THE INTEGRATION OF LECTURE CAPTURE TECHNOLOGY IN ASSOCIATE DEGREE NURSING PROGRAMS IN ALABAMA

by

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ABSTRACT

Instructors are being challenged to evaluate their courses and the manner in which course materials are distributed. Lecture capture technology has enabled nursing instructors to deliver classroom lectures even when class is not in session. This form of technology allows instructors to record lectures as they are being presented or instructors may choose to pre-record lectures prior to class.

The purpose of this descriptive qualitative study was to determine how lecture capture technology has been integrated into associate degree nursing programs in Alabama. Nursing instructors were recruited from two-year colleges in the state of Alabama. Instructors selected were asked to complete a demographic survey and participate in detailed interviews that helped determine what factors influenced them to incorporate lecture capture technology into their courses. A purposive sample of nursing instructors, who had utilized lecture capture technology in their courses, was sought.

The findings from this study may be used to help other nursing instructors navigate through the process of implementing lecture capture or other technology into their courses. The data collected may serve as a resource to help instructors and institutions overcome barriers and to effectively use time and resources in educating future nurses. This study has implications for nursing practice and policy related to establishing procedures that can assist instructors in adopting technology tools that will be beneficial in presenting course materials. In addition, instructors can determine which method of implementation is best for their work environment.

DEDICATION

This work is dedicated to the memory of my parents, Mr. Simon Charley and Mrs. Essie Mae Blount Charley. It is because of their hard work that I have been able to achieve my goals. I never could have made it without the love, support and prayers that my mother offered daily. She was a prayer warrior and I am reaping the benefits of her prayers. She also provided me with a living example of how to live to please God. I will forever cherish their memory.

LIST OF ABBREVIATIONS AND SYMBOLS

ABN	Alabama Board of Nursing
ACCS	Alabama Community College System
ADN	Associate Degree Nursing
AL	Alabama
ANA	American Nurses Association
CDs	Compact Discs
GPA	Grade point average
IRB	Institutional Review Board
IT	Instructional Technology
MP3	MPEG Audio Layer 3
NCLEX	National Council Licensure Examination
NLN	National League for Nursing
NUR	Nursing
OB	Obstetrical
Peds	Pediatrics
U	University
UK	United Kingdom

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Bless the Lord, O my soul: and all that is within me, bless his holy name. Psalms 103:1

First, I give honor to my Lord and Savior Jesus Christ who has allowed me the privilege of pursuing and achieving my goal. I am grateful for my many supporters throughout the country who have kept me encouraged and focused during this process. I want to thank all of the Saints of God who lifted me up in fasting, praying, and faith. Neither time nor space will allow me to mention each of you by name, but just know that God has the record.

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CHAPTER I:

INTRODUCTION

Nurse educators are experiencing a call for changes in the delivery of nursing curriculum (Adams, 2004). In an effort to keep up with the demands for alternatives to traditional educational methods, nurse educators have had to learn how to use technology in their courses. Lecture capture is an example of a technology tool that has been implemented by nurse educators as a supplemental teaching device. The thrush to implement technology tools has brought about different experiences for those involved in this process. It is important to understand how nurse educators experience change and to identify steps needed to assist others in transitioning.

Lecture capture is a term used to describe technology that allows instructors to digitally record a lecture using audio, video, screen-capture, or PowerPoint slides (Owston, Lupsheyuk, & Wideman, 2011). The lecture is made available for students to view at any time via the Internet. The term lecture capture refers to a variety of software, system capabilities, and hardware choices. Although it is not intended to replace classroom instructions, lecture capture technology offer instructors the opportunity to enhance their students' learning experience. Lectures are made available to students as a preview, review, or alternative for class absence. Students may choose to view lectures at anytime and anywhere by using a variety of devices that give them on-line access.

The goal of education is to prepare individuals for their future role in society. Within this broad category, divisions within educational institutions have specific objectives depending on

the field of study. The numbers of graduates who complete a course of study and who successfully pass examinations that will allow them to practice in their selected profession, can gage a program's achievements. Many educators strive to continually improve their skills and explore how they can become more effective at what they do. Some experts have suggested that one way in which this can be accomplished is by implementing technology tools into the course curriculum to assist with restructuring class time (Lonn & Teasley, 2009).

Colleges and universities throughout the world are seeking to provide instructions for students enrolled in classes by enhancing traditional teaching methods. Technology has been integrated into pedagogy and this has altered the course of instructional delivery at many colleges and universities. Classrooms and higher educational settings continue to undergo changes (Nicolaou, Nicolaidou, & Constantinou, 2005). Although necessary, implementing change can be challenging. Educators must adapt to these changes in an effort to meet the needs of their students. Thus, educators must be proficient in their technology skills while interacting with students who are computer savvy and who may be more experienced in this area.

Problem Statement

The experience of nurse educators who have implemented lecture capture technology has not been very well documented. This study sought to examine the experience of nurse educators who have implemented lecture capture technology in their courses. This study was needed to help faculty identify technologies that may help facilitate learning and meet the demands of learning participants. The traditional teacher centered learning environment in nursing education needs to be evaluated because it has limitations in regards to assisting learners in becoming active, responsible, participants in the learning process (Keengwe, Onchwari, & Onchwari, 2009). Future nurses must be able to manage the care of patients with multifaceted conditions in

a fast, changing, and highly technical healthcare delivery system (Candela, Dalley, & Benzel-Lindley, 2006). As plans are being made to implement technology into education, it becomes necessary to include the stakeholders in these plans as well (Rogers, 2000). The stakeholders include instructors, students, hiring agencies and members of the staff development team who will be responsible for implementing these transformations.

Technological advancements have enabled instructors to use a variety of tools to enhance their courses (Dey, Burn, & Gerdes, 2009). These range from the use of computers and the Internet to the use of hand-held mobile devices. Courses may now be offered face-to-face or in a blended fashion (Osguthorpe & Graham, 2003). Blended forms may consist of face-to-face meetings as well as online via different online delivery forums. Classroom lectures can be recorded live and played back at a later time or the instructor may choose to use screen capturing and record lectures simultaneously. The interaction between instructors and students can be achieved via live virtual classrooms that enable students to participate without having to be present on site.

The number of graduates who complete a course of study and who pass examinations that will allow them to practice their selected profession often measure success. As educators seek to improve their teaching ability, they are also seeking ways to become more effective at using technology and other tools in their classrooms. Cornelius and Glasgow (2007) reported that a good technical support system is needed to support technological advancements. This type of setting fosters a culture in which satisfaction is achieved among students, faculty, and staff.

Purpose of Study

The purpose of this study was to describe the lived experiences of nurse educators at community colleges in Alabama during the integration of lecture capturing technology into their

classrooms. This study sought to understand why lecture capture was used in the classroom and what happened as a result of this tool being implemented. It focused on the experiences of nurse educators and sought to describe what they encountered during the implementation of this technology. The use of lecture capture technology has been researched, data that relates to how instructors adopted this technology, their perception of its' effectiveness, and changes that occurred within institutions after adoption was non-existent. This study sought to determine the best ways to implement this technology tool into educational delivery methods currently being used in institutions of higher learning.

Research Questions

The overriding research question that was used to guide this study was:

1. What was the experience of nurse educators in Associate Degree Nursing Programs in Alabama as they implemented lecture capture technology in their courses?

Other supplementary questions that were explored during this study included the following:

2. How did nurse educators in Associate Degree Nursing Programs in Alabama come to use lecture capture technology?
3. In what courses has lecture capture technology work best for nurse educators in Associate Degree Nursing Programs in Alabama?
4. What factors influenced which lecture capture technology was selected by nurse educators in Associate Degree Nursing Programs in Alabama?
5. How has lecture capture technology changed what nurse educators in Associate Degree Nursing Programs in Alabama do in their classrooms?

Study Significance

The division of nursing at the institutions being studied awards associate degrees in nursing to graduates who then may obtain licensure to practice nursing after successfully passing the National Council Licensure Examination (NCLEX). Nursing programs are evaluated on the number of graduates who successfully pass this examination on the first attempt. Currently the Alabama Board of Nursing (ABN) requires an 80% passage rate for first-time takers (Alabama Board of Nursing, 2008). Programs that fail to meet this standard are subject to disciplinary actions that could mean the withdrawal of approval for the program to function within the state (Schwarz, 2005). Nursing instructors are looking for ways to improve their ability to produce competent graduates who are ready to join the workforce. Some schools are also facing the problem of high attrition rates and have seen slow growth in the number of students admitted to their programs (National League for Nursing [NLN], 2010).

Some colleges have recently enhanced the availability of technology in many of their academic divisions. This was done to improve the colleges' ability to offer distance learning, to improve instructional techniques or to meet the demands of the community stakeholders (Delaney, Pennington, & Blankenship, 2010). At some colleges, faculty members teaching in different disciplines have had an increased emphasis placed on integrating technology in their courses. Nursing represents one area in which this focus has been emphasized.

Budget constraints and economic hardship have forced many colleges and universities to take a close look at how funds are appropriated (Doyle & Delaney, 2009). Most are now seeking ways to get the most out of each dollar and to use their monies wisely. The utilization of best practice methods has become essential in this attempt to manage financial assets. Some schools have had to decide which programs they can fund and how they can compensate for deficits.

This study may provide evidence to support best practice methods for implementing technology tools in educational courses. The findings may serve to shape or restructure policies and practices within departments, divisions, or the entire college. This study may provide information that will show the feasibility of using lecture capture technology as a format for the delivery of nursing courses and guidelines to use as this technology is being implemented.

Conceptual Framework

Diffusion is defined as the process by which an innovation is communicated through certain channels over time among members of a social system (Rogers, 2002). Diffusion of innovations sees change as mainly being about reinvention of products and behaviors so they become better fits for the needs of individuals and groups. This theory describes behavior and behavior changes.

The diffusion of innovation theory describes steps needed for change to occur. In this theory, E. M. Rogers outlined four main attributes that are essential in the diffusion potential of an innovation. They are as follows: the innovation, communication channels, time, and the social system (Rogers, 2003). In order to adopt a new idea, people must believe the idea has some real advantages over the idea it replaces. Knowing the advantages and disadvantages of an innovation will help individuals to realize the consequences that may occur as a result of the adoption. Communication occurs through channels between sources. Rogers (2003) saw the element of time as providing a distinctive advantage to diffusion research. The social system involves people working together to achieve common goals for the good of all involved.

The first step identified in the innovation-decision process is knowledge (Rogers, 2003). An individual first finds out that an innovation exists and gains some understanding of how and why it functions. These questions then form awareness-knowledge, how-to-knowledge, and

principle-knowledge. The individual may be motivated to learn more about the innovation, how to properly use it, and the principles behind how and why the innovation works.

The next step in this process is persuasion (Rogers, 2003). Persuasion occurs when the person forms a favorable or unfavorable attitude toward the innovation through interacting with others. This stage is centered more on feelings. The individual's opinion and beliefs are influenced by collaboration with peers, as well as the uncertainties surrounding the function of the innovation. More credence is given to the subjective evaluations received from peers.

Decision is the third step in the innovation-decision process (Rogers, 2003). A drive is launched to seek additional information about an innovation after which a decision is made to adopt or reject the innovation. Two types of rejection may occur: active or passive. In active rejection, an innovation is rejected after an individual thinks about adopting it. In passive rejection, an innovation is rejected without the individual giving any thought to accepting it.

The implementation stage follows the decision stage (Rogers, 2003). The individual regularly uses the innovation as they continue to seek more information about the innovation. Changes may be made during this stage. The degree to which changes are made by a user during adoption and implementation is called re-invention.

Confirmation, the final stage in this process, allows the person to evaluate the results of an innovation-decision that has been already made (Rogers, 2003). The decision may be reversed when there are conflicting messages about the innovation. The continual use of the innovation is warranted or rejected based on the evidence or drawbacks. The innovation is used to its greatest potential. Attitudes are very important at this stage.

Rogers (2002) identified five categories of adopters that included innovators, early adopters, early majority, late majority and laggards. Innovators are comfortable with change and

technology. They are risk takers who are willing to try something new. They make up a very small percent of the group's total population. They are usually active, artistic and love to talk about new ideas and devices.

Early adopters are respected leaders in their social system, who jump in once the benefits become apparent and determine the success of the innovation with their input (Rogers, 2003). However, early majority adopters are neither first nor last to adopt an innovation, but they interact well with other members of the social system. Late majority adopters are realists, don't like risks and are uncomfortable with new ideas. Laggards are skeptics who are usually the last ones to adopt the innovation. They hold out until after they are sure the innovation really works.

Rogers (2002) stated that the characteristics of an innovation, as perceived by the members of a social system, determine its rate of adoption. He identified the following five characteristics of innovations that affect speed of adoption: (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability, and (5) observability.

Rogers (2003) defined relative advantage as "the degree to which an innovation is perceived as being better than the idea it supersedes." This is measured by factors that include economics, social prestige, convenience, and satisfaction. Innovations will be adopter faster when the perceived relative advantage is greater.

Compatibility is the degree to which the innovation fit with values, beliefs, and current needs (Rogers, 2002). Rogers (2003) asserts that an innovation is likely to be adopted sooner when it is compatible with the personal beliefs of the adopters. If the innovation fits the current need, this will help increase its speed of adoption and decrease uncertainties. Naming an innovation is an important aspect of compatibility. The name should be significant to the potential adopter. The meaning of the innovation should also be clear.

Complexity is the extent to which an innovation is perceived as difficult to comprehend and use (Rogers, 2003). Some innovations are readily understood; whereas, others are more complex and take longer to adopt. The simpler the innovation, the better the chance adopters will utilize the innovation. The adopter should be able to use the innovation with ease and simplicity. If the adopter encounters too much difficulty they probably will reject the innovation. This should be a smooth, seamless transition (Rogers, 2003).

Rogers (2003) stated that trialability is the degree to which an innovation may be tested on a limited basis. Innovations are adopted quicker when they are tried more frequently. A trialable innovation means less uncertainty for the person who is considering it.

Observability is the degree to which others see the outcomes of the innovation (Rogers, 2003). Individuals are more likely to adopt the innovation when they see the results of an innovation. Visible results will stimulate discussion among peers. Role modeling is a key aspect in adoption of the diffusion of innovation theory (Rogers, 2003).

According to Rogers (2003), innovations that have these characteristics will be adopted quicker than other innovations. In addition, they can help identify weaknesses and improve product or behaviors. The diffusion of innovation theory is useful in explaining how technology is disseminated among members of the educational community. Members must first see the significance and efficacy of technology in their work. After this is experienced, the process of getting others to have similar experiences may lead to the utilization and adoption of technological resources, although some may take longer than others to take on the changes.

Kurt Lewin's change theory outlines a similar process for initiating change (Schein, 1999). Change agents must go through three phases before change is experienced within a system. These phases are: unfreezing, moving, and refreezing behavior. Schein (1999) reflected

on this theory and noted that unfreezing involves driving and restraining forces. In order for change to occur, something other than a driving force must be added. A driving force alone is met with counter forces, which is used to maintain the status quo. He suggested that the counter forces consists of norms or personal defenses within groups that are hard to move. Furthermore, Lewin's theory indicates that change is supported by a balance between the amount of dissatisfaction, perceived threat to safety, and survival anxiety (Burnes, 2004; Schein, 1999).

