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College Instructors' Experiences Transitioning to Inverted Classroom Instruction

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Abstract

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Abstract

Lecture methods in higher education continue to be the most often used form of lesson delivery, although they seem to be less effective in promoting adult students' learning and engagement. Many higher education instructors have incorporated inverted classroom (IC) methods to increase student engagement and learning. The purpose of this qualitative interview study was to gain an understanding of college instructors' decision-making processes and experiences transitioning from lecture-based instruction to IC and the factors attributed to that transition. Knowles's andragogy theory, Kolb's experiential learning theory, and Rogers's diffusion of innovations provided the conceptual framework for the study. Eight college-level instructors from the Flipped Learning Community were interviewed twice to collect data, which were analyzed using first and second cycle coding. Themes included student focus, support, change agent, and need to dialogue. Results may provide administrators with information to promote instructors' transition from lecture-based methods to IC. Results also indicated that IC was an effective social change strategy for boosting student retention, student engagement, and instructor satisfaction.

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Dedication

The Lord is my strength and my song: He has given me victory (Psalm 118:14). This study is dedicated to my Lord and Savior Jesus Christ who deemed me victorious through my successes, frailties, and challenges, as they will be referenced when engaging in the work He has commissioned for me. The Lord has graciously given me the "victory" to finish my race.

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Chapter 1: Introduction to the Study

Enrollment for nontraditional higher education students over age 25 increased 35% from 2000 to 2012 (U.S. Department of Education, 2015). As more adult learners enroll in institutions of higher learning in the social media age, technology has become an important component in the educational process (Smith, 2012). Digital age technologies influence how these learners interact with and receive new information (Smith, 2012). A number of studies revealed that traditional college curriculum delivery of lecturing remains the predominant instructional approach with a slow momentum in adapting newer instructional approaches that appeal to and keep the attention of adult learners (Fulton, 2012; Ivala, Thiart, & Gachago, 2013; Ullman, 2013). The absence of innovative instructional methods in higher education can lead to a risk of not capturing the attention of adult learners and decreasing their program completion rates (Fulton, 2012; Ivala et al., 2013; Ullman, 2013).

An effective instructional method that encouraged active learning is the inverted classroom (IC) (Ivala et al., 2013). IC, also referred to as *flipped classroom* in this study, is an instructional method that provides the lecture component outside of the classroom using technological teaching tools such as audio/video formats, and includes homework and practice within the class time via interactive learning methods (Ivala et al., 2013). However, little is known about how IC has been adopted by instructors in higher education. Educators in P-12 found that IC increased student learning, led to increased graduation rates, and enhanced test scores when employed instead of the traditional lecture format (Fulton, 2012; Ullman, 2013). McCarthy and Anderson (2000) suggested

active learning techniques such as IC were more effective in constructivist learning than traditional structures that encouraged learners to passively absorb information and restate the information on exams. Ivala et al. (2013) showed that the IC approach was transferrable to college-level learning, although instructors have been slow to adopt the approach. Although the IC instructional method promoted active learning and has been found to be transferable to college curricula, there has been a slow momentum in faculty adopting this innovative delivery style (Ivala et al., 2013). Understanding the decision-making process and experiences of instructors who adopted the IC approach may encourage other instructors to adopt IC.

This chapter includes the background, problem statement, purpose of the study, research question, conceptual framework, nature of the study, definitions, assumptions, scope and delimitations, limitations, significance, and summary.

Background

At many institutions of higher learning, traditional instructional methods such as the lecture technique are common (McCarthy & Anderson, 2000). Although the lecture method has been found to be less effective for teaching course material and to increase interest in subject matter (Bligh, 2000), lecturing methods continue to be the most often used form of lesson delivery. Research indicated one of the most difficult barriers for educators to overcome is the reluctance to incorporate technology into their professional practice (Johnson, Wisniewski, Kuhlemeyer, Isaacs, & Krzykowski, 2012). Govender (2015) discovered many faculty in higher education have been willing to try innovative instructional methods; however, most faculty continue to use traditional instructional

methods even with the development of innovative approaches to teaching. Research supported teaching approaches that were learner centered or activity based, such as IC, to best serve the needs of college learners (Govender, 2015); therefore, it is important to understand the decision-making processes and experiences of instructors who adopted the approach to increase adoption of IC methods. Testimonials of job satisfaction indicated that instructors become comfortable with teaching the IC method, and IC may stimulate self-confidence, quell feelings of inadequacy, in students and encourage faculty buy-in (Ivala et al., 2013; Knowles, 1984).

