This sharing creates a more meaningful connection between the participants as they are seen as more real. Teaching presence includes two separate components. The first is the design of the course and how it impacts the student's educational experience. This is created through the organization and presentation of the material. Specifically, this would include the design of learning activities and development of assessments. The second component includes the facilitation of the course. The teacher supports and enhances both cognitive and social presence with the students (Garrison et al., 2010).

The community of inquiry within an online class has been questioned as to whether it is the same experience as compared to the traditional classroom. This is primarily because much of the nonverbal communication is removed when an online class is primarily a writing or text-based class. The question is being asked if the quality of learning is being diminished. The authors argue that there are some advantages to text-based learning when communicating asynchronously because there is more time for reflection, and this may be preferable to oral communication, particularly if the focus is higher-order cognitive learning. Research has suggested that written communication is correlated with critical thinking (Garrison et al., 2010). It could be argued that text-based communication is related to the achievement of learning objectives because students have the time to reflect and respond to assignments and communication (Gold, 2003).

Instructor presence is an additional factor for successful interaction. Also referred to as virtual visibility, it is thought that the instructor must be "seen" in order to be present in the online environment. Presence in an online class is established through action. Baker (2010) defines this presence by developing consistent patterns of interaction, providing substantive feedback, being accessible for communication, and effectively moderating discussions. Tools that allow this action to take place would include online chats, discussion boards, and email. These tools allow students to interact with one another about the course and interact with the instructor. According to Blackmon (2012), this is considered to be active learning. Active learning can lead certain students to feel a level of inclusiveness and encourage them to enthusiastically participate. For instance, some students that would not talk to other students or the instructor unless forced may take advantage of online forms of communication. The

author does caution that in some instances instructor presence may inhibit student/student interaction. Communication areas where instructors are active, such as a discussion forum, may create a situation in which the students stop communicating with one another and become more concerned about communicating with the instructor (Blackmon, 2012).

Research supports interaction as being an important component when considering student outcomes, but there are still questions about the extent and nature of the interaction. It is important to have student-student and student-instructor interaction as research has found that a student's perception of the quality of interaction is related to their performance in the class (Bailie, 2012; King, 2014; LaBarbera, 2013; Picciani, 2002). Bailie (2012) reports that students are attracted to instructors that demonstrate an inviting attitude when communicating. The author states that there is sufficient evidence to support that affirmative communication is critical with successful student outcomes. Specifically, the author argues that instructor immediacy is an important factor, and committed instructors will employ techniques that build this sense of immediacy within the online environment. Immediacy is defined as behaviors that create closeness and interaction with others by reducing the perception of distance. Gorham (1988) suggests several behaviors that establish immediacy such as self-disclosure, praising of student's work or corrective comments, asking questions, and initiating conversations. These are all in an effort to increase the perception by the student that the instructor is connected and present and that he/she is invested.

## Summary

This chapter was a review of the literature related to online delivery methods of instruction and retention. The review began with a consideration of the history of

community colleges in the United States and Mississippi. The MSVCC system was reviewed. Online instruction was then defined and current trends in online education were discussed. This was followed by a brief consideration of varying definitions of retention. Next, there was a theoretical review of retention theories positing that transactional distance theory would be the guiding theoretical framework for this study. An investigation of literature related to online retention and online interaction was conducted.

The relationship between retention and online learning is an area that is important and needs additional research. Most early research primarily focused on comparing online learning and face to face environments. There seemed to be a consensus that online learning should strive to create a sense of community in order to engage the student. It was thought that if instructors could virtually recreate the face-to-face atmosphere students would feel more engaged and be retained. Over time this line of thought has not borne out as expected. More recent research is suggesting that this sense of community may be less important to some students than the structure of the class and interaction with the instructor. What is noticeably missing from the literature is an empirical study of online learning from a structural perspective. One of the most difficult aspects of studying retention is looking beyond student characteristics and looking at the structure of a course or behaviors of the instructor. This is due predominantly to the fact that each course is created or taught in a different manner, and it is almost impossible to control for a myriad of instructional variables. This study investigated the influence of instructor behaviors on retention in structurally similar online courses at a rural community college.

CHAPTER III

METHODS

**Introduction**

Chapter three summarizes the research methods for this study. The purpose of this study was to examine the relationship between instructor interaction and retention in the online rural community college classroom. The literature indicated that increased instructor/student interaction should lead to greater student satisfaction and retention in online instruction. By exploring the relationship between instructor interaction predictors such as communication, feedback, and activity in online courses, the literature on distance learning programs has expanded. This chapter includes a description of the research design, source of data used in the study, data collection, and description of statistical techniques used.

**Research Design**

This empirical study used a quantitative approach through a causal-comparative design. The statistics calculated included descriptive statistics, Pearson's product-moment correlation, and one-way ANOVA. The following research question was proposed in order to meet the purpose of the study:

1.  Is there a relationship between instructor interaction variables as defined by number of emails sent to the class, number of announcements posted in

29

the class, number of assignments with written feedback, and number of

logins to the class and retention in online classes of a rural community

college classroom?
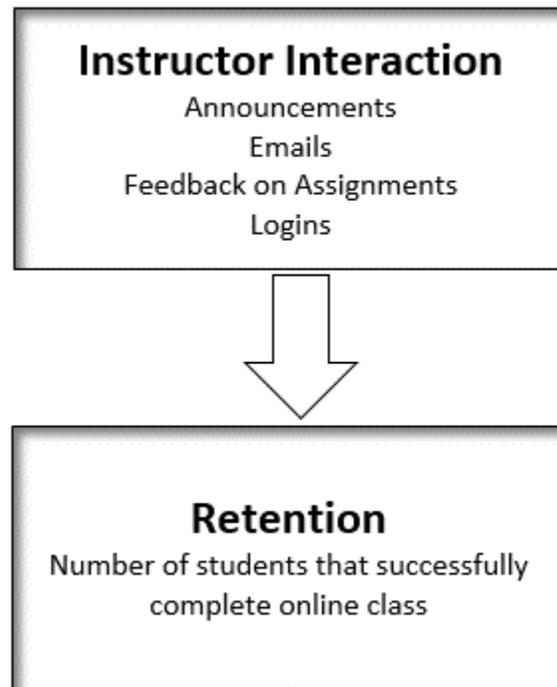


*Figure 1.*      Research Question.