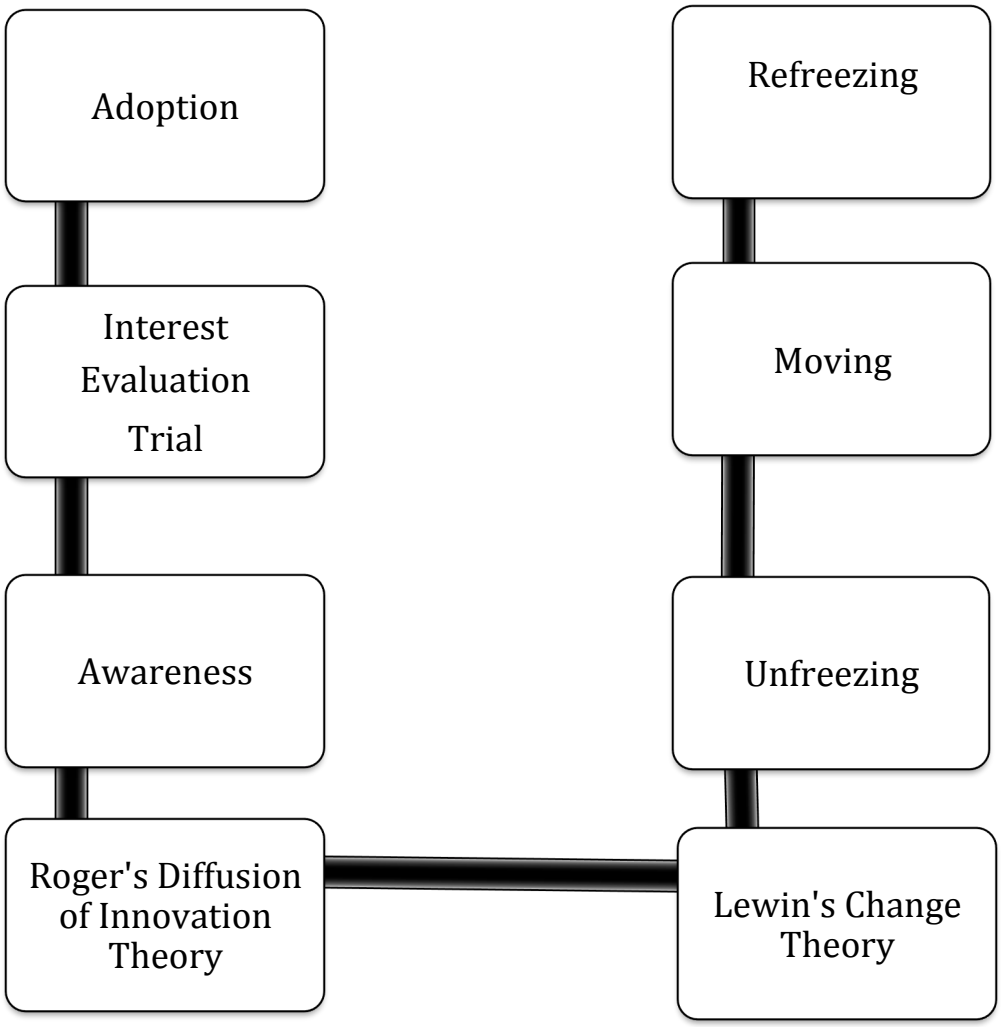
Unfreezing occurs when the need for change has been recognized and shared with members of a group. Current practices and policies are disrupted; there is a shift from the usual way of doing things and a move towards modification. The group is made aware of the need for transformation and a solution is selected through collaboration. This phase corresponds to Roger's awareness phase (Schein, 1999).

During the moving stage, information is gathered and distributed among the group. Ideas are tried in an effort to develop an effective plan to guide the implementations (Schein, 1999). Individuals are encouraged to engage in open communication and participate in developing the change. This stage requires a detailed plan of action and involves people trying out the proposed change. Fear is often associated with this stage (Burnes, 2004; Schein, 1999;). This phase corresponds to Roger's (2003) trialability phase.

Refreezing involves developing strategies to prevent a return to previous behaviors. Although change occurs, it must be supported if it is to remain constant. The new change produces a new balance, which then becomes the norm (Schein, 1999). This phase corresponds with Roger's (2003) adoption phase.

FIGURE 1.

Comparison of Diffusion of Innovation Theory and Change Theory



Adapted from Roussel & Swansburg, 2009

Roussel, L. & Swansburg, R. C. (2009). *Management and Leadership for Nursing Administrators,* (5th ed.). Sudberry, MA: Jones and Bartlett.

Roger's diffusion of innovation theory and Lewin's change theory provided a framework for this study. They are composed of similar steps needed for change and will be used to support the study.

Summary

This chapter describes the need for this study and the educational methods that were utilized to guide the research. Although innovative options are available, it has provided very little change to teaching strategies. The use of lecture capture technology represents a change from the traditional teacher centered method for delivery of course instructions to one in which students take an active role in determining when and where the course materials will be delivered. This study sought to explore factors that were instrumental in influencing nurse educators to adopt this form of technology in their courses and what has happened since its implementation.

Terms & Definitions

1. Asynchronous – Occurring at a different time.
2. Blended class – A class that uses face-to-face and online formats to present course material to students.
3. Face-to face – A learning environment in which all participants are visibly present.
4. Lecture capture – A form of technology in which an instructor's lecture is recorded and made available to students via digital download.
5. Mobile learning – A form of learning that utilizes portable devices to facilitate learning.
6. On-line – The process of being connected to the Internet via computer or an electronic mobile device.
7. Podcast – The recording of an audio program that can be downloaded and played at a later time by using a computer and/or a portable media player.
8. Screencast – A term that is used interchangeably with podcast, lecture capture, or vodcast.
9. Synchronous – The state of occurring at the same time.
10. Vodcast – Recording of audio and video in a format that can be downloaded to a computer or portable digital device and used at a later time.
11. Webcast – The streaming of audio or video across a medium.
12. Web-enhanced – The use of the Internet to provide a portion of course instruction and content.

CHAPTER II

REVIEW OF THE LITERATURE

Lecture capture technology has been used as a method of instructional delivery in colleges and universities worldwide. The integration of this technology has impacted instructors and students (Lonn & Teasley, 2009). A review of the literature was conducted to explore how lecture capture technology has been used in the delivery of course instruction and how it has affected the behavior of instructors and students. Moreover, this review was conducted to discover what data exist to show the nursing instructors' perceptions of implementing web-enhanced technology, such as lecture capture, in their nursing courses.

Data base searches were launched using Med Pub, Proquest, EBSCOhost, CINAHL and Goggle Scholar. Peer reviewed journals were examined by utilizing a variety of key terms including lecture capture, podcasting, web-enhanced instruction, instructional technology, and webcast. In addition, the reference section for each article was searched in an effort to find additional articles.

There was very limited information in this literature review that examined the instructor's experience in implementing lecture capture technology in the classroom, specifically in nursing education. This study sought to determine how lecture capture technology has been used in the classroom and how this technology can assist nursing instructors as well as other instructors as they seek to implement lecture capture in their courses.

History of Lecture Capture In Education

Burdet, Bontron, and Burgi (2009) reported that some university faculty and support personnel have recorded lectures on audiotapes for decades. Librarians and technicians collaboratively produced the recordings that were catalogued, maintained, and distributed among faculty and students. This progressed to using videocassettes that were issued to students. Later, video teleconferencing rooms were developed as an additional option.

Roberts (1994) described a technique of recording lectures, which can be traced to students who recorded what was conveyed in the classroom, and later used this information to complete notes or to help study course content. This was accomplished with the use of audiocassette tape recorders and progressed to using compact discs (CDs). Students purchased the materials needed for the recording and controlled their storage and distribution.

Lecture recording has evolved with the use of digital recorders such as iPods and MP3 players (Copley, 2007; Deal, 2007). The use of this type of media has become popular among students from the "millennial generation" who make up the majority of the student body at most colleges (U.S. Census Bureau, 2011). These students have become accustomed to using modern technology tools in their daily lives and they view them as essential devices. Any student can download lecture capture recordings to a device and play them as often as desired. This is done online by using computers and other tools.

Students Use of Lecture Capture

Podcasts have become a popular way to distribute course materials in colleges and universities throughout the world. This form of information sharing has become popular among students enrolled in a variety of academic disciplines. According to Ehlers (2010), podcast technology continues to evolve from its earlier days in which instructors and students used tape

recorders in an effort to capture lectures. Podcasts now may consist of voice and/or video recordings that can be transferred to a format that allow students to download and playback the materials as often as they desire. Podcasts may vary in length and the recordings can be completed in the classroom or the instructor's preferred location (Schlairet, 2009).

Podcasts have been acclaimed for their use as portable learning devices (McCombs & Lui, 2007). Students can download materials on iPods or MP3 players and listen to the content at times and places that are convenient for them. They can search for keywords and focus on specific terms instead of listening to a recording in its entirety. The portable devices can be paused, rewound, or resumed at any point during the presentation. Some students preferred this method because it allowed them to manage their time more efficiently, supported independent learning styles and needs, and promoted greater student involvement in class activities (Belanger, 2005).

In contrast, some students reported using a desktop or laptop computer to download and listen to podcasts (Deal, 2007; Lonn & Teasley, 2009; Schlairet, 2010). Copley (2007) reported that although most students elected not to use podcasts in a portable format, they were used to supplement lecture materials. They were used to provide students with additional instructions on course material outside of class. Students did not report using podcast while performing other activities, but during their study time. A majority of students who tried podcasts reported very positive experiences. Podcast were seen as being useful and was preferred over other types of supplemental learning materials.

Robson and Greensmith (2010) examined when and where students used podcasts, the educational value, and potential barriers to adopting this type of instructional media. Surveys were conducted using 116 university students. The results from this investigation indicated that

students felt that their learning improved with using podcasts. The students reported that they used this form of lecture capture as a supplemental resource when preparing for exams. In addition, Robson and Greensmith (2010) reported findings that suggested podcasts were not being used significantly among their study participants as a mobile learning tool. A majority of students reported using podcasts to supplement class lectures.

Students did not use podcasts as a substitute for attending class, but as an addition to classroom attendance (Ehlers, 2010). Instructors reported no significant decrease in class attendance as a result of podcasts being made available to students. Podcasts were used to enhance learning but they did not replace face-to-face instructions provided by the instructors. In some instances, students used podcast to reinforce what they heard during lectures or to clarify misconceptions that existed. Podcasts were used in preparation for exams and the repetition of the material helped to facilitate learning. Pre-recorded lectures were used by students in preparation for class and were thought to have a positive effect on students' exam grades (Deal, 2007; Traphagan, Kucsera, & Kishi, 2010).

In contrast, some researchers found that students who used podcasts attended class less often than those who did not have access to podcasts (Owston et al., 2011; Traphagan et al., 2010). Traphagan et al. (2010) suggested that students who utilized webcasts attended class less than those without webcast access. Although the students attended class less frequently, they did not differ on performance measures from students who attended class as scheduled. In a quasi-experimental study conducted among undergraduate students in a large enrollment geology course, 55% of students reported that they attended class less due to the availability of lecture capture recordings (Owston et al., 2011). In addition, there was no indication that the students' grade dropped as a result of attending class less.

Faculty Use of Lecture Capture

Several universities have made podcasts available to their students to review lecture materials, to assist with homework or to use in preparation for examinations (Brown & Green, 2007). Among these are Duke, Indiana, and Georgia State Universities. Podcasts have been produced and distributed by faculty to students as a supplement to course materials. The podcasts range in length, but short segments have been suggested as they permit students to completely listen to recordings as they move about. The faculty will need to determine which content to include in each podcast as well as which software best fit their students' needs including those with special needs. Also, faculty members may not have the time and resources needed to produce podcasts and will need resources and help from those with expertise to develop podcasts. Issues may develop with campus resources, policies, and procedures that will need to be resolve through effective means of communication between departments.

Chandra (2011) reported how instructors can personally capture video lectures using components that can be easily obtained. Some universities are unwilling to allocate resources needed to capture and distribute videos. This researcher demonstrated how instructors could capture and produce videos with minimal effort. This project took place over a period of three and a half years during which time the faculty encountered technological challenges that they managed to overcome. Some faculty was concerned that students would stop coming to class. No decease in students' attendance was noted. Others expressed concerns about having a record of misspoken words. It was determined that because no one is infallible, this was an acceptable risk. The amount of time needed to produce videos raised another concern. The faculty determined that the videos were worth the extra time spent on production and that they could be used repeatedly. The universities hold the right to all lectures produced.

This study suggests that universities should appropriate funds that would support this form of technology. The faculty will need to be supported by the information technology department as they learn to produce, store, and distribute lecture content. The students will need access to finished products as well as support to overcome technological difficulties they may encounter.

Lecture recording technology is being used to facilitate synchronous online attendance for distance learning (Stolzenberg & Pforte, 2007). Instructors and students are able to meet online and discuss topics or issues. Also, instructors can demonstrate skills or provide written examples on how to solve problems. The same recordings are archived and can be used later for asynchronous playback. This instructional technique has been instrumental in appealing to various learning styles. The auditory learner is able to hear what is being communicated. The kinesthetic learner can follow a demonstration while practicing the steps. The visual learner is able to view video clips or slides. Some students may need to utilize all of the embedded resources (Stolzenberg & Pforte, 2007).

Deal (2007) noted that lecture capture technology has provided colleges with the ability to extend its teaching. For those who may not be able to attend classes on campus, lecture capture is able to reach students where they are and provide instructions they may not otherwise be able to obtain. Students no longer need to pack lecture halls to receive instructions. Many students are now faced with managing time and resources, both of which are a scarcity. They may elect to enroll in online classes that provide them the ability to attend class when and where they choose. Students have the ability to control their pace of listening to course content by using the pause, stop, or replay buttons. Faculty can provide email or discussion boards for students who may need to ask additional questions or who may need further explanations (Deal, 2007).

Barriers to Using Lecture Capture

Robson and Greensmith (2010) conducted a study in which they identified possible barriers to instructors implementing lecture capture technology in their classes. One factor identified as a possible barrier was time limitation of instructors. The initial implementation of lecture capture requires instructors to familiarize themselves with the equipment and commit to a period of time for recording the sessions. Additional time may be needed to edit the recordings and to post the material to the Internet. Robson and Greensmith (2010) further noted, the instructors may face problems that require additional time to resolve the problems. This additional time may not have been allotted in the instructors' schedule.

Instructors identified the need for supplemental training and access to technology equipment as other barriers to using lecture capture technology (Bull, Tyler, & Eaton, 2007; Robson & Greensmith, 2010). Although some instructors had experience with using this technology or had received some training, many felt like additional training would be needed. As technical problems are encountered, the support of staff members from the Instructional Technology (IT) Department would be required. Depending on the issue, instructors may need additional training on how to troubleshoot problems. Some problems may be able to be resolved by telephone consultation whereas others may require an onsite visit by a technician. Instructors may be reluctant to admit to their lack of knowledge because this might make them look incompetent. Instructors need to know that they have support personnel who will be available to assist them when the need arises. Colleges and universities must commit to allocating the resources needed to capture and distribute the recordings.

Another potential barrier to the implementation of lecture capture technology is the possible adverse effect on attendance. Some instructors have expressed concerns that students

may not attend class regularly if they have access to recorded class lectures (Chandra, 2011; Copley, 2007; Deal, 2007; Ormond, 2008; Robson & Greensmith, 2010). There was no significant impact on class attendance noted as a result of students using lecture capture technology. Forbes and Hickey (2008) reported on a descriptive study in which they surveyed 170 undergraduate students who were enrolled in nursing classes that utilized lecture capture. They reported no adverse effects on attendance as a result of this technology being used in the classes. Students reported using this technology to supplement class lectures not as a substitute for attending classes.

Students may encounter technological difficulties trying to retrieve class recordings. They may not have access to high-speed Internet, which can delay the transmission of information. Depending on where the student lives, Internet services may not be available at all. Some students may not own computers or other devices that would allow them to view the materials due to financial restraints. These limitations may cause some students to not utilize lecture capture. Others may try to seek alternative ways to access the information. Bull et al. (2007) determined that the effectiveness of this tool may be hampered when barriers such as these are encountered.

Ormond (2008) noted that lecture capture could be used to promote collaboration among students. Students may initially be expected to work independently and not be linked to each other. They do not interact socially which may be desired by some students. Instructors who use lecture capture for pre-class assignments can provide opportunities for classroom discussions and participation exercises. These activities can help promote critical thinking and problem solving among students.

Morales and Moses (2006) cited the right of management and content ownership as concern to instructors and administrators because it could create a barrier for colleges and universities. Institutions might want to protect their rights, especially when uploading content to platforms such as iTunes. The material produced becomes outdated over time and will need to be updated. Someone has to be responsible for performing this task. The process of setting-up and maintaining a system to capture lectures need to be simplified so that instructors will not be afraid to utilize it in their courses. In addition, lecture capture needs to integrate smoothly with the course management systems on college campuses (Morales & Moses, 2006).

Advantages of Using Lecture Capture

Owston et al. (2011) investigated how lecture capture impacted the teaching and learning environment. They concluded that lecture capture provided students with flexibility. Students could decide to listen to part or the entire class lecture. They might choose to use a computer or mobile device for viewing the recordings. They could catch up on course materials when they miss a class. Students had the freedom to select when they would miss class. Since the lectures were available for later use, they found there was less pressure to take detailed notes. Lectures could be replayed at anytime and from any point in the recording. The lectures were used as an additional learning resource, especially to study for exams (Owston et al., 2011).

Forbes and Hickey (2008) reported similar advantages for students using lecture capture technology. In this study, students reported using lecture capture to gain a better understanding of content, as a revision tool, as a mean to reinforce prior learning, and to assist with taking notes. The students were provided the opportunity to use the content in a manner that fit their individual learning needs. Students enrolled in Associate Degree Nursing (ADN) programs where lecture capture has been used, reported that this technology gave them the opportunity to

enact adult learning principles, foster a level of independence, promote critical thinking, receive class material in the event of absence, and learn critical skills in the laboratory setting (Delaney, Pennington, & Blankenship, 2010).

Instructors have used lecture capture technology to allow students to prepare for class. Students view recordings prior to class and class time is used to engage students in discussions and demonstrations related to the subject matter. This approach has impacted students' exam scores and skill performance (Griffin, Mitchell, & Thompson, 2009; Kurtz, Fenwick, & Ellsworth, 2007). Some increase in students' test scores was noted. There was also an improvement in students' performance of skills.