Problem Statement

Although IC is a preferred instructional method for many instructors because it engages learners and facilitates deeper learning (Fulton, 2012; Ullman, 2013), traditional lecturing continues to be the most often used instructional method in higher education (MacKeogh & Fox, 2009). Although P-12 educators have embraced IC and some higher education administrators' have extolled its successes (See & Conry, 2014), its implementation in higher education has been slow (Hemphill, 2013; Lane-Kelso, 2015). Researchers have not explored the decision-making processes and experiences that led faculty members to incorporate IC into their professional practice. The current study may provide better understanding of the process through which some instructors adopted IC, which may encourage others to adopt IC to enhance student engagement and learning in higher education.

Purpose of the Study

The purpose of this basic qualitative interview study was to explore the decision-making processes and experiences of faculty that led them to adopt IC. I intended to describe this process of adoption through responses from interviews with faculty who taught in higher education using the IC method.

Research Question

What were the decision-making processes and experiences that led higher education faculty to shift from using traditional teaching methods to adopting IC approaches?

Conceptual Framework

The conceptual framework for this study was based on the research in adult learning (Knowles, 1984), experiential learning (Kolb, 1984), and Rogers's diffusion of innovation (DOI) theory (Rogers, 2003). Andragogy, or adult learning theory, includes six core adult learning principles (Knowles, 1984): (a) learners need to assign relevancy and applicability to new information they receive; (b) learners have a self-directing concept of self that steers them to decision-making and setting tasks; (c) learners analyze and attach meaning to the breadth of their life experiences that assists in processing new knowledge; (d) learners' acquisition of knowledge is perceived as a stepping-stone to increasing their life potential and as a tool to effectively cope with real-life issues; (e)learners are life centered and view education as an instrument to increased self-competence; and (f) learners' motivation to learn is intrinsically based on their need to acquire information to problem solve or assist in enhancing their quality of life (Knowles,

1984). These principles provided a basis for understanding how higher education instructors might have processed and applied new knowledge and innovative methods.

A second theory used to understand the IC adoption process was experiential learning theory, the process in which knowledge is generated through transformation of experience (Kolb, 1984). According to experiential theory, the process of learning new knowledge is accomplished by combining knowledge taught with new experiences (Kolb, 1984). Kolb (1984) found that to enable the transference of new information, individuals must navigate through four stages of learning: (a) concrete experience, (b) reflective observation, (c) abstract conceptualization, and (d) active experimentation. This learning cycle involves an individual participating in a particular action that provokes thoughts or feelings of how to apply what was introduced to analogous or different conditions; the individual analyzes where there is a disconnect between encounters and interpretation, reflects on new ideas or conclusions about what was encountered or observed, and applies diverse behaviors and perceptions to new experiences (Kolb, 1984). Kolb's theory was used to understand the learning process that led higher education instructors to employ IC.

A third theory used to examine this study, diffusion of innovations (DOI), defined innovations as communicated through specified means over time and within a particular social system (Rogers, 2003). According to Rogers (2003), individuals demonstrate differing degrees of innovation adoption over time. The five categories of individual innovativeness include innovators, early adopters, early majority, late majority, and laggards. According to Rogers, strong relationships within a group have the propensity to

change an individual's opinion. Discovering how faculty nurtured interpersonal relations during the adoption process may contribute to understanding how instructors responded to the innovation adoption cycle and how higher education administrators could make IC more appealing to faculty members who have been traditionally slow to adopt.

Analyzing the process of IC adoption through the lens of andragogy theory (Knowles, 1984), experiential learning theory (Kolb, 1984), and diffusion of innovations theory (Rogers, 2003) provided knowledge and understanding of instructors' decision-making process. These theories were used as a basis for the interviewing protocol used to answer the research question about decision-making processes and experiences that led instructors to shift their teaching approach to IC. Knowles's (1984) theory provided an understanding of the process regarding how individuals chose nontraditional instructional methods. The process of combining life experiences, embracing the instructional method of IC, and incorporating IC into professional practice reflected an individual's cognitive processing patterns (Kolb, 1984). Rogers's (2003) innovation-decision process, attributes of innovators, and categories of adapters provided a basis for developing the interview protocol and analyzing the instructors' decision-making experiences. Extensive explanations of these theories are provided in Chapter 2.