The step by step procedure used to conduct this study includes:

- The source of data included 397 online courses taught at Itawamba

  Community College during the fall 2013 semester.

- Online instructor responsibilities outlined in the ICC eLearning Policies

  and Procedures manual require weekly announcements, emails, and

  grading of assignments. Based on these guidelines and the standard fall

  academic semester the expected frequency of activity was fifteen.

- Independent Variables for this study included:

    o Emails – measured as number of emails sent to the class and divided into three groups based on frequencies: below expectation (0-14), meets expectation (15), above expectation (16 and above).

    o Announcements – defined as number of announcements posted in class and divided into three groups based on frequencies: below expectation (0-14), meets expectation (15), above expectation (16 and above).

    o Feedback – defined as number of assignments on which written feedback was posted in grade book and divided into three groups based on frequencies: below expectation (0-14), meets expectation (15), above expectation (16 and above).

    o Logins – defined as number of logins by the instructor to the class and divided into three groups based on frequencies: below expectation (0-14), meets expectation (15), above expectation (16 and above).

- Dependent variable for this study:

    o Retention – defined as the number of students that successfully completed the class.

- Data from these courses were extracted from the learning management system, Canvas, at the aggregate course level.

- Canvas has a communication system that records each email between the instructor and student. The researcher counted the number of course level

emails from the communication center for each class and recorded using a nondescript identifier.

- Canvas has an interactive announcement system that allows students to reply to posts placed by instructors. The researcher counted the number of course level announcements posted for each course and recorded using a nondescript identifier.

- Data were extracted from the grade center in Canvas to measure the number of modules that the instructor provided written feedback. The researcher counted the number of assignments for each course and recorded using a nondescript identifier.

- Access reports were run for each course taught during the fall semester in order to measure the number of times each instructor logged into the course. The researcher counted the number for each course and recorded using a nondescript identifier.

- Retention was calculated by the number of students that successfully completed the course.

- Descriptive statistics were reported for the four independent variables and the dependent variable. This included the mean and standard deviation.

- Correlational statistics were reported for each variable to determine the statistical relationship between each of the variables. The statistic, Pearson's product moment correlation was reported for the variables used in the study.

- A one-way ANOVA was performed for each independent variable. The

  researcher proposed that each independent variable was thought to have an

  effect on retention. Each independent variable has three levels: below

  expectation, meets expectation, and above expectation. The researcher

  compared the means for significant differences.

Table 1

*ANOVA Independent Variable: Emails*

| Group 1: Below expectation | Group 2: Meets expectation | Group 3: Above expectation |
| --- | --- | --- |
| Dependent Variable: Retention | Dependent Variable: Retention | Dependent Variable: Retention |

Table 2

*ANOVA Independent Variable: Announcements*

| Group 1: Below expectation | Group 2: Meets expectation | Group 3: Above expectation |
| --- | --- | --- |
| Dependent Variable: Retention | Dependent Variable: Retention | Dependent Variable: Retention |

Table 3

*ANOVA Independent Variable: Feedback*

| Group 1: Below expectation | Group 2: Meets expectation | Group 3: Above expectation |
| --- | --- | --- |
| Dependent Variable: Retention | Dependent Variable: Retention | Dependent Variable: Retention |

Table 4

*ANOVA Independent Variable: Logins*

| Group 1: Below expectation | Group 2: Meets expectation | Group 3: Above expectation |
|---|---|---|
| Dependent Variable: Retention | Dependent Variable: Retention | Dependent Variable: Retention |

Identify Data Source: 397 online classes fall 2013 semester

Establish expectations: ICC policy requires 15 emails, announcements, and feedback sent to students per semester

Extract data from Canvas: Independent Variables (number of emails, announcements, assignments with feedback, and logins by instructor)

Calculate Retention: Dependent Variable (number of students that complete class)