Traphagan, Kucsera, and Kishi, (2010) conducted a study to examine the impact of lecture capture on students attendance and learning. This study was conducted using a geology course at a large university in the southwest. A quasi-experimental design was used to examine the behavior of 364 students in two class sections. One group was provided lecture capture access and the other group was not provided lecture capture access. They found that more webcast viewing was associated with higher performance. Most students reported positive learning experiences and benefits from using webcasts.

A study to collect and analyze students' perception and behaviors associated with instructional delivery using podcasts was directed by McCombs and Liu (2007). The study included 185 students who were given surveys to determine their perceptions of how podcasts facilitated their learning experience. More than 50% of students reported that podcasts enhanced their learning experience and made learning more enjoyable. Video podcasts was selected by 60% of the students as being best for meeting their learning style. Students who used podcasts

reported a decrease in their study time, a decrease in their reading time, and an improvement in their course grades.

Use of Lecture Capture Across Disciplines

Lecture capture technology has been used across many disciplines (Brown & Green, 2007; Hami Oz, 2005; McKinney & Page, 2009; Williams & Bearman, 2008). According to Guertin (2010), instructors and students have created lecture sessions that have been instrumental in clarifying and enhancing students understanding and re-enforcing recently learned material. Members within disciplines who adopted this technology have found ways to make it serve their needs. Some faculty members used podcasts for things other than traditional lectures. These include things such as post-class discussions, review sessions and quizzes, student created podcasts, and summaries of course lectures. Others have used it to provide further instruction and guidance or to lessen students' concern about a host of issues ranging from time management to course assessment.

Health

Nursing education has implemented lecture capture technology in different formats. Bennett and Glover (2008) reported the implementation and evaluation of video streaming in an undergraduate nursing program in a metropolitan university in Australia. Students were surveyed by email with a response rate of 15%. The topic coordinators provided feedback as well. Most students reported watching video streaming to review previously attended lectures, examination preparation, viewing missed lectures, and class preparation. Video streaming proved to be very useful for students who lived a distance from the university. Ninety-one percent of students indicated that it assisted their learning.

Coordinators demonstrated a strong support for video streaming. Benefits experienced by lecturers utilizing this technology included decreased in travelling to rural locations, decreased need to repeat lectures, the ability to review lectures, and the ability to improve lecture performances (Bennett & Glover, 2008).

Delaney et al. (2010) investigated the potential role of podcasts as a teaching strategy for nursing professors to develop critical thinking skills of ADN students. The researchers found that podcasts promote students' independence, critical thinking skills, and responsibility. Furthermore, they suggested that podcasts could be used to deliver course materials to students who are absent and to record skills for students to view and perform.

Although some instructors may be reluctant to implement this technology, universities were asked to provide training through its technology department. The authors suggest using podcast material for quizzes and participation points, which may encourage students' class attendance. They concluded that the use of podcasts in ADN programs have been effective (Delaney et al., 2010).

Adding to the literature, Forbes and Hickey (2008) conducted a study to examine the implementation and evaluation of lecture capture in an undergraduate nursing program. This descriptive study involved 170 undergraduate students enrolled in six nursing courses where podcasting was being utilized. Several faculty and students from a baccalaureate nursing program shared their experiences in initiating and using podcasts.

The results of this study indicated that podcasting did not have an adverse effect on classroom attendance. Most students reported using podcasting at least once during the semester, listening at home on a computer, and that their learning had been affected positively. Students used podcast for a variety of reasons including to clarify content, to reinforce material covered in

class, to assist with note taking, and to review information. They indicated smaller files that were clearly named and identified were most beneficial. In this study, podcasting also was reported to have assisted non-English speaking students with understanding the language. Faculty members would expect to experience some level of anxiety as they begin to record podcasts. However, this should dissipate with experience. Archived files can be used in case of the instructor's absence or other emergencies (Forbes & Hickey, 2008).

Science

Lecture capture technology has also been used in the area of science. O'Bannon, Lubke, Beard, and Britt (2008) conducted a study to examine the effects of podcasts on achievement when used to replace lecture. This study included 69 students enrolled in a core technology course at a large research university in the Southeastern United States. Students were randomly assigned to the experimental group (podcasts) or the control group (lectures). Data were collected using quiz scores, journals, and online survey responses.

There was no significant difference in the quiz scores for students who used podcasts and those who listened to traditional lectures. Most students reported using their computers to access the podcast rather than their mobile devices. Although students found podcast simple to use, they were not ready to use them in place of lectures but for supplemental purposes only (O'Bannon et al., 2008).

Similar results were noted by Stephenson, Brown, and Griffin (2008) from a study conducted to determine the efficacy of virtual lecture, electronic lecture and traditional lecture delivery. Fifty-eight students enrolled in a human genetics course at a university in Southeastern United Kingdom (UK), were divided into three groups, one for each lecture type. Qualitative and

quantitative data were collected using a paper-based multiple-choice questionnaire. The results from this study showed no greater efficacy in delivery method but a significant difference in the number of questions answered correctly based on the level of Bloom's taxonomy being assessed. Students preferred the traditional lecture method to the virtual or electronic methods although there was no significant difference in the mean test scores for each group.

In contrast, Traphagan, Kucsera, and Kishi (2010) investigated the impact of class lecture webcasts on student's attendance and learning. This study was conducted using a large geology course at a large university in the southwest. A quasi-experimental design was used to examine the behavior of 364 students in two class sections. One group was provided webcast access and the other group was not provided webcast access. Data was collected using four methods that included attendance data, performance data, end of semester survey, and webcast access data.

The findings indicated that students with webcast access attended class less frequently than students without webcast access. Students who looked at webcasts more frequently had more absences. The availability of other course materials on line had a greater negative impact on student's attendance than webcasting. This study also found that more webcast viewing was associated with higher performance. The performance of students with webcast access did not differ significantly from those with no webcast access after controlling for initial difference in GPA (grade point average) and absences. Most students reported positive learning experiences and benefits from using webcasts (Traphagan et al., 2010).

Various

Duke University's experiment with using podcasts in a variety of courses in a diverse range of disciplines was reporter by Belanger (2005). This report focused on the feasibility and

effectiveness of the iPod as a tool for faculty and student academic use. Mixed method of data collection was used to gather data from faculty. Approximately 1650 first-year student participants were provided online questionnaires to complete. Faculty and student reported the iPod facilitated lecture capturing and classroom interactions. In addition, some students were able to utilize their iPods to complete interviews, capture field notes, as a study support tool, and for file transfer and storage (Belanger, 2005).

A number of barriers and problems were encounter with the use of iPods. Among these were a lack of knowledge on the functionality of the iPod, device limitations, and lack of training resources. This project impacted the university and as a result collaboration and communication within departments was enhanced. The need for further collaboration was identified which resulted in the improvement of instructional technology (Belanger, 2005).

Lonn and Teasley (2009) conducted a study about podcasts to determine their composition, manner of distribution, at what time they were accessed, as well as how and why they were used. In addition, this study looked at whether students and faculty thought podcasting had a positive effect on teaching, learning, and student achievement. A mixed methods online survey was given to all instructors and students who used iTunes University (U) in a single school year at a large Midwestern university. A total of 22 instructors and 879 students participated in the survey.

The findings from this study indicated that students used podcasts mainly for reviewing lecture concepts from classes previously attended. Instructors used podcasts mainly to record lectures and post them online for students to access. Students did not report that they skipped class as a result of the lecture recordings being available. They reported accessing podcasts from

computers more often than mobile devices. It was also discovered that podcasts helped students learn (Lonn & Teasley, 2009).

Podcasts may include PowerPoint slides that have been synchronized with audio or they may be presented as two separate files. Griffin, Mitchell, and Thompson (2009) investigated the usefulness of audiovisual synchrony in podcasting and its possible pedagogical benefits. A group of 90 full-time students from different degrees in the science and social science fields at a university in Southeastern UK participated. Data was collected using an online multiple-choice test and an online survey.

The researchers discovered empirical evidence that indicated synchronized audio and video media were more effective than single media files containing the same material. Although divided in two groups, all participants were presented materials using both formats. The results showed a significantly higher correct response rate on test scores for the synchronized format than for the separate format. Some levels of Bloom's taxonomy showed no substantial difference. Pedagogical benefits cited in this study for students included learning flexibility, learning at one's own pace, and selecting which time and by which means to learn (Griffin et al., 2009).

In a study conducted by Bolliger, Supanakorn, and Boggs (2010), learners cited similar benefits of using podcasts. The purpose of this investigation was to examine students' level of motivation with the use of podcasts in the online environment at a public research university in the Western, U.S. A questionnaire was administered to 302 undergraduate and graduate students enrolled in 14 online courses in nine program areas that utilized podcasts in iTunes U. Surveys were completed by sixty-three percent (191) of the students. It was determined that the participants were moderately motivated by the use of the podcasts in their online courses.

Differences in student motivation based on gender, class standing, and prior online learning experiences were discovered. The students reported that they grasped the material in the podcasts, the podcasts held their attention, and that the instructional matter was relevant (Bolliger et al., 2010).

Benefits of using podcasts as cited by these learners included convenience, flexibility, portability, and the ability to hear the instructor's voice which provided a degree of humanization.

Best Practices

Instructors and students have discovered ways to utilize lecture capture technology and some have offered suggestions for best practice to others based on their experiences. Among these are Chan, Lee, and McLoughlin (2006) and Ormond (2008), who suggested the following tips for improving the quality of podcasts:

- The recordings should be limited to 20 minutes or less.
- The audio equipment should be of a decent quality.
- The topics selected should be of importance.
- Podcasts used for pre-class assignment may increase students' enthusiasm.
- Producers should be prepared, organized, and creative during the recordings.
- Each podcast should be identified with date, number, and name of topic/speaker.
- The presenter should speak clearly and be as natural as possible.
- A clear description should be given for any visuals, charts, books, etc.
- Audio podcasts should be used to convey simple rather than intricate topics.
- A single podcast should include a moderate amount of information.

- Podcasts should be different from information provided in class.
- Podcast segments should be sequenced in a logical fashion with transitions in between.
- Podcast should be posted in a timely manner.
- Podcasts subscriptions should be easy.
- Provide technical support in case problems arise.
- Decrease levels of assistance as learners increase their production skills.

The review of the literature shows that lecture capture technology can impact learning goals and the quality of learning experiences depending on the format in which it is used. As instructors continue to seek ways to improve their performances and to impact the lives of students, this technology has the potential to assist in their effort. Instructors should evaluate this technology to see what value it holds in assisting them as well as students in reaching their educational objectives.

The literature review also showed that only a few empirical studies have been conducted to examine the process by which instructors adapt lecture capture technology. This study was needed to add to the existing research. Prior to implementing an idea, instructors commonly seek evidence by which to base their decisions. The results from this study may be made available for instructors to use as a guide to help them in making best practice decision for the use of this instructional technology in their courses.

Summary

This chapter provides a review of the literature regarding lecture capture and the different formats in which it has been used. It speaks about how this concept has been used across disciplines. It shows that there are difference and similarities in how instructors have put this

technology tool to use in their courses. It gives an overview of what has worked well and what has not worked so well during the implementation process.

This chapter also speaks to the lack of research specifically aimed at the process that instructors have used in adopting this technology tool. Instructors are using this form of technology and there is a need to document what they have done to serve as a source of reference as well as to shape policies and practices across disciplines. Lecture capture implementation has impacted not only instructors but students as well. This impact has changed the manner in which some have experienced the delivery of instructional material.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

Qualitative Design

The qualitative research method begins with the researcher talking with or observing a few people who have first-hand experience with the phenomenon being studied (Polit & Beck, 2008). It includes the use of interviews as a way to understand the meaning people make of their experiences. Kvale and Brinkmann (2009) stated, "An interview is a conversation that has a structure and a purpose". In addition, they specified that the aim of the qualitative research interview is to obtain descriptions of the interviewee's life world. Interviews are conducted to gain more insight into people's stories (Seidman, 2013). Interviewees engage in story telling that gives meaning to what they have experienced.

Qualitative research includes a variety of methods that share common features (Creswell, 2008; Denzin & Lincoln, 2005). The qualitative researcher generates textual data by using multiple forms including asking questions during interviews, making observations, recording notes, or participating in events and reflecting on this participation. The investigation creates descriptive and/or narrative information. The data is analyzed, themes are generated by reading and re-reading data over time and categories are developed. Patterns of interconnected themes and processes are identified as a way of understanding the whole (Polit & Beck, 2008). An inductive approach is used to produce evidence. Descriptive qualitative studies present complete summaries of events in everyday language (Sandelowski, 2000). They provide a candid description of events or phenomena. The researcher seeks to describe the experiences as richly

and accurately as possible. Researchers collect as much information as possible to seize all the parts that make up an event.

The aim of this study was to explore and describe the experiences of nurse educators who had implemented lecture capture technology into ADN programs in Alabama. The participants selected for the sample were needed to fulfill the study's aim. The researcher used in-depth interviews to allow the participants to recreate their experience with lecture capture technology implementation. The researcher talked with the participants about their experiences and perceptions. The researcher used a descriptive approach in which all events, actions, and occurrences were documented and described. The importance of an experience was shared with others who also had a comparable experience. The researcher looked for patterns but did not try to develop numbers or norms to explain the findings.

IRB Approval

Approval for this study was obtained from the Institutional Review Board (IRB) at The University of Alabama (Appendix G). The IRB has been charged with ensuring the safety of human subjects in research (Marshall & Rossman, 2011).

Recruitment and Selection

After obtaining IRB approval from The University of Alabama, a letter (APPENDIX A) was sent to the Deans/Directors of Nursing in the Associate Degree Nursing Programs within the Alabama Community College System. The letter explained the purpose of the study and provided the researcher's email address and telephone number. The Deans/Directors were asked to inform the nursing faculty of the study and provided the contact information of the researcher to the faculty so that potential study participants could contact the researcher. Thereafter, the

researcher sent a follow-up letter (APPENDIX B) to each Dean/Director to ensure receipt of the initial letter, distribution of information to faculty, and to encourage participation.

The researcher interviewed a total of eight potential study participants to determine if they met the criteria for inclusion in the study (APPENDIX C). After determining which participants met the inclusion criteria, the researcher arranged a meeting with the participants either face-to-face, via Skype, Face Time, or cell phone. Two potential participants failed to contact the researcher after several attempts were made to set up interview schedules. They were not included in the study. The researcher provided participants with information about the study and obtained their written informed consent. The participants also supplied the researcher with their contact information. Each participant completed a demographic survey (APPENDIX D).

The researcher obtained informed consent (APPENDIX E) from study participants. The informed consent helped to ensure that the participants were aware of the researcher's intentions. The researcher informed the participants that this research was being conducted as part of a dissertation study at The University of Alabama. The participants were further informed that the results of this study may appear in publications. Also, the participants were informed that their participation was strictly voluntary, minimal anticipated risks were involved and they may withdraw from the study at any time.

In addition, the researcher asked permission to make an audio recording of the interviews. The participants were informed that the recordings would be transcribed and all information would be stored in a secure location. The researcher assured the participants that their privacy and identity would be protected. Participants' names were not used and they provided the researcher with an alias. The participants were provided with the researcher's and the researcher's dissertation chairperson contact information.

The researcher asked participants if they had any additional questions concerning the study. If questions existed, the researcher answered the questions. If there were no additional questions, the researcher and participants planned interview sessions. Semi-structured interviews were conducted at a mutually agreed upon dates, times and settings. An interview guide was used to provide structure to the interviews (APPENDIX F). The format was used to assist the participants in reconstructing their experiences (Seidman, 2013). In-depth interviews are often conducted by allowing participants to provide meaning to their experiences and by using questions that follows what the participants have stated. The following questions were asked during the interviews: 1) Can you tell me about yourself and your teaching experiences? 2) How has lecture capture technology work for you and your students? 3) In what courses have you used lecture capture technology? and 4) How much time is allotted in your schedule to prepare your recordings?

Setting

The ACCS consists of 21 two-year colleges that were joined by the state legislature and which fall under the umbrella of the Department of Postsecondary Education (Alabama Community College System, 2014). Annually, the ACCS serves about 300,000 individuals of whom nearly 100,000 are enrolled in accredited courses. The students enrolled in the ACCS include members from various racial, gender, ethnic, socio-economic statuses, as well as geographical locations, who attend classes on a full-time as well as a part-time basis (Alabama Community College System, 2011).

The ACCS instructs and teaches more nurses than any other system of higher education in the State of Alabama. There are 20 Registered Nursing Programs within this system. Registered nursing ranked second in the top ten majors for the ACCS. The nursing programs are

located throughout the state to service individuals in urban, suburban, and rural communities.

According to a published document, *About ACCS,* the ACCS has shown a commitment to maintaining the effectiveness and efficiency of all departments and personnel by supporting technology and offering training to businesses and industries throughout the state (Alabama Community College System, 2014). Technology is being used to support educators in the delivery of course materials and the types of educational experiences students receive.