Nature of the Study

I used a basic qualitative approach described by Merriam and Tisdell (2016). I chose this approach to explore the decision-making processes and experiences of higher education faculty who adopted IC in their classrooms. Andragogy theory (Knowles, 1984), experiential theory (Kolb, 1984), and diffusion of innovations (Rogers, 2003)

provided the basis for analysis of experiences of higher education instructors obtained through a modification of Seidman's (2013) three-stage phenomenological interview approach. Participant selection included eight to 10 individuals who were full- or part-time faculty teaching in a collegiate environment where they have adopted IC. The interview process included open-ended questions. With the use of a basic qualitative study, understanding of participants' experiences did not include cause and effect or numbers but rather "uncovering the meaning of a phenomenon for those involved" (Merriam & Tisdell, 2016, p. 5). The data retrieved from interviews were analyzed through the creation of themes and coding procedures as described by Miles, Huberman, and Saldana (2014).

Operational Definitions

Inverted classroom: An instructional method also referred to as a flipped classroom that provides the lecture component outside of the classroom using technological teaching tools such as audio/video formats, and includes homework and practice within the class time via interactive learning methods (Ivala et al., 2013).

Lecture-based classroom: An instructional method in which the instructor is considered the provider of information to be disseminated to learners (Damodharan & Rengarajan, 2007).

Assumptions

I assumed that active members of a professional organization using IC would be available and willing to participate in this study. The second assumption was that the participants interviewed would answer authentically and thoroughly regarding their

decision-making processes and experiences in adopting and incorporating IC into their professional practice. The third assumption was that the participants would accurately identify themselves as higher education instructors who have adopted IC in their teaching practice for at least a year. Finally, I assumed that they would complete the interview process.

Scope and Delimitations

The scope of this study included faculty participating as part of a professional community of online higher education instructors whose primary focus is IC practice. The study focused exclusively on individuals' accounts of their IC adoption process. This study was delimited to higher education instructors who have experienced and adopted IC into their professional practice, and excluded those who were considered using it.

Limitations

The findings of this study were limited to the decision-making process and experience of higher education faculty who have adopted IC as a teaching approach, but did not address other innovative approaches. In addition, researcher bias may have influenced the manner in which I asked interview questions or in which participants perceived me asking questions. Lastly, telephone interviews limited observation of participants' body language and nonverbal communication.

Significance of the Study

I explored the lived experiences of higher education instructors who adopted the IC method. Research suggests one of the most difficult barriers for educators to overcome is the reluctance to incorporate technology into their professional practice (Johnson et al.,

2012). Johnson et al. suggested a request to design or teach online courses produced a sense of angst among educators related to technology anxiety. Exploring the process of how some faculty shifted their teaching approach may be helpful for teachers who are anxious regarding incorporating technology in the classroom. Through an improved understanding of how instructors could be comfortable using the IC method, more higher education faculty may be encouraged to embrace this approach (Ivala et al., 2013; Knowles, 1984).

Summary

Early research chronicling IC practice focused on P-12 levels rather than higher education. This study was designed to gain an understanding of the cognitive processes that effect IC adoption among higher education instructors. Interview data were analyzed through the framework of andragogy (Knowles, 1984), experiential learning (Kolb, 1984), and diffusion of innovations (Rogers, 2003). Chapter 2 includes a discussion of the conceptual framework and a review of literature related to the study topic. Chapter 3 provides a description of the research design, selection of participants, procedures, and how data were collected and analyzed. Chapter 4 provides research results and emerging themes. A discussion of results, conclusions, and recommendations is provided in Chapter 5.

Chapter 2: Literature Review

Institutions of higher learning have reported increasing enrollment among adult learners (National Center for Educational Statistics, 2012). According to this report, the number of nontraditional students (25 and older) rose 44%. The college population includes more adult students who grew up in the technological age, and they have adopted digital age technologies that influence how they interact with people and receive new information (Smith, 2012). College curriculum developers have been slow to adapt the instructional approach to attract and keep adult learners (Fulton, 2012; Ivala et al., 2013; Ullman, 2013). If innovative instructional methods are not incorporated into the classroom to encourage learning, faculty may lose the opportunity to engage this population (Bergmann & Sams, 2012; Smith, 2012). On an administrative level, not adapting to new instructional methods could lead to lower student retention rates (Kenner & Weinerman, 2011). Little is known about the instructor's experience in adopting this new instructional method. The issue is that higher education instructors are apprehensive about instructional methods that are not lecture oriented (Batts, Pagliari, Mallett, & McFadden, 2010; Johnson et al., 2012; MacKeogh & Fox, 2009; Ocak, 2011).

The purpose of this study was to explore, through interviews, the decision-making processes and experiences that led instructors to adopt the inverted classroom (IC) method. Results may inform best practices to encourage other higher education professionals to adopt the IC method and respond to the learning styles of students coming into the system.