Descriptive and Correlational Statistics: Report mean, standard deviation and correlation coefficients for variables in study
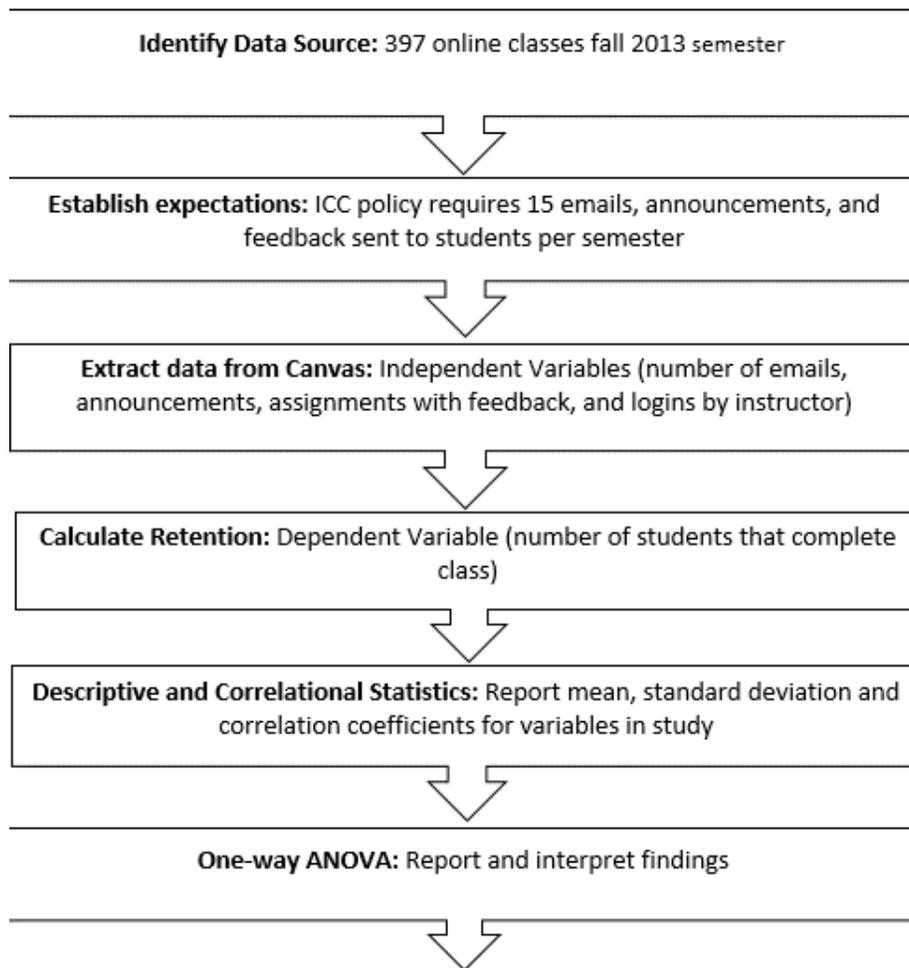
One-way ANOVA: Report and interpret findings

*Figure 2*.      Research Design.

**Data**

The units of analysis included all online classes taught during the fall 2013 semester at Itawamba Community College. This data source included a total of 397 courses. The courses that are included in this study are standardized and follow a "model shell" process of development.

Model shells are a concept developed by Itawamba Community College's eLearning department that is part of the MSVCC system. Within this department each discipline employs a lead online instructor who is credentialed in his or her specific teaching field. Lead online instructors are assigned the responsibility to create a model shell for each course taught in his or her specific discipline. These model shells are created to adhere to accreditation standards put forth by the Southern Association of Colleges and Schools Commission on Colleges, Itawamba Community College criteria, and eLearning department standards.

Each model shell has standardized organization of content to ensure a consistent experience for students. Course material will vary by discipline, but the route to the information will be the same for each course. The role of the lead online instructor is to oversee this model shell each semester in order to update the content and course information. The model shell is copied to every instructor each semester without altering content. The only differences a student should experience was interaction with individual instructors.

**Data Collection**

Data from these courses were extracted from the learning management system, Canvas, at the aggregate course level. Instructor interaction was measured by four

independent variables: number of emails sent to the class, number of announcements, number of assignments on which written feedback was posted in the grade book, and number of logins to the course. Retention was the dependent variable and was measured as the number of students that successfully completed the class.

The independent variables in this study to measure instructor interaction included:

1. Emails – Communication between the student and instructor may occur through several mediums within an online class. The current learning management system, Canvas, has a communication system that houses an email system. This variable was measured as the number of emails sent to the class during the semester.

2. Announcements – The announcements page was the entry point for the course. This area provided a form of communication between the instructor and student. This variable was measured by the number of announcements posted in the class during the semester.

3. Feedback – Feedback on assignments was a way for instructors to make expectations clear to the student and encourage participation. Model shells have a standard fifteen modules of assignments that give the instructor the opportunity to give the student feedback in the comments section of the grade book. Feedback was measured by the number of assignments the instructor provided feedback on, recorded in the grade book.

4. Login – The learning management system tracked the activity of each user. Login was measured by the number of times the instructor logged into the course through the access report generated by the system.

The dependent variable in this study was:

1. Retention – Definitions of retention vary considerably from study to study. Itawamba Community College defines retention as the percentage of completers in a course after "No-Shows" are culled from a class. A "No-Show" was defined as any student that did not participate in the first two weeks of class.

## Data Analysis

Data analysis for this study included descriptive statistics, correlational statistics and one-way ANOVA. Descriptive analysis included the mean and standard deviation. Correlational analysis included Pearson's product moment correlation in order to determine if an association existed between the variables. Pearson's product moment correlation coefficient was chosen because all the variables in this study are ratio level. The results revealed the strength and direction of the relationship.

The independent variable data were disaggregated into groups based on frequency. The disaggregation was guided by Itawamba Community College eLearning policy and procedures. Online courses followed a standard 15 week instructional calendar with required responsibilities that set the parameters of the groups. For each of the independent variables, instructors were either required or encouraged to perform one of the interactions with students on a weekly basis. This necessitated a frequency of 15 per semester. The independent variables were disaggregated into three groups: performs below expectation, meets expectation, and performs above expectation.