Subject Population

This study included six nurse educators from several associate degree nursing programs who were currently employed in the State of Alabama. Glesne (2011) related that purposeful sampling would guide the researcher in obtaining rich information about the study. Small sample sizes are conducive to the in-depth interviewing method. Eight nurse educators, six of whom were included in the study, contacted the researcher. The researcher sought to include new and experienced nurse educators from different sexes, races, ages, and locations. The participants included registered nurses in the State of Alabama who held a minimum of a Master's Degree and who had used lecture capture technology in their courses or who were currently using lecture capture technology.

Sample Demographics

The demographic questionnaire asked participants to identify their age, race, sex, number of years teaching, highest degree obtained, position at institution, location, technology proficiency, types of lecture capture technology used, courses in which lecture capture was implemented, length of lecture capture recording, and the number of semesters lecture capture has been used. By identifying characteristics of study participants, the researcher was able to determine if the findings were applicable to specific groups or to all groups.

Demographic data were summarized using Microsoft Word. The demographic data provided a synopsis of the study population, experience, knowledge and proficiency (See Table 1). The participants in this study were all full time nursing instructors in the ACCS. They possessed a wide range of experience and backgrounds. A description of their rank, title, degree, and years of teaching experience is included in Table 1. The names used in this study are all pseudonyms.

Table 1

Study Participants' Demographics

Name (Pseudonym)	Age	Gender	Race	Status	Highest Degree	Years Teaching	Location within AL
Natalie Moore	46-55	Female	Caucasian	Full-time	Masters	6-10	North East
Dannie	36-45	Female	Caucasian	Full-time	Masters	0-5	North East
Magnolia Bell	46-55	Female	Caucasian	Full-time	Masters	11-15	North East
Diane	36-45	Female	Caucasian	Full-time	Doctoral	6-10	Central
Wonder Woman	46-55	Female	Caucasian	Full-time	Doctoral	16-20	North East
Emily	36-45	Female	Caucasian	Full-time	Masters	0-5	South East

Participants

The mean age of the participants in this study was 45.5 years (range, 36-55 years). The nurse educators were all Caucasian females who worked full-time. Their years of teaching experience ranged from two to nineteen years. A majority of the participants held Master degrees (67%) and the other participants held Doctoral degrees (33%). The participants were employed at 2-year colleges located predominantly in North East Alabama (67%); and two were employed at colleges located in Central Alabama (17%), and South East Alabama (17%), respectively.

Natalie Moore

Natalie Moore is a nursing instructor who has taught nursing courses for nine years. She has taught on the associate and bachelor's degree level. She was a clinical adjunct instructor prior to becoming a full-time nursing instructor. Her experience within nursing is primarily in the medical-surgical area. She has taught courses in Fundamentals of Nursing, Health Assessment and Adult Nursing. Her classes have consisted of about 40 students each semester.

Dannie

Dannie is a nursing instructor with teaching experiences in medical-surgical nursing, pediatrics (Peds), and obstetrical (OB) nursing. She has previous experience as a family nurse practitioner and a nurse manager. She has been teaching for two years in an associative degree nursing program. She has taught in Adult Nursing, Maternal And Child Nursing, and Nursing Through The Lifespan I. The numbers of students enrolled in her courses have ranged from 32-105 each semester.

Magnolia Bell

Magnolia Bell has been a full-time nurse educator for nine years. She was an adjunct nursing instructors for eight years before accepting a full-time position. Her background in

nursing includes medical-surgical, OB, and Peds. She has taught in Fundamentals of Nursing, Health Assessment, Maternal And Child Nursing, and Adult Nursing. She has had from 50-200 students per semester in her courses.

Diane

Diane has been in her position as a nurse educator for the past nine years. She has taught mainly in the second semester of five semesters. The courses she has taught include Adult Nursing, Introduction to Pharmacology, Fundamentals of Nursing, and Nursing Through The Lifespan III. Her courses have included from 100-150 students per semester.

Wonder Woman

Wonder Woman has taught nursing courses in associate, bachelor's and master's degree programs. She has had full-time and part-time positions over the past 17 years. She has taught Fundamentals, Health Assessment, and Leadership nursing courses. Most recently she has taught Fundamentals of Nursing and Health Assessment. She has had about 40 nursing students each semester in her courses.

Emily

Emily began her career as a nurse educator by working as a part-time clinical instructor. She has been teaching full-time for the past two years in the same medical-surgical nursing course. She has taught Adult Nursing. The numbers of students enrolled in her courses have ranged from 35-55 each semester. She has rarely had enrollments in the 50's.

Data Collection

The researcher conducted three separate semistructured interviews with each participant that ranged in length from 30 minutes to 1 hour. The three interviews were spaced at least three to seven days apart. This time phrase allowed participants time to think about the interview. It

also allowed additional contact to occur in a time frame in which the connection was not lost. The researcher used probing questions whenever there was a need to clarify comments made during the interviews (Polit & Beck, 2008). These interviews were conducted either face-to-face at designated meeting places, via telephone, Skype or Face Time. The interviews were recorded using a digital voice recorder.

The researcher made reflective notes about each interview session and maintained these in a binder. Glesne (2011) noted that the form of a field notebook is dependent on the researcher's preference. The notes were later transcribed into a document. Data was also collected from websites of colleges where participants were employed. All files were stored in a locked file at the researcher's home.

Data Transcription

The researcher transcribed all of the data verbatim. The data was transcribed manually into Microsoft® Word® documents and stored on a laptop computer as well as an external hard drive. The laptop computer is password protected. The researcher maintained and secured all data in a secure location.

In an effort to maintain the meaning and intent of the conversations, the researcher conducted member checking by sending the transcriptions to the participants and obtaining confirmation that the typed report captured their implications and purposes. Participants were asked to make any necessary corrections and submit these to the researcher. The researcher made any necessary corrections to the documents. Study participants were asked to share documents pertinent to the adoption of lecture capture technology in their courses, departments, and work places including, but not limited to letters, emails, and minutes from meetings. No documents

were obtained from study participants, but documents were retrieved from some of the Alabama Community Colleges' websites.

Data Analysis

The data was analyzed and coded to determine if there were patterns of congruency. Coding was done as a way to find relationships that exist between things. It is a way of putting pieces of a puzzle together that are similar. This process allowed the researcher to look at what was being communicated through the data that had been collected and how it connected with other categories, themes and patterns. The data was coded manually as it was collected.

The researcher coded the data by reading and rereading the transcripts repeatedly then placing data into broad categories. The broad categories were further reduced through the constant comparison method (Glaser & Strauss, 1967). They suggested that in order to generate theoretical ideas, the researcher must constantly redesign their theoretical notions as they review the materials. The theory should help the people involved in the circumstances to understand and make sense of their experience and to better handle the circumstances. As the data was examined and comparisons were made, emerging ideas helped the researcher give meaning to the data and develop themes.

The researcher copied each participant's transcript and cut the coded transcripts into strips of paper. Each strip was divided and attached to a colored coded theme that was used to further exam the data. The researcher looked at what was being communicated through the data that had been collected and how it connected with other themes and patterns. As the data was coded, the researcher inductively developed a thematic analysis. Four themes emerged from this process.

These activities started during the fall, 2013, and continued through the spring, 2014. Approval for this study was obtained through the IRB at the University of Alabama in October 2013. Following IRB approval, contact was made with each Dean/Director of an Associate Degree Nursing Program in Alabama through an email that was sent in November 2013. A second email was sent a week later to Deans/Directors who had not responded to the initial email as a reminder of the researcher's initial request. One college required approval from their IRB prior to the Dean/Director contacting the nursing faculty. After receiving approval from this college's IRB, the Dean/Director forwarded my request for study participants to the nursing faculty.

Potential study participants began contacting the researcher within a few weeks after the letters were sent to Deans/Directors, after it was determined if they met the criteria for study inclusion. Informed consent was obtained and interviews were scheduled at locations, dates, and times that were mutually agreed upon. Interviews began in December 2013, and continue through January 2014. Data transcription and analysis continued throughout the interview process. Member checks were completed in January and February of the Spring 2014 semester. Constant comparisons were made from data collected to look for common themes and experiences.

Researcher's Positionality Statement

After spending nearly 20 years in the acute care setting as a registered nurse, I was hired as a nursing instructor at a two-year college in the ACCS. It was during this time that I gained exposure to lecture capture technology and developed a desire to implement this tool in my courses. To my knowledge, none of the other nursing instructors at my college were utilizing this tool at that time. Even though I was employed by the ACCS, I had made very few contacts with

other nursing instructors within this system. I knew none of the study participants prior to the beginning of this study and only three of the Directors/Deans, one of which was the director at my place of employment.

I developed an interest in technology tools in the classroom and began by examining what I was doing. I knew I was teaching, but I always felt like I was "dumping" a lot of information over a short time span which didn't seem to be very effective. As I progressed through my doctoral studies, I realized that lecture capture technology was something that very few nursing instructors at my college were utilizing, although this tool was readily available. My implementation of this technology was delayed because of uncertainties and challenges that I experienced. When I finally began using Tegrity software, I prerecorded several lectures that contained medical-surgical nursing content. The lectures received mostly favorable responses from students.

I became interested in researching what other nursing instructors within the ACCS were doing with this technology tool and how they had gone about implementing it in their classrooms. I was not aware of what teaching methodologies were being employed at other institutions, other than lectures. I discovered that the tradition of lecture was still being used as the predominant mode of instruction in nursing education as well as other fields of study. I noticed my students and the manner in which they used technology tools such as cell phones, laptop computers and computer programs. Some students offered to assist me with equipment and websites, etc. in my classroom. Most of them were very knowledgeable about the latest tools and were not ashamed to admit it. Although I was reluctant to admit my deficiencies with technology to my students, I sought assistance from the nursing computer lab technician, the coordinator at the Center for Teaching and Learning, and my children.

Nurse educators have been challenged to utilize more active learning activities in their courses to assist students in becoming critical thinkers who are ready for the workforce. I was determined to use more technology in my classroom, but I didn't know much about anything so as I read about what others were doing, I inquired if the same technology was available at my college. If it was, I tried to implement the technology in my courses. If it was not, I called some colleagues to see if they had used it at their institutions and how it worked. I began on my inquiry to determine if lecture capture technology could be effective in assisting instructors in their delivery of course materials and if so what was involved in this process.

When this study was initiated, I identified myself as a graduate student at the University of Alabama. Over the course of interacting with the study participants, they also became aware that I was employed as an Instructor of Nursing within the ACCS. At this point, I could not conceal my title; nor could I hide the fact that I had experiences similar to those that were shared by the participants. I attempted to elude bias during the data collection, analysis, and reporting by using member checking, audit trail, and triangulation of data (Denzin, 1989; Denzin & Lincoln, 2005; Polit & Beck, 2008). By revealing my background at the beginning of the study, I hope to be aware of the bias and remain impartial throughout the study.

Risks

The risks for an interview conducted on human subjects could include anxiety as well as issues concerning privacy and confidentiality. The researcher did everything possible to alleviate any potential for increased anxiety during the interview process. The researcher maintained the participants' confidentiality and privacy. Participants were notified that they had the right to withdraw for the study at any time. The study participants' personal information such as name, address, and place of employment was not identified except to the researcher. The participant

provided the researcher with an alias if they desired to do so. Although there were risks of emotional responses, participation was on a strictly voluntary basis.

Benefits

The benefits for participating in this study, although not conclusive, may have included feelings of happiness, relief, and constructivism. The participants may have felt happy that they were contributing to their profession and sharing their experiences. They may have felt relieved that their voices were being heard. They may have also understood that they were engaging in activities that may further promote curriculum, education and their work environment.

The researcher received no funding for this study. The researcher paid all expenses incurred during the study. Each of the participants received a $25.00 gift card and a "Thank You" note for their participation in the study.

Trustworthiness and Validity of Study

According to Creswell and Miller (2000), validity consists of plans that the researcher uses to ensure credibility of their study. Three separate in-depth interviews were conducted with each study participant over a period of several weeks. Seidman (2013) related that the three-interview technique include features that improve the achievement of validity. The participants checked for consistency in what they say over a period of weeks. Seidman (2013) further stated that by interviewing several participants, the researcher could check the participants' experiences and comments against each other. The researcher's goal was for the participants to describe their experiences and what they meant to them.

Triangulation is a term used to describe the use of combined sources to draw inferences about what makes up the truth. Denzin (1989) noted that the goal of triangulation was to overcome the inherent biases that occur with single method studies. Triangulation uses multiple

sources to capture a more complete representation of conclusions. In this study, the researcher's method of data collection included interviews, reflective notes and data retrieved from websites of colleges where participants were employed.

An audit trail is a systematic accumulation of information that would allow an independent investigator to draw conclusions about the data (Polit & Beck, 2008). The researcher developed an audit trail through interview transcripts, reflective notes, theoretical notes, and drafts of final dissertation report. The interviews were recorded and stored on a digital voice recorder for preservation of the actual conversations with the researcher and study participants as suggested by Seidman (2013). Interview transcripts were used repeatedly to code and analyze the data. Data was reduced and portions were used to develop a final written report of the study. The researcher used reflective notes to try recapturing experiences that occurred during the process of collecting data. All data collected will be stored and preserved for a minimal of 5 years.

Member checking was done after the interviews to increase the credibility, validity, and transferability of the study findings (Lincoln & Guba, 1985). Comparison was made to what the participants said during their initial and subsequent interviews to determine if similarities and difference in the participants' statements existed. Validity of the study was also established through verifying the transcriptions with each study participant to ensure the record had accurately captured their thoughts. The researcher compared descriptions provided during data collection. This information was then related to findings in the literature review to help support consistency or inconsistency in the findings.

Protection of Rights

The identity of study participant will not be published at anytime. The recorded interviews did not include names of the participants. The interviews were identified only by a serial number. The study participants were identified by an alias that they provided to the researcher. The recordings are kept under lock and key to avoid unauthorized use. If the data leads to scientific publications, the confidentiality of the participants will be maintained. Files will be destroyed after presentations have been made and publications have been published or after a period of approximately five years.

Summary

This chapter provides a summary of the procedures used to conduct this descriptive qualitative research study. It gives the details of the process used to obtain approval for the study from the IRB and how study participants were recruited and selected. Prior to beginning the interview process, the researcher had to assure that participants knew their rights and that these rights would be respected throughout the study. The researcher obtained information by conducting qualitative interviews, transcribing, coding and analyzing this data. Member checks were conducted to assist with validating the data as well as to ensure that the researcher had correctly captured what each participant meant.

CHAPTER IV

RESEARCH FINDINGS

This chapter presents the results and findings of qualitative data analysis from interviews that were conducted with study participants about their experiences with implementing lecture capture technology in their courses. The researcher's goal was to provide insight into the knowledge, skills, practices and the meaning attached to the use of lecture capture technology from the perspective of nurse educators in ADN programs in Alabama. Questions were developed to help guide the interview process. Data was obtained through surveys, interviews transcripts, interview notes, and documents obtained from colleges websites. The interviews began during the Fall Semester of 2013 and continued during the Spring Semester of 2014. The interviews, conducted with six nurse educators employed by the ACCS, were recorded using a digital voice recorder and transcribed verbatim by the researcher. In search of emergent themes, the researcher reviewed and proofread the transcripts multiple times.

Research Questions

The principal research question that was used to guide this study was: What was the experience of nurse educators in Associate Degree Nursing Programs in Alabama as they implemented lecture capture technology in their courses? Other supplementary questions that were explored during this study included the following: 1) How did nurse educators in Associate Degree Nursing Programs in Alabama come to use lecture capture technology? 2) In what courses has lecture capture technology work best for nurse educators in Associate Degree Nursing Programs in Alabama? 3) What factors influenced which lecture capture technology was

selected by nurse educators in Associate Degree Nursing Programs in Alabama? and 4) How has lecture capture technology changed what nurse educators in Associate Degree Nursing Programs in Alabama do in their classrooms?

Research Questions and Thematic Alignment

As themes were identified, interviews were re-examined to assist the researcher in identifying patterns and themes that may have been previously omitted. The researcher made notes, which were compared and revised using the constant-comparative method and new themes emerged. The four themes identified included the following: *factors, what we're doing, challenges, and triumph*.

The principle research question which focus on describing the experience of nurse educators as they implemented lecture capture technology, aligns itself with the themes of *factors, what we're doing*, *challenges*, and *triumph.*

The theme of *factors* is aligned with the first and third supplementary questions, which describe how educators came to use lecture capture technology and some of the factors that influenced nurse educators as they made their decision to implement this technology.

The second supplemental research question is aligned with the theme of *what we're doing.* Nurse educators provided information about the courses in which lecture capture has worked best.

The final supplemental research question, which describes how lecture capture technology has changed what nurse educators do in their classroom, is aligned with the themes *what we're doing, challenges, and triumph.*

Themes Discovered By the Research

The participants' responses are provided using their own words to reflect what they

experienced as lecture capture was implemented in their courses. The researcher identified four emergent themes, which included: *factors, what we're doing, challenges, and triumph.* These themes were used to assist the researcher in identifying the data and answering the overarching and supplementary research questions (See Table 2). The themes were aligned with the research questions and were used to characterize the accounts of these educators.