Synopsis of Current Literature

Three areas in the research literature established the relevance of the problem: (a) institutional responses to IC in higher education, (b) attributes of the IC classroom for adults in higher education, and (c) knowledge about the early adopters of innovative teaching methods and technologically-based courses in higher education. To ensure student retention and student success in the academic environment, instructors considered how adults learn and incorporated effective instructional methods into their teaching practice (Kenner & Weinerman, 2011). Faculty in the MacKeogh and Fox (2009) study reported that innovative didactic approaches were helpful in reaching and engaging students; however, traditional lecturing continued to be the instructional approach in higher education. The lecturing method has been seen by some as not only ineffective in promoting learning, but also ineffective in fostering student engagement (Bligh, 2000; Chickering & Gamson, 1987; Dufresne, Gerace, Leonard, Mestre, & Wenk, 1996; Ivala et al., 2013; Palis & Quiros, 2014). Individuals achieve deeper learning when they are offered the opportunity to talk about their learning experiences, relate, and incorporate new knowledge to previous, past and future experiences (Chickering & Gamson, 1987). Some researchers question the effectiveness of lectures because of the passive reception of information and the effort required to maintain attention (Palis & Quiros, 2014). Researchers challenge the lecture format because deep learning is not achieved when learners record information into their notebooks but are not invited to participate in the learning process (Dufresne et al., 1996).

An example of an effective instructional method that encourages deeper learning for students is IC (Ivala et al., 2013). Educators in Grades P-12 found increased student learning, improved graduation rates, and enhanced test scores when the IC teaching method was employed as compared to the traditional lecture format (Fulton, 2012; Ullman, 2013). Although the IC approach is transferrable to college-level learning, adoption of this method has been limited (Fulton, 2012; Ivala et al, 2013; Ullman, 2013).

Research indicated that the instructional methodology of designing or teaching online courses in higher education has produced angst for many instructors (Johnson et al., 2012; Ocak, 2011). Low technological self-efficacy was found to influence the reluctance of incorporating technology into professional practice (Ivala et al., 2013). Many higher education instructors are not willing to part from lecture-based instructional methods (Johnson et al., 2012; MacKeogh & Fox, 2009). Evidence of increased job satisfaction and reports from instructors who have become comfortable with the IC method may encourage more faculty buy-in (Ivala et al., 2013; Knowles, 1984). Instructors' promotion of the IC method and detailed experiences of transitioning from lecture-based instructional methods to IC adoption may enhance interest in IC.

Preview of the Chapter

This chapter highlights the literature search strategy followed by a discussion of seminal research in andragogy theory (Knowles, 1984), Kolb's (1984) experiential learning theory, and diffusion of innovations theory (Rogers, 1962). An examination of how these theories related to present research is assessed and investigated. This is followed by the literature review, which focuses on the key variables related to this study:

institutional responses to IC in higher education, attributes of the IC method for adults in higher education, and early adopters in higher education faculty. The chapter ends with a summary and conclusions where I describe the gap in the research literature that this study addressed.

Literature Search Strategy

The search of peer-reviewed literature included use of the ERIC educational database. The key search terms *inverted classroom* and *flipped classroom* were used with no limitations for full-text peer-reviewed journal articles published within the last 5 years. The bibliographies from these journal articles provided a rich base for me to conduct additional searches using the authors' names.

I then searched Education Research Complete as well as ED/IT Digital Library using the terms *professional development* and *higher education* and *inverted classroom, administration* and *flipped classroom* or *inverted classroom,* and *early adopters* and *higher education faculty*. The search revealed current findings in these distinct areas and served as a baseline for current understanding. Journal articles located in ED//IT Digital Library included present-day innovative practices in secondary and higher education.

Conceptual Framework

Several adult learning theories served as the conceptual framework to assist in understanding the adult learner. Knowles's (1984) adult learning theory tenets included best practices for effectively teaching adult learners. Kolb's (1984) discovery of how individuals processed information through experience, and then transferred this new knowledge into human behavior, highlighted the benefit of creating effective teaching

methods for adults. Rogers's (2003) theory identified factors that influenced the adoption of an innovation, such as acceptance of the IC instructional method by higher education instructors, and provided understanding of the process of how individuals made the decision to choose nontraditional instructional methods. Following a discussion of each of these theories, the chapter concludes with a discussion of how these theories were applied to this study and the process of analysis to understand participants' experiences.