Instructors were required to send a course related email once per week. The independent variable *Emails* were disaggregated into three groups: below expectation (0-

14), meets expectation (15), and above expectation (16 and above). Instructors were required to post one course level announcement per week. The independent variable *Announcements* were disaggregated into three groups: below expectation (0-14), meets expectation (15), and above expectation (16 and above). Instructors were encouraged to provide written feedback on all assignments. The independent variable *Feedback* were disaggregated intro three groups: below expectation (0-14), meets expectation (15), and above expectation (16 and above). Instructors were required to grade and provide feedback within a one week of submittal that would necessitate logging into the class once a week. The independent variable *Logins* were disaggregated into the three groups: below expectation (0-14), meets expectation (15), and above expectation (16 and above). Research hypotheses for this study were as follows:

1. There would be a strong, positive correlation between number of emails sent to class members and retention. The researcher expected as the number of emails sent to class members increased there would be a corresponding increase in retention.

2. There would be a strong, positive correlation between number of announcements posted in the course and retention. The researcher expected as the number of announcements in a class increased there would be a corresponding increase in retention.

3. There would be a strong, positive correlation between number of modules with feedback comments in the grade book and retention. The researcher expected as the number of feedback comments increased there would be a corresponding increase in retention.

4. There would be a strong, positive correlation between number of logins by the instructor and retention. The researcher expected as the number of logins by the instructor increased there would be a corresponding increase in retention.

## Summary

Chapter three provided an overview of the research methods and data analysis for this study. This chapter included a description of the research design, data source, data collection, and statistical techniques. The purpose of this study was to examine the relationship between instructor interaction with students and retention in online classes in a rural community college.

CHAPTER IV

ANALYSIS OF DATA

**Introduction**

The purpose of this study was to examine the relationship between instructor interaction with students and retention in online classes at a rural community college. The following research questions were answered in order to meet the purpose of the study:

1. Is there a relationship between instructor interaction as defined by number of emails sent to the class and retention in an online rural community college classroom?

2. Is there a relationship between instructor interaction as defined by number of announcements posted in the class and retention in an online rural community college classroom?

3. Is there a relationship between instructor interaction as defined by number of assignments on which written feedback was posted and retention in an online rural community college classroom?

4. Is there a relationship between instructor interaction as defined by number of logins to the class and retention in an online rural community college classroom?

**Descriptive and Correlational Analysis**

Table 5 presented the descriptive statistics in the form of means and standard deviations for all the variables used in the analysis for this study. There were 397 courses in the fall 2013 semester. The independent variables for this study included *Emails*, *Announcements*, *Feedback*, and *Logins*. Online courses followed a standard 15 week instructional calendar that led the researcher to expect an average frequency of 15 for each of the variables.

Emails were defined as communication between the student and instructor that occurred through the email system housed within the learning management system. This variable was measured by the number of emails sent to the class during the semester. The mean for Emails was 9.1 with a standard deviation of 9.9. The mean is below the expected frequency of 15; however, the standard deviation indicated that there was a large amount of variation in the frequency in which instructors emailed their classes.

Announcements were defined as communication that occurred at the entry point of the course. Announcements provided a form of asynchronous communication between the instructor and student that was typically course related. This variable was measured by the number of announcements posted in the class during the semester. The mean for Announcements was 17.4, and the standard deviation was 8.9. The mean was above the expected frequency of 15, and the standard deviation also indicated that there was variability in the distribution of frequencies in which instructors were posting announcements to their classes.

Feedback given on assignments was a way for instructors to make expectations clear to the student and encourage participation. Feedback was measured by the number

41

of assignments on which the instructor provided feedback. These data were gathered

from feedback that was recorded in the grade book. The mean for Feedback was 4.9, and

the standard deviation was 5.1. The mean for this variable was significantly below the

expected frequency. The standard deviation was also low which indicates that there was

little variability in the frequencies in which instructors were giving feedback to student

on their assignments.

Login was measured by the number of times the instructor logged into the course

through the access report generated by the system. The mean for Login was 60.4, and the

standard deviation was 18.5. This variable was significantly higher than the expected

frequency. Instructors consistently appeared to be logging into their online classrooms

regularly.

Retention was defined as the number of students who successfully completed the

class. Retention for the MSVCC as a whole during the fall 2013 semester was 73.5. The

expectation for Itawamba Community College eLearning department was to exceed or be

in line with the retention level of the consortium. The mean for Retention was 76 with a

standard deviation of 14.1. This value slightly exceeds the expected value with moderate

variation with the frequencies between classes.

Table 5

*Descriptive Statistics by Variable*

| Variable | Mean | Standard Deviation |
|---|---|---|
| Emails | 9.1 | 9.9 |
| Announcements | 17.4 | 8.9 |
| Feedback | 4.9 | 5.1 |
| Logins | 60.4 | 18.5 |
| Retention | 76 | 14.1 |

Table 6 presented the correlation coefficients for all the variables included in this study. *Emails* appeared to be associated with *Announcements, Feedback*, and *Logins* in a significant, positive direction. The variable *Emails* was not significantly correlated to retention. *Announcements* appeared to be significantly associated with the variables *Emails, Feedback*, and *Logins* in a positive direction. *Announcements* was significantly correlated to *Retention* in an unexpected negative direction. *Feedback* was correlated with the variables *Emails, Announcements*, and *Logins* in a significant, positive direction. It was not significantly associated with *Retention*. The variable *Logins* was significantly associated with the other three independent variables in a positive direction but was not correlated to *Retention*.