Table 2

Themes

Themes	Meaning
Factors	Things that contribute to a result. Forces that influenced a decision. This included internal and external sources that contributed to the use of lecture capture technology.
What We're Doing	The manner in which lectures are being recorded. Describes how nurse educators are utilizing the technology. Various descriptions provided by nurse educators included "pain", "a headache", and "fun."
Challenges	A series of difficulties encountered while performing a duty. Things that didn't go right as nurse educators used lecture capture technology. It included difficulties encountered by instructors and students. A lack of what is needed.
Triumph	A joyful feeling in response to success. It is related to the achievements that have been made since the implementation of lecture capture technology. The changes experienced by nurse educators and students.

Nurse educators provided accounts of what they were doing in their classrooms, the type of lecture capture technology used, the courses in which lecture capture was used, length of recordings, and how long they have been using the technology. A summary of the educators' experiences with lecture capture technology is provided in Table 3 (See Below). Educators told about their own experience and how they used lecture capture technology in their courses, what worked well and worked didn't work well.

Table 3

Study Participants' Experience with Lecture Capture

Name	Proficiency	Capture Type	Nursing Courses	Course Format	Semesters Used	Recording Length
Natalie Moore	Very	Tegrity, Panopto	Medical-surgical, Fundamentals, Health Assessment	Face-to-Face, Hybrid	4-6	More than 30 minutes
Dannie	Very	Wimba	Medical-surgical, Pediatrics, Maternal-Child	Face-to-Face	7-9	More than 30 minutes
Magnolia Bell	Very	Tegrity	Medical-surgical, Pediatrics, Maternal-child, Fundamentals, Pharmacology, Health Assessment	Face-to-Face	7-9	More than 30 minutes
Diane	Very	Tegrity, Mediasite	Medical-surgical, Fundamentals, Pharmacology	Face-to-Face	10 or more	More than 30 minutes
Wonder Woman	Somewhat	Wimba	Fundamentals, Health Assessment	Face-to-Face	10 or more	More than 30 minutes
Emily	Very	Tegrity	Medical-surgical	Hybrid	4-6	More than 30 minutes

Factors

The diffusion of innovation theory proposes that an innovation is adopted as a result of an idea being passed down through channels (Rogers, 2003). The individuals' decision to adopt the

innovation is decided in stages. The process of adopting lecture capture technology began with an awareness of the idea. This initial phase differed among some of the study participants. For some instructors using lecture capture was optional, but for others, it was mandatory that they use this technology. One participant shared the following about how she and other nurse educators at her college came to use lecture capture technology:

> I was introduced to that here at this institution…I do like it. I think it's helpful for the students. Although not all students like it, it is a learning strategy or a teaching strategy that they can go back to for reinforcement. I think it helps with their note taking and for them to gain a better understanding of the content. Some students don't like it so they don't use it. But, depending on what their learning style is, you know, it is available…I don't know all the factors. The main thing that comes out to us is the contract was ending. It's a money issue (Wonder Woman, Interview 1).

She continued by stating,

> No, it was essential software they said they would like for us to implement. Therefore the command came...it's really out of my hands. I guess you can say the administration decides that… (Wonder Woman, Interview 2).

This participant indicated that a decision was made by someone other than herself to implement this technology in her classroom. She was not given the option to not use this technology, although it was presented as "something they would like" for she and her coworkers to utilize. She was faced with the reality that someone, other than herself, had decided that this technology would be implemented in her class.

Another educator stated the following about the implementation process at her college. She said,

> Well we were forced into it because of the night program. That's their only source of lecture material. Their program was designed that they watched the lecture at home, and then come in for reinforcement and then they have their clinical. That's how their curriculum was designed. It's like we've got to do this because the night class has to have it (Magnolia Bell, Interview 1).

This participant related that the implementation of lecture capture technology was something she

was forced into doing. The college decided to make a curriculum change that allowed students to received their lectures at home prior to coming to class. Initially, the goal was to provide live lectures to the day students and record these lectures for the evening students. She reported the following:

> We started lecture capture, we use Tegrity, and we started that back in 2005 when we started our part-time evening program. The idea of it was we would capture the lecture in the classroom with the day class in order that the night class would get their lecture strictly online with the computer. That's how it all started. And then the day class decided that they were missing out and then they pretty much demanded that they have access to that Tegrity lecture. Then it became something that was accessible to the night class and the day class. We all started recording just as we were doing the daytime lecture. We all started doing it, just recording it from the podium during the day class lecture (Magnolia Bell, Interview 1).

She further stated,

> Well we were forced into it because of the night program. That's their only source of lecture material. Their program was designed that they watched the lecture at home, and then come in for reinforcement and then they have their clinical. That's how their curriculum was designed. It's like we've got to do this because the night class has to have it …Now the idea was for them to get to the lectures at home on the Tegrity on the computer and then they would come to class once a week. The intent of class was to get any clarification but more importantly to "cement" that material…(Magnolia Bell, Interview 1).

The implementation of lecture capture technology at this institution was done to meet the needs and demands of students. This technology provided a way for students to receive course instructions and to cover content that was difficulty to cover due to time limitations. In addition, the participant reported that she used lecture capture to clarify content presented.

Another participant shared the following about the process of implementing this technology. She said,

> It's what we're doing pretty much. It's not something that I just opted to do; it's what all the instructors are using. When I got hired in there, they said ok this is what we do (Dannie, Interview 1).

The participant shared that this was not an option, but something that the other instructors were doing and she was expected to do the same. This was the routine for the nurse educators at this institution and this expectation was passed down to her through her colleagues. This participant continued by describing her experience as follows:

> It's a headache. It can be a pain sometimes. Especially whenever it's not working properly and it doesn't record and you've got your whole lecture that you did and you think you did a wonderful job in the lecture then only to discover that it didn't record. So sometimes that can be a pain because then you've got to go in your office and rerecord the lecture and all that kind of stuff like that. But it works, I guess. Just sometimes it's that little issue or you forget to click a button to record your voice. They can see the slides going but they don't have your voice recorded. That can kind of be a pain too sometimes… to study so they can listen to the lecture again and to relook at their notes. Pretty much primarily study reasons (Dannie, Interview 1).

Although she had implemented this technology, the participant compared her experience to a "headache" and "pain." This indicated that all was not well with the process of her adopting lecture capture technology and that part of her experience had been uncomfortable. Aside from enduring some discomfort while using this technology, she felt that lecture capture gave students the opportunity to listen to the lecture again and assisted in their studying.

One participant reported that lecture capture was optional for some instructors but mandatory for others. She stated,

> College-wide, it is optional to other disciplines, but as far as nursing, we do use it. As far as being mandatory, it is pretty much is mandatory. We never just said you must do this, but it is expected of us to do it so that the student must have that material to go back and hear it again. You know nursing has so much material. We cover such a vast amount at one time. They have the option of going back and hearing the lecture again to assist them in studying the material (Natalie Moore, Interview 1).

Being that it was never stated that instructors "must" use lecture capture technology; it was expected that the nursing instructors would do so. This implies that the use of this technology, even if not directly written or spoken, was to be performed as part of instructors teaching role.

Another participant shared that students' request was the biggest factor in their implementation of lecture capture technology at her institution. She stated,

> It was something we really tried several semesters ago. I guess students' request was the biggest factor (Diane, Interview 1).

This college's decision to implement lecture capture technology had been influenced by students' request. The faculty was allowed to try the technology to determine if it would fit into their setting as well as to allow instructors hand on experience. This participant also spoke about some other factors that may have had a role in the decision making process at her workplace. Diane stated,

> I was not involved in that decision making of course. I'm not really sure what all was considered. I know cost was a factor and then access and what our resources that we currently had and how much it would do with Tegrity. I'm not really sure all the details on it…it's amazing. Students love it. When the technology messes up, the students go crazy. They really depend on it (Interview1).

This college considered the cost of the technology and how it would fit in with the technology that was already available. The participant stated the college had Wi-Fi, a computer lab, and a server. The technology being used was supported by technology structures in place and by students' favorable opinion. It fit into their existing instructional technology systems and most students who utilized lecture capture expressed that they were satisfied.

Lecture capture technology was implement by another instructor because of its' convenience. This instructor shared that it was optional. She stated,

> I use Tegrity. I used it for the first time in spring of 2012. What prompted that was in my doctorate program I had to go to my campus, and in lieu of lecture for the day I recorded it and it was a PowerPoint presentation with a voice over. It was that type of format… It is optional but there are many that use it. I don't know how many there are but I'm not the only one (Emily, Interview 1).

This participant indicated that this technology allowed her to present course material when she

needed to be absent from class. An interruption in her schedule did not hinder her students from receiving course instructions. Although it was optional, she indicated that other instructors were also using this technology in their courses. She reported that it is still an optional teaching tool at her workplace and some instructors have not implemented it in their classrooms. As a result, she plans to increase the number of recordings and to make some modifications in the way she records.

Instructors related that their use of lecture capture technology was influenced by other factors as well. One participant said the following about her reason for using lecture capture. She said,

> …When we had the Wimba, one of the reasons that we chose to go with the Wimba, was because of the math component. The math instructors could write on the Wimba and it could show up on the screen. That was the big selling point for Wimba…Also it was economical. I think the college was able to purchase for a less amount than other programs…our main purpose here in the College of Nursing at…is just so they can hear the information again. They can use it as a study tool. A remediation. (Natalie Moore, Interview1).

This instructor listed cost and special features, such as the ability to write math problems on the screen, as reasons for the selection of this technology at her college. The college used this technology to provide students with a way to study and remediate. It appeared that this product served a specific instructional need and it was cost effective.

The implementation of lecture capture was impacted by instructors' knowledge, beliefs, and past experiences. Most instructors stated they had never used this technology. Some had used it while in graduate school or while employed at other institutions of higher learning. Others had experience with a previous form of this technology. Regardless of what their prior experiences were, instructors expressed a need for training and orientation before implementing a new technology tool in the classroom. The participants reported that in many instances their

colleagues gave them instructions on how to use the software. They developed a system of "each one, teach one."

One participant stated,

> Well I learned how to use it by other instructors showing me how to use it… Just using it and some trial-and-error. Like I would forget to hit the lock talk button and so they wouldn't get my voice but they would get my slides going. That kind of was hard sometime…but, we're changing lecture capture companies and so we're going to be having an in-service for the new stuff (Dannie, Interview 1).

This nurse educator received some instruction on how to use lecture capture from her coworkers. She also learned from mistakes she made as she implemented the tool. This was difficult at times, but she managed to learn from her mistakes. She continued working with the system and as she did so she continue to learn.

Other instructors reported similar incidents in which they needed support as they worked through implementing lecture capture. Sometimes support was needed from the IT department. All instructors reported the availability of IT support, but this support varied in its availability. At some schools, an IT personnel was assigned to the nursing department and was readily available to assist where needed. Other colleges rotated IT support personnel between divisions and campuses. IT support could be obtained by sending emails or by calling. Some IT services were available via a 24-hour number that was accessible to faculty and students.

Participants reported that the IT department was involved in the selection of lecture capture systems and had been involved in some of the training sessions offered by companies at the initial installation of a new lecture capture system. The IT department received outstanding accolades by some participants and others spoke unfavorably about the services they provided. One participant reported that the IT department was "very, very supportive." She considered her

IT person to be the "guru" and reported that if he doesn't know how to fix something, he finds out how to fix it.

Another participant reported that the IT person was shared between departments on her campus. This was a drawback and could result in a loss of "precious time" while waiting for issues to be resolved. She shared this about the IT personnel assigned to her campus. She said,

> …And then here, where I work, we have an IT person but he is not here every day of the week. And that is our limitation. If we have a problem and he's not here, we had to do it over the telephone. He has to try to tell us how to fix it. So yes we do have a computer person but they are not always available… As far as their knowledge level of the computer program, it's not. Some of them are really up on it, and some of them they know about as much as we know. We know it because we have been to the webinar training sessions. A lot of it is just trail and error and then we try to teach each other (Natalie Moore, Interview 1).

The IT department plays a vital role in helping to maintain systems and to trouble shoot problems that may arise. The nurse educator reported that she and her colleagues have become experts in their own right by working with lecture capture systems. They have learned by doing and by fixing problems as they occur. They have become resources for each other and they have the responsibility of teaching new instructors who are hired how to use the lecture capture system.

One instructor reported that the nurses had become proficient in managing the problems they encountered with this technology. The participant shared that instructors helped each other to learn about lecture capture technology and they shared their recordings when needed. She recalled that their request to be assigned their own IT person in the nursing division had been denied. She stated,

> O God please help us. No! We have become our own IT people. We have said that we would like to have our own IT person in the building, but we don't…No, each one, teach one. Yep, and you learn by trial and error. We had an original guy that came in. Was he from the company? I don't remember. It's been so long. He did like a, you know, in-

service and that was it…(Magnolia Bell, Interview 1).

She further reported that her college does not routinely provide in-services on lecture capture technology. She recalled having an in-service several years ago, but none since that time. She said that it was left up to the nurse educators to stay abreast on what's new or what will be changing with their lecture capture system. She stated,

> Yes, we've had, a couple of times like the, I'm sure you all have it too, at the beginning of the semester maybe have somebody come in, a speaker or whatever. We had, probably then several years ago somebody did a break out session on lecture capture. Nobody's done it since then. The only emails that I have seen that is an upgrade for anything, is Blackboard, for Blackboard updates. That's it. Like, it's going to be down for such on such day, you know, whatever. We're like ok, whatever, you know. Good luck to us. But, no, it's not a formal ushering in of stuff. Not that kind of thing at all. Tegrity is kind of like, you get into it and start using it and you go like, that's different. It's left, pretty much up to us. It's not anybody going hey we need an in-service, which is what nursing is accustomed to. No, we don't get those for these purposes (Magnolia Bell, Interview 3).

This nurse educator reported that there is no protocol for keeping users of lecture captures technology up to date on changes within the system. Educators may see a notice in their course management system from time-to-time, but nothing formally is planned within the college.

What We're Doing

Lecture capture technology has been used in nursing courses throughout the 2-year curriculum. Included in these courses are Fundamentals, Health Assessment, Pharmacology, Medical-Surgical, Maternal-child and Pediatrics. Nurse educators reported using lecture capture to introduce students to course content, to provide instructions to students, and as a review of content covered in class. All of the participants reported using lecture capture in the theoretical component of their classes. There was only one participant who reported using lecture capture technology in the clinical portion of a course.

Some participants reported that they record from the classroom where entire proceedings are captured live as they are presented. Instructors who record live reported having no control over certain environmental aspects such as background noises and unexpected interruptions. One participant, Dannie, stated,

> I record lecture in class. I record during class time. I usually lecture for an hour and then they'll take a break. Then class sessions are usually two hours long on two different days. It usually, I'll lecture for an hour and then they'll have a break. Then I'll close that session and then I'll have another session the same day after the break, and then start again. When students go back in, there are two different sessions they'll have to listen to; it's not one altogether (Interview 1).

Usually, the entire class session is recorded except when paused for a scheduled break or when discussing things of a sensitive nature.

Participants also reported that they recorded from their desktops. This may have been by their own choosing or because they encountered problems in the classroom which did not permit them to record during the live session. Recordings done from the desktop allowed instructors to decide when and where they would record, thus allowing them to make "cleaner" versions of their recordings. Magnolia Bell said,

> The idea of it was we would capture the lecture in the classroom with the day class in order that the night class would get their lecture strictly online with the computer…we all started recording just as we were doing the daytime lecture. We all started doing it, just recording it from the podium during the day class lecture…Well, I began to record from the desktop rather than recording from the classroom, because we were getting feedback from the night class that people weren't repeating questions so they could hear it. They couldn't hear the responses within the classroom with the students because of the limitations of the microphone…I began to toy with recording it from the desktop. What I was able to do with that was record it from the desktop in it's general content kind of thing…The lectures were shorter because I didn't have classroom interruptions all the time and I didn't have to account for breaks (Interview 1).

This participant started experimenting with the idea of changing how she made her recordings after receiving complaints from students. As a result, she discovered advantages of recording

from the desktop. Desktop recordings tended to be shorter because things such as students asking questions or break times did not interrupt the instructor.

Some of the participants reported they can record live or from their desktop. They have the option to choose where they will record their lectures. The instructor may use prerecording to provide students with information as a review or as a preview in preparation for class. Natalie Moore shared the following:

> We can do it both ways, and that's the instructor's preference. We are supposed to record them all live for the students, but sometimes we will go in and prerecord. Now with some of my lectures, there are things I do like to prerecord. For example when I'm teaching cardiac, I will prerecord the anatomy and physiology of the cardiac system just to remind them about the blood flow through the heart, things like that…I do a lot of things like that just prerecorded…They're cleaner if you prerecord because there's no interruptions, you know it's quieter. The quality is better (Interview 1).