Adult Learning Theory

Andragogy theory (Knowles, 1975) has a rich history that has influenced the concept of adult learning for practitioners worldwide. The first application of the term andragogy, the art and science of helping adults learn, was asserted in 1833 by German educator Alexander Kapp (Henschke, 2011). Lindeman then introduced the concept of andragogy to the United States in 1926, extending the concept as a significant approach for instructing adults (Chen, 2010; Henschke, 2011).

The andragogy concept advocates six core adult learning principles (Knowles, 1984):

- Learners need to assign relevancy and applicability to new information they receive.
    - Learners' have a self-directing concept of self that steers them to decision-making and goal-setting tasks.
    - Learners analyze and attach meaning to the breadth of their life experiences to assist in processing new knowledge.

- Learners' acquisition of knowledge is perceived as a stepping-stone to increasing their life potential and as a tool to effectively cope with real-life issues.
- Learners are life centered and view education as an instrument to increase self-competence.
- Learners' motivation to learn is intrinsically based on their need to acquire information to problem solve or assist in enhancing their quality of life. (Knowles, 1975, 1984; Knowles, Holton, & Swanson, 2005)

Knowles's (1975) anagogical exemplar of learning addressed the distinct essentials of adult learners. They were contained within the following assumptions: self-directed instructional methods are effective for adults, adults' day-to-day living experiences are a rich resource for connecting new knowledge with previously processed information, daily encounters coupled with accompanying challenges prompt adults with an eagerness to learn; orientation to learning for adults is problem centered, and an internal locus of control and curiosity drives motivation. The attributes contained in Knowles's (1984) assumptions of adult learners provided context for how college instructors processed and applied new knowledge and innovative instructional methods.

Some educators who teach in higher education embrace the benefits of incorporating Knowles's (1984) adult learning assumptions into their professional practice (Carpenter-Aeby & Aeby, 2013; Rodrigues, 2012; Ross, 2011). Research results suggested there needed to be a paradigm shift from traditional lecture-based instruction in college to inviting learners to be participants in the learning process by incorporating

self-directed instruction and allowing time to reflect on the new knowledge (Chen, 2014; Kenner & Weinerman, 2011). Chen (2014) captured the experiences of 10 nontraditional learners who attended a biospsychosocial-based psychology course. In Chen's study, in lieu of the instructor teaching from the text assigned to the course, the students were given the freedom to choose and explore an instructor-approved lifestyle topic in which they would like to see personal change. This problem-solving approach coincided with Knowles's (1984) self-direction and problem-solving approaches to learning. Chen concluded that topic choice propelled learners' thinking. The instructional directive of how to process emotional thought challenged learners' preexisting perspectives, revealed varied perspectives of themselves, and provoked learners to change their current ways of processing information to the new ways they learned to problem solve.

To increase retention rates and promote student success, college administrators should prepare instructors to accommodate the academic needs of the growing number of nontraditional students who lost their jobs in the 2008 recession, veterans who delayed their education because of military service, and adults who recently completed their general equivalency diploma (Kenner & Weinerman, 2011). Kenner and Weinerman (2011) found that for adult learners to effectively process in-depth academic knowledge, educators must present new strategies or techniques in ways that challenge or compete with ingrained strategies. Procedural knowledge, acumen used in day-to-day work operations by adult learners, is a valuable asset. However, when adults transition from the workplace to the college classroom, they become frustrated when they discover their work-based information-processing skill set is inadequate in an academic setting (Kenner

& Weinerman, 2011). The technique of framing various learning strategies in ways students can see the purpose of instruction and purposefully invite work and life experiences into the classroom aligns with Knowles' (1984) components of self-direction and the value of experience. Kenner and Weinerman suggested using such strategies such as changing ingrained learning processes and framing instruction in ways adults can see how the lesson will personally benefit them assists in creating an inviting and palatable learning environment as adult's transition from the workforce to academia.

Infusing the tenets of adult learning theory requires adults to be involved in planning and evaluating their instruction. Experience provides the foundation for learning information that has immediate relevance to their job or personal life. Content taught in higher education strengthens critical thinking skills and problem-solving abilities (Carpenter-Aeby & Aeby, 2013; Rodrigues, 2012). The Knowles (1984) model was used in a first-year master's level course in sociology to highlight the relationship between adult learners and how they learn (Carpenter-Aeby & Aeby, 2013). In this study, the instructor collaborated with students in creating a learning environment, activities, and instructional strategies based on the andragogy theory. Students who were part of this study reported the similarities of andragogy to elements representative of social work education: learner-centered (client-centered) approach, the value of life experience to life history and strengths in social work practice, developmental tasks of social roles to context, respecting the learner-to-client ability to participate and determine his or her academic path or destiny (Carpenter-Aeby & Aeby, 2013). Additionally, students reported the learning environment was responsible for their increased focus in learning,

the rich connection between life experiences and learning, and the immediacy of application of problem-solving methods in their personal lives (Carpenter-Aeby & Aeby, 2013; Kenner & Weierman, 2011).