Table 6

*Correlational Statistics by Variable*

|  | Emails | Announcements | Feedback | Logins | Retention |
|---|---|---|---|---|---|
| Emails | * |  |  |  |  |
| Announcements | .259** | * |  |  |  |
| Feedback | .206** | .154** | * |  |  |
| Logins | .345** | .119* | .191** | * |  |
| Retention | -.052 | -.178** | -.065 | -.009 | * |

*Correlations significant at the .05 level (2-tailed)
**Correlations significant at the .01 level (2-tailed)

**Research Question One**

Research question one: Is there a relationship between instructor interaction as defined by number of emails sent to the class and retention in an online rural community college classroom?

Data for question one was extracted from the learning management system, Canvas, at the aggregate course level for both emails and retention. For this research

question the independent variable was the number of emails sent and the dependent variable was retention as defined as the number of students who completed the class. A one-way ANOVA was conducted to compare the mean differences between instructors who fall below expectations, those who meet expectations, and those who exceeded expectations in sending emails to their class. Findings from this analysis were presented in Table 7. According to the output generated from ANOVA, there was not a statistically significant difference between the means of retention among these three groups at the .05 level of significance [$F(2,394) = 2.05$, $p = .13$].

The research hypothesis for this question was there would be a strong, positive correlation between number of emails sent to class members and retention. The researcher expected as the number of emails sent to class members increased there would be a corresponding increase in retention. Based on the findings, the researcher fails to reject the null hypothesis that there are no significant statistical differences in the means between these three groups.

**Research Question Two**

Research question two: Is there a relationship between instructor interaction as defined by number of announcements posted in the class and retention in an online rural community college classroom?

Table 7 reflects the output of the one-way ANOVA analysis for research question two. Data to answer question two were collected from the learning management system, Canvas, and included the number of announcements that the instructor posted and student retention. The output of the ANOVA indicated that there was not a statistically significant difference between the means of retention among instructors who fall below

expectations, those who meet expectations, and those who exceed expectations in posting announcements to their class [$F(2,394) = .91, p = .41)$].

The research hypothesis for this question was there would be a strong, positive correlation between number of announcements posted in the course and retention. The researcher expected as the number of announcements in a class increased there would be a corresponding increase in retention. The analysis leads the researcher to fail to reject the null hypothesis that there are no significant statistical differences in the means between these three groups.

## Research Question Three

Research question three: Is there a relationship between instructor interaction as defined by number of assignments on which written feedback was posted and retention in an online rural community college classroom?

Research question three used data from the gradebook in the learning management system to measure how much feedback was given to students from the instructor on their assignments and retention was drawn from the learning management system as the number of students who finished the course. According to the output from the ANOVA summary Table 7, there was not a statistically significant difference between the means of retention among instructors who fell below expectations, those who meet expectations, and those who exceeded expectations in providing feedback on assignments to their class [$F(2,394) = .85, p = .43)$].

The research hypothesis for this question was there a relationship between instructor interaction as defined by number of assignments on which written feedback was posted and retention in an online rural community college classroom? The findings

from the analysis leads the researcher to fail to reject the null hypothesis that there are no significant statistical differences in the means between these three groups.

## Research Question Four

Research question four: Is there a relationship between instructor interaction as defined by number of logins to the class and retention in an online rural community college classroom?

Data for question four were extracted from the learning management system, Canvas, at the aggregate course level for both logins and retention. The independent variable for research question one is logins and the dependent variable was retention. A one-way ANOVA was conducted to compare the mean differences between instructors who fell below expectations, those who meet expectations, and those who exceeded expectations in sending emails to their class. Findings from this analysis were presented in table 7. According to the ANOVA, there was not a statistically significant difference between the means of retention among these three groups at the .05 level of significance [$F(2,394) = .17, p = .85$]. This indicates that there were no statistically significant differences in the means of these three groups.

The research hypothesis for this question was there would be a strong, positive correlation between number of logins by the instructor and retention. The researcher expected as the number of logins by the instructor increased there would be a corresponding increase in retention. Based on the findings, the researcher fails to reject the null hypothesis that there are no significant statistical differences in the means between these three groups.

Table 7

*ANOVA Summary*

| Variable | | Sum of Squares | Df | Mean Square | F | Sig.* |
|---|---|---|---|---|---|---|
| Emails | | | | | | |
| | Between Groups | 60.94 | 2 | 30.47 | 2.05 | .13 |
| | Within Groups | 5847.75 | 394 | 14.84 | | |
| | Total | 5908.68 | 396 | | | |
| Announcements | | | | | | |
| | Between Groups | 27.05 | 2 | 13.52 | .91 | .41 |
| | Within Groups | 5881.63 | 394 | 14.93 | | |
| | Total | 5908.68 | 396 | | | |
| Feedback | | | | | | |
| | Between Groups | 25.27 | 2 | 12.63 | .85 | .43 |
| | Within Groups | 5883.41 | 394 | 87.01 | | |
| | Total | 5908.68 | 396 | | | |
| Logins | | | | | | |
| | Between Groups | 5.02 | 2 | 2.51 | .17 | .85 |
| | Within Groups | 5903.66 | 394 | 14.98 | | |
| | Total | 5908.68 | 396 | | | |

*$p < .05$

## Summary

Chapter four presented the results of the analysis of the data. Descriptive and correlational output data was presented on the aggregate level variables used in the study. The four independent variables (emails, announcements, logins, and feedback) had an

expected frequency of 15 based on departmental policies and procedures. The descriptive data revealed that the frequencies of emails (9.1) and feedback (4.9) that instructors provided during class were below expectation. The number of announcements (17.4) and logins (60.4) were above the expected frequencies.

Multiple correlation coefficients were reported for the variables included in the study. Overall, the independent variables were significantly correlated with each other in a positive direction. Surprisingly, the independent variables were negatively associated with retention, the dependent variable. The associations were not statistically significant between emails, feedback, and logins and the dependent variable. The only statistically significant negative correlation was between announcements and retention.