One thing that may impact the instructors selecting to record from the classroom verses the desktop, is the manner in which the course is set-up. Participants have reported using lecture capture in face-to face and hybrid courses. When used in hybrid courses, the lectures are usually made available prior to class for students to view. Lectures used in face-to-face courses may be available prior to class if prerecorded or after class if recorded live. Wonder Woman said,

> I do use Wimba for every lecture and for the whole lecture. I am able to pause for breaks…In Health Assessment I am…I am lecturing every single day in there. Then in my Fundamentals class, we do share that content. I have about half the lectures…those are six to seven hour lectures. We do it all live. There are on occasion where we have to do it prerecorded. We tried that one time because we wanted to go hybrid with Health Assessment. We prerecorded lecture, let the student watch/listen to it (Interview 1).

After lectures have been recorded, instructors have the option of editing the recordings prior to uploading them to the Internet or they may upload them to the Internet without any editing. Once the instructors are satisfied with the recording, they are uploaded to the Internet through the course management system where students can access them at their convenience.

Participants suggested that instructors "listen to recordings and make any changes before they are placed in a course for students and other members of the public to view."

Challenges

The implementation of lecture capture technology involved more than just pressing a button to record lecture. Participants reported they were confronted with many challenges. In many instances these challenges represented changing to a form of pedagogy that was undesired, unfamiliar, and stressful. Nurse educators were mandated to use this new technology, yet they received little if any training on how to use it. They were placed in situations where they had to rapidly adjust to changes. Some nurse educators had to re-evaluate their personal views and values. One participant stated she "didn't like people taping her lectures." She had to get use to taping her lectures and sharing these with the students. Another participant shared the following about challenges she faced with initiating lecture capture. Magnolia Bell said,

> Well at the beginning it was difficult just because: a) I was new at what I was doing period. We were in a lot of, *a lot of* transitions. We had students in two different buildings because our new building wasn't built yet. We were literally televising it between two buildings so there was just a lot of, *a lot of* new technology. But that's a hard curve anyhow. Then new content and the last thing I need is new technology to go on top of it. But once you use it for a semester, it's like; ok I got this, which is truly ok. But the hardest thing for me was not making the decision of what I wanted to do- as far as recording it from the desktop. I just had to spend a tremendous amount of time to get that done…(Interview 2).

Participants faced issues with managing their work schedules to make time to record lectures. This required some educators to take work home to complete. Other participants reported giving up their lunch breaks to squeeze in more time.

Another challenge for study participants was relying on computers that may not always work when you need them to work. A participant remarked, "that's fallible, its just technology." The lecture capture software was available through computers and systems connected to

computers. Study participants discovered that most students used computers with Internet connection to view lecture recordings. Some students depended on these items being available on college campuses because they didn't have access to them outside of school. Natalie Moore shared the following about hardship students experienced when they lack technology gadgets. She said,

> We do not require the students to purchase a laptop. However, it's more beneficial to them if they do have one. We have had students in the past who could not afford a laptop. We could see that was a hardship for them. We just use so much on our computer system they really need to be able to access Blackboard at home. Even if it's not to listen to the recordings they need to be able to access Blackboard and other things that's posted via the Internet system. However, we do have a computer lab on every campus so they do have access to computers. We have one campus…they have one grant in particular that brought laptops for every student. Not just nursing students, it can also be refrigeration, mechanical repair, there are a lot of different students that can go sign them out as well. They do not get to keep the computer, it not theirs, like to keep forever. They sign them out and then they have to return it…(Interview 1).

Nurse educators at this institution were able to identify a problem and join forces to resolve this issue by making resources available to students. This problem has not been totally resolved because some participants reported that students living in rural areas might not be able to "get good computer access." Things such as bad weather that impedes Internet signal reception may compound this problem.

Other nursing programs resolved a similar issue but used a different approach. They provided students with on-campus access through computer labs and Hi-speed Internet services. Even students who don't have access at home can use services provided at the college. Emily provided an example of this approach. She reported,

> We have Wi-Fi in our building and because we use Blackboard, we tell students because there's technology involved we have a library for you to use. So computer problems aren't an excuse. Nothing technology wise is an excuse because we have that for you here on campus particularly in the library and other computer labs. So there's access that way (Emily, Interview 1).

Students are expected to use computers and other resources readily available on college campuses. Some students have been able to transfer lecture capture recordings to their portable mobile devices that allow them to hear the recording without needing a computer or the Internet.

Nurse educators reported that student's experiences with technology could present challenges as well. Some students are more technologically advanced than others. Those who lack technology skills may experience frustrations as they learn to work with "computers, new systems and programs." In spite of this, nurse educators have had to determine the best way to reach all students. One educator shared that she has encountered students who have been unenthused about utilizing lecture capture because of their lack of knowledge or experience using this technology. She said,

> I like using it especially this culture that we have today. A lot of the students are technologically savvy. The problems that I do encounter though are the older students like me. They are not quite on the same level. So that is one hindrance. Sometimes there are some students who are not at the same computer savvy level (Natalie Moore, Interview 1).

All students are not using lecture capture technology but it is available. Some find it more useful than others depending on their learning style.

Some students have become dependent on lecture capture and have come to expect a recorded lecture. Educators reported that students become very vocal when lecture recordings are not available. In fact they have even "demanded" it. Nurse educators have expressed that this is a useful tool, but they are concerned about students' dependency on lecture capture. Magnolia Bell reported the following:

> Number one for me is I think students have developed an expectation that it's going to be there and if it's not there for some reason; maybe somebody didn't get it recorded, maybe the recording didn't work, maybe we opted to not post that because we rather cover it live. Whatever, they can get really ugly. There is this attitude of, you know, 'where is my

Tegrity that you're supposed to supply for me'. It tends to get really ugly…(Interview 2).

Not only were students dependent on lecture capture, but they have also demonstrated unpleasant attitudes towards instructors when the recordings are not available. This has caused some nurse educators to reconsider what they're doing and if they are using this tool in the proper manner.

This has led some nurse educators to question the type of nurses that are being produced. Nursing education has traditionally required students to interact with each other as well as with clients. With the availability of teaching tools such as lecture capture, some educators have questioned if nursing education has shifted to the place where face-to-face interaction is lost. This interaction has been an important part of students learning how to "behave as nurses." Students should be able to think critically and independently. At the same time, they need to interact and collaborate in order to achieve important aspects of their training.

Now that instructors have learned to use this technology, they have begun to make it fit their individual needs. They have been creative in their approach and have sought how they can assist students in becoming active leaning participants. Wonder Woman who said the following provided an example of this:

> My slides are not always complete as I show them in class either. Meaning I don't on their slides necessarily put the definitions. I put the word like so there is a little interaction so they have to pay attention. My idea is you're coming to class and you should be paying attention. I shouldn't be reading my slides to you. Nor do I feel like I need to be reading straight out of the book and watch them highlight. I'm different in that other faculty will give them every single thing and I don't feel that they're learning that way (Interview 1).

The appropriate use of lecture capture is needed. Nurse educators reported that they have changed lecture capture systems in an effort to overcome some of the challenges they have faced. They continue to explore ways to improve their delivery of course materials and lecture capture

technology is one of many tools they have employed.

Triumph

With the implementation of lecture capture, nurse educators have added something different to their teaching tradition. Many shared the successes they've encountered. They persist in an effort to support student learning. Although there was no perfect lecture capture system, nurse educators were convinced that because of their experiences, they knew what was needed to correct deficits and enhance what was available. They and their students have reaped the benefits of their efforts.

Educators reported changes since the implementation of lecture capture technology. These changes were visible in the classroom and have been used to bring about different approaches to instructional delivery. For instance, Natalie Moore provided an example of how she used this technology to assist student in covering the course content on fluid and electrolyte imbalances in her medical-surgical course. She stated,

> In adult health nursing, I teach the fluid and electrolyte imbalances. I pulled out all of the medications for that lecture and recorded that information. They have the assignment and they must listen at that prerecording and read about the medication prior to coming to class. When they get to class, I divide the class in half. I have a smaller class and it really wouldn't work if you had 100 students. I usually have around 40, a smaller group. I divide them 20 and 20. They've already heard the information. They watched it in the recording. They were suppose to read it and then we play "Family Feud," except its' "Diuretic Feud." So everything that they heard and talked about, I will say, what is the diuretic that can cause hypokalemia? Then they'll have to answer the question. It gets them ready for class. That example, that one gets them ready for class the next day. If they do not watch it, they will be lost in class. They will have no idea of what we're talking about… It's really fun and the students really get into it…I just want to present the information…I don't care about the game I just want them to know their diuretics (Interview 1).

This instructor reported that this learning activity was fun and students were actively involved in learning. The instructor didn't just make a recording she involved the students

in making learning active. The students played a role in their learning. All of the responsibility did not lie with the instructor.

Another nurse educator reported how her teaching style had been affected by the use of this technology. She reported that she had more opportunities for class activities since she implemented lecture capture technology. She could record her lecture ahead of class and make it available to students. She said,

> It has affected my teaching style I won't say that it changed it. It gave me more opportunity for class time activities so you can record things on Tegrity and have more time for active learning in class… we do a lot of simulation and case studies (Diane, Interview 1).

This instructor was able to use lecture capture technology to supplement class activities. She reported recording live classroom sessions as well. When she records live, she is careful to screen questions that her students ask. Her use of copyrighted materials may limit what she is able to show on her recordings.

Nurse educators reported that they have sometimes learned from mistakes they've made while utilizing lecture capture technology. Some have captured recordings and later discovered that the length of the recording caused problems with uploading to the Internet and printing materials from the recordings exhausted paper and other supplies. In addition, lengthy recordings were discovered to be non-conducive to students' learning. A participant stated that she had changed several things with her recordings after making these discoveries. Emily report the following:

> I was using someone else's slides for the lecture. It was my voice but it was someone else's slides. I didn't realize it was 139 slides…but there were that many slides. When the students when to print the slides at the library, the library assistants weren't very pleased that they were using all that ink and paper there. It was that aspect that, that's too much information for a student anyway. The students were getting flack because all of the supplies they were using to print it. The first issue that I learned about getting Tegrity

> into my course was the length. I think the longest one I had was between two and three hours, maybe two and a half hours. I had to upload it and if someone has slow Internet services it's going to take forever for that much data to download to their system and I've learned since to break them up. I call them part one and part two but there's never any part. I actually broke it down to an hour until recently I was reading, I think it was an article about flipping the classroom. They suggested 20 to 30 minute increments not to lose them (Interview 2).

She expressed concerns that her students were facing difficulties and she discovered ways to eliminate the difficulties and to hopefully improve their learning. She was willing to use a different approach to utilizing lecture capture technology that was founded in evidence-based practice. Nurse educators should be willing to change what they are doing and base changes on documented approaches to learning. Again, nurse educators need to determine which practices work best for them and their students.

One nurse educator reported drastically changing her classroom environment. She "flipped her class" and got her colleagues to get on board with this idea. This idea came about due to time constraints and the vast amount of course content that she needed to cover in her course. She was able to cover the required content and allow students to guide the direction of the class. Magnolia Bell said,

> There just wasn't enough time. So, I finally got that, began to flip the classroom, and then I got my other two team members on board; who were my team members at that time. It took a couple of years to really get them on board with using the lecture capture as their, as I call it, their " blah, blah, blah"; then being able to flip the classroom, and in doing that, we were able to double the time that they get in that content. We didn't have enough time in the classroom, but with the lecture capture and the classroom we effectively were giving three to four hours per disease, per system of alteration as opposed to the two hours that we were allotted; there really weren't two hours because of the breaks and all that kind of stuff. We just kept getting cut back and cut back. Another thing that I found I could do by doing that is I could let the class go where they wanted to go. I didn't have to stay on track because they had the "blah, blah, blah" as a backup available to them with their computer at home, or they could use computers on campus; either one. If they needed to spend more time on something, I wasn't pressured to say, "I've *got* to cover this stuff; *I've got to cover this stuff*". It took that pressure away and for, me makes each class unique. I'm able to do a lot more fun things. Like with antepartum, for example, my

> antepartum make take two to three hours to do. So, I will cover a quick overview with that because like I say, they've got the detailed lecture on their Tegrity. I bring in, usually I'll get one to two pregnant patients or pregnant students within the classroom, and we do an antepartum assessment on those students. We bring in the Doppler and make it very real world, just true to life. They get to do that kind of stuff. Everybody's been very creative and we've been creative in what we've done in the classroom. Rather than just sitting in the classroom, sitting on their desks, taking notes, you know. That's to me has just become miserable teaching. I much, much, much, prefer having the Tegrity…We do know that it works. We know that it works because we have statistics from the modules when we did it the old way and we have statistics of the modules from when we're doing it this way. I can tell you it's gotten maybe a little bit better with the test statistics, not hugely so, at least it hasn't gotten worse. It's not hurting them. (Interview 1).

This participant also reported that this sort of change required a significant amount of time. She had to record the lectures and to develop the class activities that included modifying the course examinations and build in an on-going case study as well. She noted that a team approach was used which helped this effort to be successful. The students were actively engaged in learning by participating in several activities that have replaced constant lectures from the instructor. This nurse educator provided evidence that lecture capture technology can be utilized to assist students in being successful in learning and applying course content.

Need for Pedagogical Discourse

Associate degree nursing programs are faced with the challenge of preparing nurse graduates who are ready to join the work force. They have had to use various methods to appeal to different types of learners. The behaviorist learning theory, which proposed that human behavior could be modified based on a response, has influenced nursing education (Billings & Halstead, 2009). Nursing curricula was designed for students to obtain specific objectives. This contrasted with the cognitive learning theory in which students are actively involved in constructing knowledge. The curricula design was based on promoting students to actively participate in their learning (Billings & Halstead, 2009).

In recent years proponents of the active learning style have made urgent appeals for others to adopt this approach (Michael, 2006). The focus of learning experiences shift from the instructor to the student. Students engaging in activities to facilitate learning replace the need for constant lectures. Students are expected to not just memorize facts, but to perform procedures that enable them to gain knowledge through interactions.

According to researchers, the goal of education is to prepare individuals for their future role in society (Bransford, Brown, & Cocking, 2000). Within this broad category, divisions inside educational institutions have specific objectives depending on the field of study. Nursing curriculum should create learning environments that produce outcomes ensuring long-term retention of material. Students must be able to transfer this knowledge from the classroom to their work settings in order to meet the health needs and to improve patient outcomes (The Institute of Medicine [IOM] Report, 2010).

Mancuso (2009) noted that the shortage in nursing personnel has had an impact on nursing education and has caused nurse educators to look at the manner in which their instructions are delivered. Lecture capture technology is an example of a form of technology that has been integrated into pedagogy and has altered the course of educational delivery at many two-year colleges. In an effort to keep up with the demands for alternatives to traditional educational methods, nurse educators have had to learn how to use this technology in their courses. This utilization has been met with mixed reception.

Nursing instructors indicated that they are willing to embrace technology and teaching strategies that will assist them in producing nurses who are life-long learners, who are ready to join the work force and who possess the skills needed to perform their roles as members of healthcare organizations. Educators have been given the task of meeting the needs of learners

(Michael, 2006). Since there is no single way to bring about change, instructors shared how they have taken advantage of the many options available to them as they sought to implement those that yielded the best results. The participant's account of those experiences was used to show how lecture capture technology has impacted their effort to transform students from untrained to trained professionals.

Summary

The information in this chapter centered on the themes that were unveiled as data was collected and analyze. The four themes helped to categorize the data and to give a description of the lived experiences of the participants. The themes also helped to provide an intense review of what had been spoke by the participants, what descriptions could be assigned to their speech, and what implications could be drawn from their statements. This information was summarized and the data can now be added to preexisting data regarding lecture capture technology and how it has been integrated in Associate Degree Nursing Programs in the State of Alabama.

CHAPTER 5

DISCUSSIONS, LIMITATIONS, AND RECOMMENDATIONS

This study was conducted to determine how nurse educators integrated lecture capture technology into Associative Degree Nursing Programs in Alabama. This chapter will discuss the findings as they pertain to the research questions and discuss limitations found within the study. It will also provide recommendations for future studies.

The study was conducted to explore and describe the experiences of nurse educators in the ACCS who integrated lecture capture technology into their courses. Educators shared their stories of what motivated them to implement this technology and problems and successes they encountered. A descriptive qualitative methodology was used to gather and analyze data. Six study participants were recruited and utilized as subject matter experts. The study generated four themes that included: 1). *Factors,* 2). *What We're Doing,* 3). *Challenges,* and 4). *Triumph.* A comparison was made to data generated during the study to data obtained in the literature review. Similarities and differences were noted.

Discussion of Significant Findings

Research Question 1: What was the experience of nurse educators in Associate Degree Nursing Programs in Alabama as they implemented lecture capture technology in their courses?

The experience of nurse educators in Associate Degree Nursing Programs in Alabama as they implemented lecture capture technology in their courses ranged from being a pleasant experience to being one that was painful, stressful, and undesirable.