In another study, adult learning principles were successfully utilized to engage students in an undergraduate mathematics course (Rodrigues, 2012). Students adept in mathematics were encouraged by the instructor to mentor their classmates who struggled with the topic matter. The strategy of using experience to teach another aligns with the principle of using experience to connect previously learned knowledge with new discoveries (Knowles, 1984). Readiness to learn, another principle of Knowles's (1984) theory, was demonstrated when the instructor assessed the students' math aptitude before assignments were communicated. Moreover, adults were motivated to learn mathematical concepts by employing real-life scenarios designed through class outings. Trips to museums and tours to analyze architectural phenomena assisted students in associating math concepts with everyday life.

Harper and Ross (2011) found the remedy to strengthen retention rates and offer a sense of academic direction in an undergraduate Interdisciplinary Studies program was to invite students to design a course for the program. Previous to adopting this idea, 400 students who attended this Southern-based university in 2009 had undeclared majors. Administrators and educators at the university capitalized on Knowles (1984) assumption that students excel when they are in charge of their learning experiences. Findings concluded marginal students excelled when given the opportunity to work alongside facilitators who assisted in guiding them as they contributed ideas for a newly designed

course; students' love for learning was rekindled; and learners looked forward to attending class (Harper & Ross, 2011; Knowles, 1984).

The adult learning theory-based studies referenced how beneficial this method was as a basis for adult learners in higher education to be actively engaged. However, absent from this review were studies that discussed instructors' perceptions or experiences of merging the attributes of adult learning into an IC learning environment. Data generated from interviews with instructors in this study addressed whether or not the attributes of adult learning theory were effective in persuading individuals to adopt IC into their professional practice.

Experiential Learning Theory

Kolb (1984) defined the process where knowledge is generated through the transformation of experience as experiential learning theory (ELT). New knowledge is acquired knowledge is realized by combining knowledge taught with new experiences (Kolb, 1984). The history of ELT is shaped by the research of Dewey, Lewin, and Piaget (Kolb, 1984). Dewey's pragmatism philosophy foundation informed the role of experience; the democratic values of cooperative leadership, dialogue, and scientific humanism guided both Dewey's and Lewin's opus in the field of ELT (Kolb, 1984); and Piaget's epistemology underpinnings contributed to the origins of ELT (Kolb, 1984). Kolb's (1984) explanation of the *here and now* experience when analyzing new ideas and the use of feedback to change traditional teaching practices provides a theoretical reference on the mental process of how college instructors adopted the IC teaching methodology.

Kolb (1984) found that to enable the transference of new information to be successful, individuals must navigate through four modes of learning: concrete experience, reflective observation, abstract conceptualization, and active experimentation. This learning cycle suggested an individual participates in a particular action which provokes thoughts or feelings of how to apply what was introduced to analogous or different conditions; analyzes whether there is a disconnect between experience and understanding; reflects on new ideas or conclusions about what was experienced or observed; and applies different behaviors and concepts to new experiences they encounter (Kolb, 1984). According to Kolb, effective learning takes place only when an individual encounters and progresses through all four stages of the Kolb model.

The supposition that one's personal experiences play a major role in the processing of new knowledge aligns with the tenets of adult learning and experiential learning (Knowles, 1984; Kolb, 1984). Kolb's multi-dimensional process extended Dewey's (1938) assumption that learning through experience was a foundational concept in formal education. Learners effectively process new knowledge when they are uninhibited and involve themselves in new learning experiences; have the opportunity to reflect on these experiences in multiple ways; create beliefs that amalgamate their observations into principles; and use these philosophies to solve problems (Kolb, 1984). The concepts of Knowles' (1984) experience and orientation align with Kolb's (1984) assumptions. Both Knowles and Kolb posited meaning is drawn from experiences. Moreover, experiences play a critical role in the acquisition of knowledge. In both adult

learning theory and experiential learning theories, individuals engender a personal understanding of new information and draw from this reservoir when solving problems.