Research questions one through four were answered using one-way ANOVAs. Overall, there were no significant differences between the means of the three groups (instructors who fall below expectations, those who meet expectations, and those who exceed expectations) and the four independent variables (emails, announcements, logins, and feedback). The findings of this data analysis did not support the research hypotheses. Chapter five will present a summary of the study, conclusions, and recommendations for further study.

CHAPTER V

CONCLUSIONS


**Introduction**

This chapter presents a summary of the research, discussion, and recommendations for further study. The purpose of this study was to examine the relationship between instructor interaction with students and retention in online classes in a rural community college classroom. Instructor interaction was represented by four independent variables: number of emails sent to the class, number of announcements posted, number of assignments on which written feedback was given, and number of logins to the course. Retention was measured by the number of students that successfully completed the course. Data were pulled from online classes taught at Itawamba Community College during the fall 2013 semester, which included a total of 397 courses. The following research question was proposed in order to meet the purpose of the study: Is there a relationship between instructor interaction variables as defined by number of emails sent to the class, number of announcements posted in the class, number of assignments with written feedback, and number of logins to the class and retention in online classes of a rural community college classroom?

**Summary**

Research Question One focused on the relationship between instructor interaction and retention by using emails as the independent variable. A one-way ANOVA was conducted to compare the mean differences between instructors that fell below expectations, those that met expectations, and those that exceeded expectations in sending emails to their class. Overall, the findings were that there was not a statistically significant difference between the means of retention among these three groups. Research Question Two concentrated on the relationship between instructor interaction as defined by number of announcements and retention. The output of the one-way ANOVA analysis also indicated that there was not a statistically significant difference between the means of retention among the three groups of instructors. Research Question Three looked at the relationship between instructor interaction as defined by number of assignments for which written feedback was given and retention. According to the output, the findings indicated that there was not a statistically significant difference between the means of retention among instructors that fell below expectations, those that met expectations, and those that exceeded expectations in providing feedback on assignments to their class. Research Question Four focused on the relationship between instructor interaction as defined by number of logins to the course and retention. Findings from this analysis indicated that there was not a statistically significant difference between the means of retention among these three groups at the .05 level of significance. This indicated that there were no statistically significant differences in the means of these three groups.

**Discussion**

The guiding theoretical model for this research was transactional distance theory (Moore, 1997) that suggested the quality of teaching and interaction between the instructor and student was less connected to geographic location and more associated with the quality of interaction. According to the theory, increased interaction results in a lower degree of transactional distance. Applying this theory to online learning, the researcher operationalized interaction as announcements posted, emails sent to the class, amount of feedback given on assignments, and number of times the instructor logged into course. For each of the independent variables, instructors were either required or encouraged to perform one of the interactions with students on a weekly basis leading to the research hypothesis, that as the number of interactions as defined by the independent variables increased, there would be a corresponding increase in retention. In summary, the analysis did not support the research hypothesis, in that there were no statistically significant differences in retention between the means of the instructors that met expected thresholds of the operationalized independent variables.

Despite the findings, the literature supported the hypothesis that increased instructor/student interaction should lead to greater student satisfaction and retention in online classes (Dixson, 2010; King, 2014; LaBarbera, 2013). One of the major differences in the current study and more recent studies was the scope of programs analyzed. Previous studies have focused on smaller online programs with less structure. The current study used a large online program that uses standardized courses with preloaded content. All online instructors must undergo required semester training and performance evaluations centered on many topics, including the interaction variables that

were measured in this study. Evaluation of instructor performance was measured on a monthly basis that included a feedback function to quickly correct inconsistencies in instruction between instructors. These external variables may have influenced the lack of variability in the findings.

## Limitations

There were limitations in the current study that may have influenced the outcome of the analysis, and further discussion below will suggest future research to address. One such limitation was that this study was restricted to only one online program at a rural, public two-year school in Mississippi. The data were aggregated at the program level and included all 397 courses taught during the fall 2013 semester. This narrow focus may have constrained the variability of the data being analyzed and led to the lack of significant findings.

Additionally, while this study may have been innovative in its use of standardized courses, it also presented restrictions. When human behavior is to be measured, it can be tenuous, and without strong literature to consult, the selection of measures chosen for this evaluation may have been a limitation for the overall evaluation. The operationalization of the independent variables may have called into question construct validity. The guiding theory, Transactional Distance Theory, is based on interaction between the instructor and the student. In the online classroom, this has previously been measured using synchronous variables such as virtual classrooms, chat rooms, and web conferencing (Falloon, 2011). The current study utilized available data from asynchronous variables to measure interaction such as emails, announcements, feedback, and time in the course. This may have impacted the lack of significant findings.

Thirdly, the study did not take into account the impact that the student's experience level with technology may have had on the internal validity of the outcomes. A student's skill level with the learning management system possibly could impact the ability to receive the forms of communication and limit the types of interaction that were measured in this study. Additionally, while the study measured the frequency in which announcements, emails, and feedback were given by the instructor, the frequency of how often these were received by the student was not measured.

## Recommendations

Research in the area of online retention will continue to be significant as enrollment continues to increase across colleges and universities. Limitations presented by this study provide specific avenues for future research that would be useful in further exploring the relationship between instructor interaction and student retention rates. Because this study was limited to one rural online program in Mississippi during one semester, it was restricted in scope. The MSVCC is a consortium of all 15 community colleges in Mississippi and conducting a study that included data from the online programs from each of the colleges may provide more insight into this relationship between instructor and student in the online environment, particularly if the study included data ranging over multiple semesters.