The participants in this study indicated that they had implemented lecture capture in their

courses and their experiences varied. One Participant described her experience as being "a headache" and "a pain." She related that this decision was not one that she made on her own free will, but instead it had been made by others and passed on to her. She told of having to learn how to use lecture capture software by trial and error, and that sometimes she encountered difficulties with it not working properly. Other participants described their experiences with lecture capture technology not working properly as "bad and ugly," "challenging," "difficult," and "frustrating." These unpleasant experiences represented some of the many problems that each participant faced. Included among these were being unfamiliar with the technology and having to learn as it was implemented. Instructor's unfamiliarity with lecture capture software was cited in previous studies as a barrier to implementing lecture capture technology (Bull et al., 2007; Robson & Greensmith, 2010).

Participants shared that they received limited training in the form of in-services at the initial implementation of this technology and when they had changed from one company to another company. Some recalled having some type of manual they could reference in case they encountered problems. Other than this, participants often had to fend for themselves and learned as they went along. In studies conducted by Delaney et al. (2010), Copley (2007), and Brown and Green (2007), the need to train faculty in the use of lecture capture technology was listed as a potential barrier to the successful implementation of lecture capture technology. Delaney et al. (2010) concluded that instructor didn't need advance technology skills, but they could be trained with a few simple steps that would enable them to initiate lecture capture technology.

Study participants reported that their colleges did not have any formative rules or official meetings about how to use the technology. Some instructors met informally to share how they were using this technology and others found out what their colleagues were doing when they

viewed someone else's lecture recordings. Instructors cited that they were responsible for training new instructors how to use this technology. Many instructors also shared that IT support was available, but often it was limited because of the manner in which these services were shared among campuses and within departments. Instructors were the ones who had to problem-solve most issues that occurred.

On the other hand, when lecture capture technology worked properly, participants said it was "amazing," "nice," and "I do like it." This expressed that they were pleased with how the technology worked and they gave it an overall satisfactory rating. Instructors expressed satisfaction because the students seemed to be please with the technology. They also expressed that this technology assisted students in preparing for class or reviewing information presented in class. The utilization of podcast by faculty to provide information to students was noted in several studies (Guertin, 2010; McKinney & Page, 2008). These studies showed that students primarily used lecture capture to review materials covered in class.

The adoption of an innovation requires individuals to see the advantages of the new idea over what it replaces (Rogers, 2003). Nurse educators cited several relative advantages in using lecture capture technology which included: to provide students with lectures prior to class, to review information presented in class, or to review information in preparation for examinations. Their initial implementation of the technology was primarily done to assist students in learning course materials. They have continued using this technology as a way to assist students in being successful in their nursing programs.

Instructors concluded that this technology could be useful to students even though this meant they had to invest a lot of time learning how to use the technology, preparing class activities and prerecording lectures. One instructor said that due to the "vast amount of material

covered," the lecture capture recordings provided her students an opportunity to "hear the information again." Other advantages reported by study participants included: having access to information covered in class in case a student needs to be absent; instructors could cover information outside of the allotted class time or in case of an instructor's absence; provide students with information prior to class; assist students with their note taking; provide students an opportunity to make their learning mobile; and to appeal to different learning types. Rogers (2003) stated that the greater the perceived relative advantage of an innovation, the greater the chances that the innovation will be adopted. The participants reported that this technology was being used primarily to supplement face-to-face class meetings. It was not used to replace class altogether. This was consistent with result reported in previous studies (Copley, 2007; Robson & Greensmith, 2010; Bull et al., 2007; O'Bannon et al., 2011). Some participants felt that lecture capture could one day replace class lectures altogether, but others disagreed with this conclusion. Participant reported that overall, the adoption of lecture capture technology had been a rewarding experience.

Supplementary Question 1: How did nurse educators in Associate Degree Nursing Programs in Alabama come to use lecture capture technology?

Nurse educators in Associate Degree Nursing Programs in the State of Alabama reported that they came to use lecture capture technology because it was mandate, because it was something they wanted to try or because of its convenience.

Rogers (2003) indicated that ideas are passed down through channels, over time and within a system. For some of the participants, the channels of communication involved administrators, committee members or colleagues who introduced the idea of using lecture

capture technology. After administrators made the decision, participants were expected to implement this technology. Some participants received help from colleagues who either informed them that the technology was available, or who demonstrated how they could use it to assist in the delivery of course materials. Participants shared that within some divisions, all instructors were using the technology. Others stated that although it was available college-wide, not all faculty had implemented its' use.

Some of the nurse educators were first introduced to lecture capture technology upon initial employment at their work places or whenever their institution decided to implement the technology. Most of the participants share that their implementation of this technology had been mandated. This directly contrasted to what Rogers (2003) proposed in the diffusion of innovation theory. He indicated that innovations are more likely to be adopted faster when they are individual or optional innovations rather than those involving administrative or joint decisions.

Many nurse educators continued to build upon their knowledge as they changed to different lecture capture systems or as they tried to implement tools that were available with the system they had been using. They agreed with observations made by Ehlers (2010), in which he noted that this technology continues to evolve. Several participants had used it for many years. Nurse educators also indicated that they were able to keep up with the latest trends in lecture capture technology through attending in-services, webinars or reviewing research articles. Some institutions developed IT committees that solicited assistance from nursing and other instructors as they evaluated the system they were using, or made decisions about changing to another system. This was usually done as the contract was about to expire with the current software provider. Study participants reported that contracts were renewed or not renewed based on the product evaluation rating or because of the product's cost.

Rogers (2003) used the term compatibility to describe the degree to which an innovation agrees with the adopter's needs, existing values, and past experiences. Participants reported that some lecture capture systems were easier to use than others. Some used systems that allowed them to insert things such as movie clips or cartoons into their lectures. After switching from one system to another one, they discovered that the new system didn't allow them this type of flexibility. In addition, switching systems meant that all previous recorded lectures were lost. The instructors reported they experienced additional stress during this time because they had to find time to rerecord lectures.

For most participants, finding time to learn the lecture capture system and record lectures were major concerns. After receiving an initial in-service or having good IT support, the nurse educators still needed time to perfect their skills. This sometimes meant they worked through lunch breaks, worked extra hours, or took work home to complete. Brown and Green (2007), Chandra (2011), and Robson and Greensmith (2010), have similarly reported that time was needed for instructors to implemented lecture capture technology and could prevent some instructors from implementing this tool. They suggested that widespread IT support is needed if an increase in faculty use of lecture capture is to be achieved. Faculty can't do this alone.

Rogers (2003) stated that complexity is the degree to which an innovation can be understood. An innovation might have different levels of complexity. Adoption is likely to occur quicker if the innovation is easy to understand. It was reported by participants that most colleges had improved their infrastructures in anticipation of delivering courses via the Internet. Most campuses had Wi-Fi capacity. Instructors reported they had encountered students who may have had limited access to computers or the Internet at their homes. This was sometimes hard for students living in rural areas. One college allowed students who did not have computers in their

homes to borrow computers. This was being funded through a grant as a way to assist students in meeting their educational needs.

One participant reported that she began using lecture capture after being told that it was essential software. She didn't always like people recording her lectures so she had to get use to this idea. She was able to resolve this after she realized that her voice was being recorded along with whatever information she had on her computer screen. It was her voice and her slides. This was a minor adjustment that she had to make. She had used some of the features included in the lecture capture software, but she hadn't been able to utilize some special features due to time restraints. This was very agonizing for her and she realized that she would have to wait until another semester to try these additional features.

Another participant reported that she had received verbal instructions from a colleague on how to use the lecture capture system at her school. When she used it for the first time, she encountered problems that she was able to resolve with the help of an IT person. She initially recorded a lecture because of convenience, but since that time she has recorded more lectures. She discovered that the length of her recordings was too long. Some were two to three hours in length, which she learned to break into two sessions. She planned to decrease her recording time to 20-30 minute sessions. McCombs and Liu (2007) and Ormond (2007) recommended using short segments for effective delivery of course content in their study as well.

Bull et al. (2007) cited limitations for students and instructors utilizing podcasts that were similar to those discovered in this study. These included: 1) lack of students' and instructors' access to needed equipment, 2) the need for on-going training and assistance from IT for students and instructors, and 3) the need for continuous support from administration in the allocation of resources. These study participants provided examples of how nurse educators can be

instrumental in eliminating limitations met by those seeking to use lecture capture in their classrooms.

Supplementary Question 2: In what courses has lecture capture technology work best for nurse educators in Associate Degree Nursing Programs in Alabama?

The study participants reported using lecture capture technology in several courses throughout the ADN curriculum. The courses included those in the first block, which consisted of the Fundamentals Of Nursing, Health Assessment, and Pharmacology. In addition, courses in the second block including Adult Health and Maternal-Child Nursing used this technology. Lastly, the third block courses including, Medical- Surgical I, II, and III and Adult Child Nursing have utilized lecture capture technology as well. One instructor reported that she did not use a lot of lectures in the Fundamentals of Nursing because there are "a lot of skills" that have to be taught in that course.

None of the instructors had experience using lecture capture in any of their clinical courses to deliver course instructions. One instructor reported using the technology to facilitate part of a clinical orientation. Another instructor shared that her institution had purchased a lecture capture system that was supposed to allow the math instructors to be able to write on the screen and this was a major selling point for this system. However, after the system was purchased, they discovered a lot of limitations to the system and although it worked well for the math and pharmacology instructors, it did not work well for the other instructors.

The study participants indicated that they learned more about the lecture capture product through repetitive use, by learning from colleagues, and by reading product manuals or other published reports. One participant suggested that prior to adopting the product, a thorough

research should be conducted to learn about the product. Another participant shared that after they had implement lecture capture they discovered "limitations" with the technology.

Trialability is the amount of experimentation an innovation goes through as it is being adopted (Rogers, 2003). The innovation may be experimented on a partial basis. The more an innovation is tried, the greater the chance that it will be adopted. The study participants reported that they were sometimes granted the opportunity to try a product before it was adopted. This opportunity was often extended to members of the nursing faculty since they were one of the main departments who used lecture capture technology. One participant stated that instructors signed up and were able to review programs from several different companies. They provided reviews on each product and they went with the reviews in selecting the lecture capture system they adopted.

Another study participant reported that she recorded lectures and put these in her "personal courses" first. This provided her an opportunity to listen to the recording and correct any errors before they were uploaded for students and members of the community to view. Moreover, one participant stated she listened to her recording and discovered that it sounded like she was "just reading along." She failed to put her enthusiasm into it. She planned to rerecord it and include her own materials as well as change her tone during the recording. Chandra (2011) noted in her study that faculty is not perfect. There maybe incidents in which recordings contain misspoken words but this should not hinder faculty from using lecture capture technology. Chandra (2011) stated that she considered this to be an "acceptable risk."

Some participants reported trying to prerecord lecture so that a course could be taught in the hybrid format. Lectures were prerecorded and students would come to campus for demonstrations, practice assessments, and other components of the course. This was very

challenging for the instructors to record their lectures ahead of time. They reported having to spend a lot of time to get this done. This led one instructor to begin "flipping" her class. She recorded lectures at her desktop and noticed they were "cleaner" because she didn't have any interruptions. She applied this concept of flipping to other courses and she was able to provide instructions for topics that she didn't have time to cover in class.

Nurse educators reported that some lecture capture systems did not work well in their nursing courses because they limited what the instructors could add to their presentations and they were inundated with problems. Lecture capture systems that did not fit in well with all nursing courses were not recommended for continual use.

Supplementary Question 3: What factors influenced which lecture capture technology was selected by nurse educators in Associate Degree Nursing Programs in Alabama?

Factors that influenced which lecture capture system was selected by nurse educators in Associate Degree Nursing Programs in Alabama included: administrative decisions, recommendations from IT committees, prior experience with the lecture capture system, costs, how well the system fit into existing infrastructures, and ease of use.

Participants described factors that worked as forces to compel them to adopt this technology. One participant stated: "…It's not something that I just opted to do…" This technology was being used at this college by all instructors so when the participant was hired, she was informed that she would be expected to use this technology as well. Another participant indicated that they were forced to adopt this technology because of a change in curricula. She said they were "forced into it because of the night program." A participant stated that she used lecture capture initially for "convenience." This instructor needed to miss a class and she was

able to provide instructions to her students during her absence. This proved to be convenient for her schedule because she was able to provide the students with what they needed and she was able to attend her scheduled event.

Several of the study participants reported that cost was a factor in deciding which lecture capture system was selected. Some colleges changed lecture capture system when the contract expired as a cost saving measure. The cost of creating lecture recording can be relative small, but the cost of storing and distributing can add a large burden to campus resources (Chandra, 2011). Some colleges have their own server and others have opted to use video sharing websites such as YouTube to assist with cost management.

As previously stated, Rogers (2003) felt that innovations that were personal or optional had a better chance of being adopted than those that were organizationally or collectively decided. Most participants reported that decisions to use lecture capture technology had been made at the organizational level. Instructors were using the technology in different ways. Some instructors were recording from their desktops and would pause the recording during breaks, if this feature were available. If not, they would record the entire class sessions. This resulted in long recording that sometimes would be broken into two or more sessions. Other participants reported that they prerecorded lectures in their offices which resulted in shorter, cleaner recordings because they did not experience any interruptions.

Some participant reported that the decision to record from the classroom or the desktop was made at their discretion. This contrasted with studies reported earlier. In a study conducted by McCombs and Liu (2007), lecture was captured live during content delivery and as content preview. The researchers reported that instructors who used the recording as previews were able to use more class time for discussions. A few participants reported that they presented the same

lecture in class that they prerecorded in their offices. Other used class time for more active learning activities. In addition, results from a study conducted by Deal (2007) indicated that recording lectures in their entirety is not useful for long-term learning, but is useful for note taking. Most of the nurse educators reported that students used their lecture recordings to assist with note taking among other things.

Regardless of the catalyst, nurse educators were catapulted into this arena where they had to adapt to many new challenges. They have had to decide how this tool would be used in their classes. Some are still trying to figure out the best way to utilize this technology. Nurse educators indicated that they had changed from one product to a similar product because of the evaluation process. For some, the decision was based on problems encountered and the desire to switch to a product that would work more efficiently.

Supplementary Question 4: How has lecture capture technology changed what nurse educators in Associate Degree Nursing Programs in Alabama do in their classrooms?

The implementation of lecture has caused some nurse educators to change the manner in which they deliver course content and what they do in their classrooms. Others participants reported that no change has occurred in their teaching styles since they implemented lecture capture technology.

One nurse educator stated that she could let her class "go where they wanted to go." She wasn't pressure to say, "I've got to cover this stuff." By prerecording her lectures, the class time was used for students to create concept maps. In addition, students were engaged in conversations, collaborations, and learning without even realizing it. This participant reported that for her, class was no longer "miserable." She enjoyed going to class because she was not

doing the same old things. She and her colleagues were able to be very creative. McKinney and Page (2008), McCombs and Liu (2007), and McCombs, Liu, Crowe, Houk, and Higginbotham (2007), also reported that instructors should integrate learning activities in their classes to supplement lecture capture recordings to provide the best learning experiences for students.

This participant also told of having students conduct assessments on "real" patients who came to her class. This exercise allowed students to perform assessments and to talk about things they observed. She stated this was better than showing "a bunch of slides." She was able to increase the amount of time that was spent on the content. In fact, in Pediatrics, she was able to double the content. Changes were also reported in student's test statistics. This participant reported that the test statistics had gotten better, not hugely, but they hadn't gotten any worse. She had completely flipped her class over a period of three to four years. This was possible because she was able to get her colleagues to get on board with this idea and because they did a lot of work to get things accomplished.

Another participant reported that lecture capture did not change her teaching style. There were times when her lessons didn't incorporate lecture capture. For instance, when she used posters and conducted group discussions, she couldn't include these activities in the recordings. She had to pause the recordings during this time. This participant also stated she used lecture capture technology in different ways. She prerecorded some lectures to get students "ready for class." Students must view these prior to class or they won't be ready to participate in class activities. The recordings were associated with games they played in class to test students on what they've learned.

One participant stated that lecture capture technology had not changed her teaching style but it had affected her teaching style. It provided her with more time for active learning activities

in class such as doing case studies and simulations.

A participant reported that she had not had to change anything in her course since she implemented lecture capture technology. She stated that she likes to show a lot of examples because she is a visual person. The PowerPoint slides allow students to see all of the pictures and visual stuff she likes to use. In addition she uses reading assignments, questionnaires, case studies, simulation lab exercises and YouTube videos to enhance her teaching style.

Another participant stated that she didn't know if lecture capture had caused her to change her teaching style. She felt she used lecture capture technology in a manner that helps her to be more effective. One way she does this is by providing students copies of her PowerPoint that are incomplete. She feels this help them to learn by requiring them to look up some information on their own. She wants her students to pay attention in class. She doesn't read her slides to students or read to them out of the book while they highlight the pages.

Lonn and Teasley (2007) suggested that a possible explanation why podcasts have not been thought to improve instructors' teaching might be because instructors were merely recording their usual lectures and were not changing any class activities. Instructors did not find ways for podcasts to alter their method of teaching.