Kolb's (1984) experiential learning theory was a foundation for this study because it helped explain what conditions motivated higher education instructors to adopt the IC instructional method. Additionally, Kolb's theory could be expected to elucidate what factors encouraged higher education instructors who employ IC to be self-directed learners. The process of how higher education instructors transferred their experience and knowledge from traditional teaching practices and transition to learning innovative teaching strategies would be most informative.

Rogers's Diffusion Theory

The diffusion process, or how an innovation is communicated over a period of time among individuals, groups, or subsystems, offered insight into the dynamics of how instructors transition into adopting innovative instructional practices (Rogers, 2003). Rogers discussed Tarde's human behavior concept regarding change. Tarde found individuals adopt a new idea, followed by a large momentum of additional adopters, and finally the assumption rate or s-curve levels off (Rogers, 2003). This s-curve concept illustrates the rise and fall of innovation adoption (Rogers, 2003). A more extensive understanding of Rogers's framework – primary elements of diffusion, the innovation-decision process, attributes of innovations and adoption rate, and adopter-types – offers a methodical and comprehensive understanding of the process of technology adoption.

Primary Elements of Diffusion

Rogers (2003) noted four elements of diffusion – innovation, communication channels, time, and social system—each providing an understanding of the process of innovation as I discuss below.

Innovation. An innovation is an idea, practice, or project that is perceived as new by an individual (Rogers, 2003). If a preexisting innovation is introduced to an individual sometime after its initial exposure, the change is still considered new to the individual. When a change is introduced, it is important to establish where the innovation starts and when another ends (Rogers, 2003). For example, consider innovations in the Apple product line – iPhone, MacBook, and iPad. The interrelatedness of these products, distinguished as a technology cluster, enables owners to use them in a collective manner. Using any one of these items at a time would represent in Rogers's view, the ability to "start and recognize a predetermined end" (p. 14). Innovations also have an uncertainty component (Rogers, 2003). Individuals are concerned with the consequences of adopting or rejecting a change. To quell indecisiveness, Rogers suggested individuals be informed of the advantages and disadvantages associated with the innovation.

Communication. The concept of communication channels is also an element of diffusion. Rogers postulated that communication is the process of individuals originating and distributing information between one another with the result of gaining mutual understanding. The source of communication is a person or institution that inaugurates an idea. Rogers called the method in which the source relays the message as a channel. According to Rogers, the process of communication through diffusion occurs when an

innovation, two participates or units of adoption and a communication channel are in place (Rogers, 2003).

Time. Rogers's (2003) factor of time is connected with the innovation-decision process by which an individual moves from the awareness of innovation and continues through his or her support or denunciation. Time aligns with the association of one's willingness to try something new as compared with others in the same group. Through the concept of time, the perceived benefit of an innovation is communicated through the decision to adopt or reject.

Social system. The social system, the last attribute in Rogers's (2003) diffusion process, is "a set of interrelated units engaged in joint problem solving to accomplish a common goal" (p. 23). Individuals, groups, and associations are examples of social systems. Rogers stated that the social structure of an entity or group greatly affects the social system. The social system serves as a border where innovations have an opportunity to disperse. The diffusion process within the social system is affected by norms within the group, roles of leaders and change agents, and the consequences of adoption or rejection.

Innovative-Decision Process

Rogers (2003) defined an information-decision process as one where information-seeking and information-processing activities reduced the uncertainty associated with an innovations advantages and disadvantages. The five stages related to this process included knowledge, persuasion, decision, implementation, and confirmation.

In the initial knowledge stage, an individual engages to learn "what the innovation is and how and why it works" (Rogers, 2003, p. 21). Rogers identified two parts of this stage—awareness-knowledge and principles-knowledge. Awareness-knowledge is the initial introduction of the innovation. This type of knowledge related to how to correctly use an innovation. A sufficient level of how-to knowledge increases the chance of adoption if this knowledge is introduced before the innovations trial period. This is followed by principles-knowledge of the ways and why an innovation functions. Adoption of an innovation can take place without this principles-knowledge; however, there may be a propensity to discontinue its use if the innovation is misused.

Once the knowledge stage is passed, attitudes regarding an innovation do not always lead to adoption (Rogers, 2003). Persuasion is the next stage in the process of adoption. Attitudes regarding persuasion are not realized until after the knowledge stage has transpired when individuals are drawn to innovation on a more effective or feelings level than on a cognitive level. Therefore, opinions of one's peers or colleagues significantly influence the decision to engage. Additionally, in the persuasion stage a peer's analysis of innovation, according to Rogers, more readily leads to adoption than a general expert's advice.