While retention variables were measured using a limited set of asynchronous variables in this study as have other studies (LaBarbera, 2013; Mbati, 2013), it may be beneficial to narrow the scope of interaction variables and investigate those more in-depth. Previous research indicated that online learners report that standard online course features such as announcements, discussion boards, and virtual chat rooms were not

necessarily the preferred means of communication and interaction (Ausburn, 2004; King, 2014). More recent research has pointed to instructor behavior as being more important, such as timely feedback on assignments and emails when maintaining a connection with the student (King, 2014; LaBarbera, 2013). Dixson (2010) found that in order to keep students engaged, multiple communication strategies must be employed. One suggestion would be conducting a study that attempts to define effective communication in the online venue between the instructor and student to promote retention and success.

Traditional methods of communication and interaction through online delivery is evolving as technology is changing. Students are now able to receive notifications through multiple mobile devices and in many forms, such as text, voice, or video. It would be useful to evaluate student preferences and responsiveness in order to more accurately gauge the connection between online interaction and retention.

REFERENCES

Allen, I. E., & Seaman, J. (2011). *Going the distance: online education in the united states, 2011*. Retrieved from

http://www.onlinelearningsurvey.com/reports/goingthedistance.pdf

Allen, I. E., & Seaman, J. (2013). *Changing the course: Online education in the united states, 2013*. Retrieved from

http://www.onlinelearningsurvey.com/reports/changingcourse.pdf

American Association of Community Colleges. (2013). *Fast facts from our fact sheet*. Retrieved on April 2, 2013 from

http://www.aacc.nche.edu/AboutCC/Pages/fastfactsfactsheet.aspx

Astin, A. W. (1991). *Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education*. New York: Macmillan.

Ausburn, L. J. (2004). Course design elements most valued by adult learners in blended online education environments: An american perspective. *Educational Media International, 41*(4), 327-337.

Baker, C. (2010). The impact of instructor immediacy and presence for online student affective learning, cognition, and motivation. *Journal of Educators Online*, *7*(1), 1-30. Retrieved from

http://www.thejeo.com/Archives/Volume7Number1/BakerPaper.pdf

Bailie, J. L. (2012). The criticality of verbal immediacy in online instruction: A modified

    delphi study. *Journal of Educators Online*, *9*(2), 20-42. Retrieved from

    http://www.thejeo.com/Archives/Volume9Number2/BailiePaper.pdf

Bean, J.P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate

    student attrition. *Review of Educational Research*, 55(4), 485-540.

Bean, J. P. (1990). Why students leave: Insights from research. In D. Hossler, J. P. Bean,

    & Associates (Eds.), *The strategic management of college enrollments,* (170-185).

    San Francisco: Jossey-Bass.

Blackmon, S. J. (2012). Outcomes of chat and discussion board use in online learning: a

    research synthesis. *Journal of Educators Online*, *9*(2), 1-19. Retrieved from

    http://www.thejeo.com/Archives/Volume9Number2/BlackmonPaper.pdf

Cohen, A., & Brawer, F. (2008). *The american community college* (5th ed.).

    SanFrancisco, CA: Jossey-Bass.

Creasman, P. (2012). *Considerations in online course design.* Retrieved from

    http://www.theideacenter.org/research-and-papers/idea-papers

Dietz-Uhler, B., Fisher, A., & Han, A. (2008). Designing online courses to promote

    student retention. *Journal of Educational Technology Systems*, *36*(1), 105-112.

Dixson, M. D. (2010). Creating effective student engagement in online courses: What do

    students find engaging? *Journal of the Scholarship of Teaching and Learning,*

    *10*(2), 1-10.

Drouin, M. A. (2008). The relationship between students' perceived sense of community

    and satisfaction, achievement, and retention in an online course. *Quarterly Review*

    *of Distance Education*, *9*(3), 267-284.

Ebbers, L. H., Wild, L., & Friedel, J. (2003). Determining community college workforce

    needs: Process suggestions and policy issues. *Community College Journal of*

    *Research & Practice*, *27*(3), 225-237.

Fabry, D. L. (2009). Designing online and on-ground courses to ensure comparability and

    consistency in meeting learning outcomes. *The Quarterly Review of Distance*

    *Education*, *10*(3), 253-261.

Falloon, G. (2011). Making the connection: Moore's theory of transactional distance and

    its relevance to the use of a virtual classroom in postgraduate online teacher

    education. *Journal of Research on Technology in Education*, *43*(3), 187-209.

Fike, D. S., & Fike, R. (2008). Predictors of first-year student retention in the community

    college. *Community College Review*, *36*(2), 68-88.

Fraenkel, J. R., & Wallen, N. E. (2009). *How to design and evaluate research in*

    *education* (7th ed.). New York, NY: McGraw-Hill.

Garrison, D. R., Anderson, T., & Archer, W. (2010). The first decade of community

    inquiry framework: A retrospective. *In Special Issue on the Community of Inquiry*

    *Framework: Ten Years Later, The Internet and Higher Education, 13*(1),5-9.

Gold, M. (2003). 8 Lessons about e-Learning from 5 organizations. *Talent Development*,

    *57*(8), 54-58.

Gorham, J. (1988). The relationship between verbal teacher immediacy behaviors and

    student learning. *Communication Education*, *37*, 40-53.