One participant stated lecture capture technology allows her to be more effective as a teacher because she has control of the environment when she records her lectures. She can say what she needs to say without any interruptions. She has made some changes in the way she uses this technology. She changed the length of her recordings from two to three hours each to one-hour recordings. She developed a lecture guide so that students can fill-in-the blanks as they listen to the lectures. When she uploads her lectures, she includes a link to the lecture guide. She has plans to decrease the length of her recordings to 20-30 minute segments as suggested in

current literature reviews she examined.

Rogers (2003) stated that observability is the extent that an innovation is visible to others. This characteristic fosters communication among group members that will cause positive or negative responses. The study participants indicated they have utilized lecture capture and their recordings are shared with students, colleagues, and others. They made some adjustments in their lecture recording because of students' ideas or suggestions. Some nurse educators discovered how other departments were utilizing this technology and they adjusted their routines based on information received from their colleagues. They have also made changes because they switched lecture capture recording systems.

The Innovation-Decision Process

Rogers (2003) noted that the first step in the adoption process involved knowledge, where information about the idea is discovered. All participants indicated they had some knowledge about lecture capture although it may have been a primitive form of the technology. This knowledge had been gained over time through various experiences. This phase correlates with Lewin's unfreezing phase in which change agents gain an awareness of the need for change (Schein, 1999).

The adoption of innovation process includes persuasion (Rogers, 2003). Persuasion occurs when the person forms a favorable or unfavorable attitude toward the innovation through interacting with others. This stage is centered more on feelings. The individual's opinion and beliefs are influenced by collaboration with peers. Some study participants related that they were influenced by peers to try the lecture capture system. The participants experienced an unfreezing of their behavior that began with the decision to initiate lecture capture technology at their colleges.

During the decision stage (Rogers, 2003), a drive is launched to seek additional information about an innovation. After obtaining additional information, a decision is made to adopt or reject the innovation. For most of the nurse educators in this study, a decision to implement lecture capture technology was made by others, yet each nurse educators decided to use lecture capture in their courses. Additional information and knowledge was obtained through continual usage of lecture capture systems.

Rogers (2003) concluded that during the implementation stage, reinvention might occur as the product is tried. In this stage the individual regularly uses the innovation and seeks to obtain more information about the product. Some participants reported that when lecture capture was implemented, it caused them to change what they did in their classrooms. Some participants said they found new ways to utilize it. They expressed that they were able to identify needs as changes were implemented. They made changes and were able to better utilize lecture capture technology. According to Lewin, moving enabled the educators to identify problems, solve problems, develop plans and test the lecture capture system (Schein, 1999).

Confirmation is the last stage identified by Rogers (2003) in the adoption process. During this stage, the innovation can be evaluated and rejected by users. All of the participants reported that although they had encountered many challenges with lecture capture technology, they continue to use it because of the benefits to students and to themselves. Some stated that the students had come to depend upon the recorded lectures being available for them to use and they sometimes became angry when it was not available. Lewin noted that in this refreezing phase behavior can be stabilized towards change or it can be return to the formal stage if not supported by management (Schein, 1999).

The diffusion of innovation theory as described by Rogers (2003) lists five categories of

adopters. Innovators make up the minority group who are risk takers with practical wisdom. They are the first to adopt an innovation and are willing to try new ideas. The researcher characterized Magnolia Bell as being an innovator in this study. This participant described ways in which she and her colleagues were able to use lecture capture to add additional instructional time for their students. They encouraged their students to take an active role in learning by coming to class and to participate in activities. They lifted limits and allowed students to move through content materials at their own pace. This could be accomplished because the lectures were prerecorded and class time was used to reinforce learning and to clear up misconceptions.

The early adopters are the next group to become innovative. They are leaders and role models who provide advice to others about the innovation (Rogers, 2003). The researcher identified three study participants as early adopters. They included Diane, Natalie Moore, and Emily. These participants influenced others to adopt the innovation with their views and assessments. They played key roles within their social networks and were sought out among colleagues who valued their input. Their attitude about the innovation played an important part in the adoption process. Their adoption of the innovation reduced doubt among group members.

Rogers (2003) claimed that the next group, early majority, adopts an innovation prior to the other half of their peers' adoption. Their adoption is thoughtful. The researcher identified Dannie and Wonder Woman as being members of the early majority group. They adopted the technology but at a rate that was slower than the early adopters. They expressed some hesitancy about the integration of lecture capture technology and it's impact on their teaching. Their approach to implementing lecture capture was based on being well informed and using careful consideration in their selection of lecture capture systems.

The researcher did not classify any participant as being a late majority or laggard.

The diffusion of innovation theory and the change theory provide ways to understand and recognize how an innovation passes through an organization. It is important to recognize what is needed for changes to occur and to develop policies and practices to assist others as they proceed through the adoption process. The nurse educators in this study expressed a need for support with the implementation and utilization of lecture capture software. The findings from this research study generate the need for discussion and collaboration among nurse educators who use this technology in their classrooms. This study also indicated a need to document the pedagogical benefits of this technology. One way in which this can be achieved is by monitoring the effects on student achievements. In addition, assessment of instructor's use and development of this technology may provide additional information about its effects on teaching and instructional delivery.

Implications

This study has implications for nurse educators who are seeking to incorporate lecture capture in their classrooms. The participants in this study indicated that lecture capture is a tool that can assist instructors and students in meeting learning needs. They indicated that there is more than one way to utilize this technology and that each nurse educator should decide which manner best fits their teaching style. In addition, the participants have implied that lecture capture technology alone is not enough, but that this should be supplemented with other active learning activities. Furthermore, the participants suggested that faculty who are seeking to implement this technology perform a through search of what systems are available as well as ensure that they know how to operate the system selected.

This study has implication for nurse educators who are utilizing lecture capture technology. Nurse educators have implicated that there needs to be conversation among users of

this technology. Many educators have failed to share what they have learned as they implemented this technology tool. There has been very limited dialogue within departments and across disciplines. There are implications that educators can learn from each other's experiences with lecture capture technology and promote the use of this technology by sharing knowledge gained with colleagues.

This study has implications for nurse educators working in institutions of higher learning. Nurse educators should work collaboratively to determine the appropriate use of this technology in their courses and within their departments. The study participants expressed the need for ongoing training and IT support. They suggested that by simplifying the steps needed to operate lecture capture systems, instructors might be more inclined to adopt this technology. There are implications that instructors need periodic educational updates on lecture capture systems. Nursing faculty should consider peer mentoring for instructors who are not familiar with this technology.

Limitations

This research study was conducted with nurse educators who were employed by the ACCS. Despite efforts to ensure the possibility of capturing differences among sampling, the study participants were homogeneous in regards to race and gender. The results from members of other races and genders may differ from those noted in this study.

Recommendations for Future Research

This study identified barriers that exist with the implementation of lecture capture technology. Future studies may explore options to overcome these barriers. Moreover, it has been suggested that lecture recordings be limited to 20-30 minute intervals. A study to compare

length of lecture capture recordings to the impact of student's utilization is also recommended. Another suggestion for future research is to examine how the flipped classroom model has impacted the use of lecture in nursing education.

Conclusions

The purpose of this study was to describe how nurse educators have integrated lecture capture technology in Associative Degree Nursing Programs in the State of Alabama. This study utilized the experiences of nurse educators who had used this type of technology in their classrooms. These experiences were shared in hope that they will help others as they seek to deliver course instructions in an efficient manner to assist students in achieving their educational goals.

Nurse educators indicated that they have encountered challenges during the implementation of this technology; however, they felt that the benefits were greater than the challenges they faced. The educational environment continues to undergo change. Some changes occur at a faster rate than others. Technology is one area in which change is continually occurring. Educators have expressed a willingness to embrace change and to offer students tools that may assist them in accomplishing their goals. Lecture capture technology is one such tool and its use has generated different meaningful experiences for nurse educators.

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APPENDIX A

INITIAL LETTER OF INQUIRY TO DEANS/DIRECTORS OF NURSING PROGRAMS

Dear Dean or Director of Nursing:

I am a doctoral candidate in the Instructional Leadership, Nurse Educator Program at the University of Alabama completing my dissertation entitled "The Integration of Lecture Capture Technology In Associate Degree Nursing Programs in Alabama." I am conducting this study under the direction of Dr. Susan J. Appel who is a professor in the Capstone College of Nursing at the University of Alabama in Tuscaloosa.

I am requesting that nurse educators from your institution, who have experienced implementing lecture capture technology in their nursing courses, participate in a research study, which will involve being interviewed about the experience(s). I would appreciate your participation, which will involve informing the nurse educators from your institution about the study and providing my contact information to those who express an interest in participating in the study. The time expenditure required for participation could range from 1 to 3 hours.

I have included an informed consent form which explains the study, what is being asked of the participants and why and that participation is voluntary. I have included an abstract of the study for your review as well. I have also explained that this study is being used for my dissertation and may be published; however, participants' identity will be confidential.

Those interested in participation may contact me either by e-mail at jcsmith3@crimson.ua.edu or cell telephone number at (251) 709-2810. If you have any questions concerning this study, please contact me or you may contact my academic advisor, Dr. Susan Appel at (205) 348-1026 or email at sappel@ua.edu.
Thank you in advance for your consideration and assistance.

Sincerely,

Jacqueline C. Smith, EdD(c), MSN, RN Doctoral Candidate, Instructional Leadership, Nurse Educator Program

APPENDIX B

DEANS/DIRECTORS FOLLOW-UP LETTER

Dear Dean or Director of Nursing:

This correspondence is written as a follow-up to a letter I sent on last week requesting that nurse educators from your institution, who have experienced implementing lecture capture technology in their classes, participate in a research study nursing education. I requested your participation, which would involve informing the nurse educators from your institution about the study and providing my contact information to those who express an interest in participating in the study.

The purpose of this study is to examine how lecture capture technology is being utilized in the nursing curriculum at 2-year colleges in the State of Alabama. This phenomenological qualitative study will seek to understand why lecture capture was used in the classroom and what happened as a result of this tool being implemented. It will focus on the lived experience of nurse educators and will seek to understand the significance of what they encountered during the implementation of this technology.

I am writing to encourage participation in this study and ask if there are any questions or concerns that I can answer for you or the nurse educators at your institution. Questions or concerns or nurse educators who are interested in participation in this study can contact me either by e-mail at jcsmith3@crimson.ua.edu or by cell telephone number at (251) 709-2810. Questions concerning this study can also be addressed to my academic advisor, Dr. Susan J. Appel (205) 348-1026 or e-mail at sappel@ua.edu.

Thank you in advance for your consideration and assistance.

Sincerely,

Jacqueline C. Smith, EdD(c), MSN, RN Doctoral Candidate, Instructional Leadership, Nurse Educator Program

APPENDIX C

STUDY PARTICIPANT INCLUSION QUESTIONS

Questions For Study Inclusion

1. Have you used lecture capture technology in your course(s)?
2. What type of lecture capture technology have you used?
3. Will you be willing to participate in a research study involving you sharing your experience with implementing lecture capture technology in your course(s)?

APPENDIX D

DEMOGRAPHICS QUESTIONNAIRE

Demographics Questionnaire

1. Age
   a. 25-35
   b. 36-45
   c. 46-55
   d. 56-65
   e. Over 65

2. Number of years teaching
   a. 0-5
   b. 6-10
   c. 11-15
   d. 16-20
   e. Over 20

3. Gender
   a. Female
   b. Male
   c. Transgender

4. Race/Ethnicity
   a. African American
   b. Caucasian
   c. Hispanic
   d. Indian
   e. Other (specify) _____

5. Highest degree obtained
   a. Masters
   b. Doctoral
   c. Bachelors
   d. Post doctoral

6. Position held at institution
   a. Full time
   b. Part time

7. Location of Institution with the State of Alabama
   a. North East
   b. North West
   c. Central
   d. South East
   e. South West

8. Technology Proficiency
    a. Very Proficient
    b. Somewhat
    c. Limited
    d. None

9. Type of lecture capture technology used
    a. Tegrity
    b. Camtasia
    c. Mediasite
    d. Panopto
    e. Other (specify) _____

10. Nursing course (s) in which you integrated lecture capture technology
    a. Medical-surgical
    b. Pediatrics
    c. Maternal-child
    d. Fundamentals
    e. Pharmacology
    f. Role transition
    g. Health assessment
    h. Other (specify)_____

11. Type of course format in which lecture capture was integrated
    a. Online
    b. Face-to-Face
    c. Hybrid
    d. Blended

12. How long has lecture capture technology been used in your courses?
    a. 1-3 semesters
    b. 4-6 semesters
    c. 7-9 semesters
    d. 10 or more semesters

13. Length of lecture capture recordings
    a. 10 minutes or less
    b. 11- 20 minutes
    c. 21 -30 minutes
    d. More than 30 minutes

APPENDIX E

INFORMED CONSENT

The University of Alabama

Capstone College of Nursing

Box 870358

Tuscaloosa, AL 35487-0358

Dear nursing faculty member, you are being asked to participate in a research study entitled "The Integration of Lecture Capture Technology In Associate Degree Nursing Programs In Alabama." The study is being conducted by Jacqueline C. Smith, a graduate student at the University of Alabama, who is a doctoral candidate enrolled in the Instructional Leadership for Nurse Educators Program. Dr. Susan J. Appel who is a professor in the Capstone College of Nursing at the University of Alabama, Tuscaloosa, is supervising the research. The study is part of Jacqueline's doctoral dissertation.

The purpose of the study is to examine how lecture capture technology is being utilized in the nursing curriculum at 2-year colleges in the State of Alabama. As a study participant, you will be asked to complete a survey and 3 interviews with the researcher at a mutually agreed upon time and location. The interviews will be recorded using a digital voice recorder. You will be provided a copy of the transcription to review for accuracy.

Your participation is voluntary and you may withdraw from the study at any time. There is no risk or direct benefit to the faculty member. A copy of the study will be provided to each participating school.

Your name will not be used in any publications. Your privacy will be protected. The interviews will be locked-up and kept for a period of time, after which they will be destroyed.

If you have any further question you may contact the following individual:

Dr. Susan Appel

sappel@ua.edu

205.348.1026

I have read this consent form and have been allowed an opportunity to ask questions. I voluntarily agree to participate in this study.

_____

Signature of Research Participant Date

Audio Taping Consent

As mentioned above, each qualitative interview will be audio recorded for research purposes to learn about student incivility experienced by nurse educators. The tapes will be stored in a locked file cabinet in a locked room and available to the research staff. The tapes will be destroyed five years after completion of the study.

I understand that part of my participation in this research study will be audiotaped and I give my permission to the research team to record the interview.

___**Yes**, my participation in this study can be audiotaped. ___**No**, I do not want my participation to be audiotaped.

APPENDIX F

FORMAT TO GUIDE INTERVIEWS

Format to Guide Qualitative Interview

1. Can you tell me about your experience with Lecture capture technology?

Context (10 minutes)

2. What is your course about?
3. About how many students do you have in each section?
4. Where is the course situated in their program? (required, optional, mostly freshman, mostly juniors, etc.?)

Usage (15 minutes)

5. Do you use lecture capture technology? Has it worked well? (or why do you not?
6. What persuaded you to use lecture capture technology (what would persuade you)?
7. How often do you use lecture capture technology? Why do you choose to use it?
8. Can you show me some of your lectures?

Satisfaction (15 minutes)

9. What do you think about lecture capture? Has it worked well? Why or why not?
10. What are the benefits from using lecture capture?
11. What have been the challenges from using lecture capture?
12. What would you like lecture capture to do if possible?

Efficiency (15)

13. Does lecture capture help you to be more efficient? How?
14. Have you been able to save time? If so, how?

Learning (30 minutes)

15. Do you feel that using lecture capture helps you to teach more effectively? In what ways? How do you use it?
16. Do you feel the lecture capture helps students learn more effectively? In what ways?
17. How do you think a tool like lecture capture could be used to improve learning in your subject area?
18. What has worked well? What hasn't worked well?

Interview protocol adapted from West, R.E., Waddoups, G., & Graham, C.H. (2007).

APPENDIX G

IRB APPROVAL

Office for Research

Institutional Review Board for the
Protection of Human Subjects

THE UNIVERSITY OF
ALABAMA
RESEARCH

October 28, 2013

Jacqueline Smith
Department of ELPTS
College of Education
Box 870302

Re: IRB#: 13-OR-323 "The Integration of Lecture Capture Technology in Associate Degree Nursing Programs in Alabama"

Dear Ms. Smith:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. You have also been granted the requested waiver of written documentation of informed consent. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Your application will expire on October 24, 2014. If your research will continue beyond this date, complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, complete the Modification of an Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, complete the appropriate portions of the IRB Request for Study Closure Form.

Please use reproductions of the IRB approved stamped consent forms to obtain consent from your participants.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

[redacted]

Stuart Usdan, PhD
Chair, Non-Medical Institutional Review Board

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