Habley, W., Valiga, M., McClanahan, R., & Burkum, K. (2010). *What works in student retention?: Fourth national survey: Community colleges report*, Retrieved from http://www.act.org/research/policymakers/pdf/droptables/CommunityColleges.pdf

Hachey, A. C., Wladis, C. W., & Conway, K. M. (2012). Is the second time the charm? Investigating trends in online re-enrollment, retention and success. *Journal of Educators Online*, *9*(1), 1-25. Retrieved from http://www.thejeo.com/Archives/Volume9Number1/HacheyetalPaper.pdf

Juliet Junior College. (2013). *College information – History page.* Retrieved on April 2, 2014 from http://www.jjc.edu/college-info/Pages/history.aspx

King, S. (2014). Graduate student perceptions of the use of online course tools to support engagement. *International Journal for the Scholarship of Teaching and Learning, 8*(1), 1-16.

LaBarbera, R. (2013). The relationship between students' perceived sense of connectedness to the instructor and satisfaction in online classes. *The Quarterly Review of Distance Education, 14*(4), 209-220.

Mbati, L. (2013). Online social media applications for constructivism and observational learning. *The International Review of Research in Open and Distance Learning, 14*(5), 167-184.

Mensch, S. (2013). The relationship between course grades and retention rates when the same class is offered in different time lengths. *Insights to a Changing World Journal, 3*, 63-68.

Mississippi Virtual Community College. (2015). *About us.* Retrieved on February 3, 2015

      from http://msvcc.squarespace.com/msvccabout/

Mississippi Virtual Community College. (2014). *Enrollment assessment report.*

      Retrieved on November 10, 2014 from

      https://sbcjcweb.sbcjc.cc.ms.us/enrollment/mainmenu.asp

Moore, M. (1997). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical*

      *principles of distance education.* (22–38). New York: Routledge.

Morrison, G. & Ross, S. (2007). *Designing effective online instruction. Online learning*

      *communities.* Charlotte, NC: Information Age Publishing.

Saret, L. (2015). *Retaining students in classes: Putting theory into everyday practice.*

      Retrieved from

      http://www.oakton.edu/user/1/lsaret/LauraSaretOaktonWebSite/Ways%20Faculty

      %20Can%20Encourage%20Student%20Retention.htm

Stumpf, A. D., McCrimon, E., & Davis, J. (2005). Carpe diem: Overcome

      misconceptions in community college distance learning. *Community College*

      *Journal of Research & Practice, 29*(5), 357-367.

Tinto, V. (1993). *Leaving college: Rethinking the causes of student attrition* (2nd ed.).

      Chicago: University of Chicago Press.

Tinto, V., Russon, P., & Stephanie, K. (1994). Constructing educational communities:

      Increase retention in challenging circumstances. *Community College Journal*,

      *64*(4), 18-22.

Tobin, T. (2014). Increase online student retention with universal design for learning.

      *Quarterly Review of Distance Education, 15*(3), 13-24.

Wild, L., & Ebbers, L. (2002). Rethinking student retention in community colleges.

       *Community College Journal of Research & Practice*, *26*(6), 503-519.

       doi:10.1080/2776770290041864

Vaughn, G. B. (2000). *The community college story* (2nd ed.). Washington, DC:

       Community College.

Young, J., & Ewing, J. (1978). *The Mississippi public junior college story: The first fifty*

       *years, 1922–1972*. Jackson, MS: University Press of Mississippi.

APPENDIX A

PERMISSION LETTER FROM INSTITUTIONAL RESEARCH BOARD AT

ITAWAMBA COMMUNITY COLLEGE

July 24, 2013

Michelle Sumerel
Dean of eLearning Instruction
Itawamba Community College
602 West Hill Street
Fulton, MS 38843

Re: IRB Approval
The Effect of Instructor Interaction on Student Retention Rates in the Rural Community College
Online Classroom

Dear Michelle Sumerel:

The above referenced project/research topic was reviewed and approved on July 24, 2013. This
project is approved until June 1, 2014. Good luck to you in conducting this research project.

If you have questions or concerns, please contact me at 662-862-8265 or at
etedwards@iccms.edu.

Liz Edwards
Director of Institutional Research, Effectiveness, & Accountability

APPENDIX B

PERMISSION LETTER FROM INSTITUTIONAL RESEARCH BOARD AT

MISSISSIPPI STATE UNIVERSITY

May 5, 2014

Jennifer Estis-Sumerel

Leadership & Foundations

RE: HRPP Study #14-142: The Relationship between Instructor Interaction and Student

Retention in the Rural Community College Online Classroom

Dear Ms. Estis-Sumerel:

This email serves as official documentation that the above referenced project was reviewed and

approved via administrative review on 5/5/2014 in accordance with 45 CFR 46.101(b)(4).

Continuing review is not necessary for this project. However, in accordance with SOP 01-03

Administrative Review of Applications, a new application must be submitted if the study is

ongoing after 5 years from the date of approval. Additionally, any modification to the project

must be reviewed and approved by the HRPP prior to implementation. Any failure to adhere to

the approved protocol could result in suspension or termination of your project. The HRPP

reserves the right, at anytime during the project period, to observe you an! d the additional

researchers on this project.

Please refer to your HRPP number (#14-142) when contacting our office regarding this

application.

Thank you for your cooperation and good luck to you in conducting this research project. If you

have questions or concerns, please contact me at nmorse@orc.msstate.edu or call 662-325-5220.

Finally, we would greatly appreciate your feedback on the HRPP approval process. Please take a

few minutes to complete our survey at http://www.surveymonkey.com/s/YZC7QQD.

Sincerely,

Nicole Morse, CIP

IRB Compliance Administrator

cc: Dan Stumpf (Advisor)