The decision stage is marked by an individual adopting or rejecting an innovation (Rogers, 2003). Rogers (2003) referred to adoption as "full use of an innovation as the best course of action available" (p. 177). There are three forms of rejection: active rejection, passive rejection, and discontinuance (Rogers, 2003). Rogers asserted that active rejection or passive rejection is possible at any stage of the innovation-process. An

individual's active rejection ensues after an individual has been given opportunity to interact with an innovation; passive rejection materializes when an individual never considers embracing the innovation. Discontinuance is the state of rejection after an innovation has been adopted.

According to Rogers (2003), the innovation is then placed into practice during the implementation stage, although a degree of adoption uncertainty may still be prevalent at this stage. Rogers purported that change agents or administrators who promote the innovation can bring clarity to user's misunderstandings by quickly addressing any residue of resistance. The process of reinvention, "the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation (p. 180)," materializes in the implementation stage. Rogers noted that there was a distinction between invention and innovation. An invention is a progression by which a new concept or design is encountered while innovation is the method of using a preexisting idea. Prompt adoption or the institutionalization of a concept takes place after the reinvention phase is engaged.

Once individuals have adopted an innovation they tend to seek assistance for his or her decision at the confirmation stage (Rogers, 2003). Here the adopter confirms their decision to innovate with the continued use of the innovation. If, however, an individual is predisposed to differing opinions and experiences through communications about the innovation, the initial acceptance can be annulled. Because one's attitude has a dramatic effect on the acceptance of an innovation, positive messages from peers who have already adopted the innovation have an enormous impact on adoption. Rogers associated two

terms, replacement discontinuance and disenchantment discontinuance, with the act of disengaging with innovations as part of this last stage. A decision to replace an already accepted innovation with one better suited to his or her needs was called replacement discontinuance. In the case of disenchantment discontinuance, an individual rejects an innovation because it did not meet their needs.

Attributes of Innovation and Adoption Rates

Though Rogers (2003) thought that a modicum of uncertainty was always a distinguishable factor when one considers a change, he advocated five innovation attributes that serve to decrease an individual's uncertainty level. They were relative advantage, compatibility, complexity, trialability, and observability. Relative advantage is the perception that an innovation is more superior to a previous version. Cost and social prestige are elements associated with relative advantage. If the majority of members in a group become adapters, it is more likely that members who have not will be persuaded to do so as well. Direct or indirect financial incentive offered to members in a social system can increase the innovation adoption rate.

Compatibility is the perception that an innovation agrees with an individual's ethics, familiarities, and desires. Rogers believed the more compatible an idea was with the needs of a potential adopter, the more likely he or she could assign meaning to the innovation. Complexity is the degree in which an individual perceives the innovation as being challenging to comprehend or practice. Rogers stated that new concepts perceived by individuals as simplistic are more readily adopted than innovations that require them to learn new skills or gain new insights.

Trialability is the degree and time allotment an innovation is available for investigation. Rogers asserted the rate of adoption increases if innovations are introduced in increments along a period of time as opposed to introducing the entirety of a new concept at once. If the process of reinvention, "the degree to which an innovation is changed or modified" (Rogers, 2003, p. 180), occurs during this stage the adoption rate increases. This is because the innovation can be modified to adapt to the adopter's needs.

Observability was defined as what individuals see as an innovation's final result. Rogers declared the clearer the innovation's results to potential adopters the faster the adoption rate. When individuals are "sold" on an idea, they are more likely to communicate their experience to friends and colleagues.

Rogers (2003) purported that the rate of innovation adoption was dependent upon one's perception of these five attributes. Rogers defined rate of innovation adoption as "the relative speed with which innovation is adopted by members of a social system" (p. 221). The measurement factor was based on how many people adopted an innovation within a particular time frame. Predictability rate of adoption is increased on a rapid basis if there is a heavy influence from mass media, personal means, individuals who belong to the same group, administrators, or change agents (Sahin, 2006). Uncertainty has the potential to decrease, and the rate of adoption increases if an individual finds a change is consistent with his or her necessities, convictions, and tenets. Rogers (2003) contended that the rate of adoption increased if complexity levels were low and potential adopters' sense innovations as having greater relative advantage, compatibility, trialability, and observability.

Adopter Categories

Rogers (2003) described the adopter types as a strategy of classifying the categories associated with the adoption of an innovation. The classification of adopters included innovators, early adopters, early majority, late majority, and laggards. Rogers stated only confirmed adopters were included; incomplete adoption and non-adoption did not qualify in the adopter categories.

Innovators. Innovators were defined by Rogers (2003) as most willing to encounter new ideas. Individuals in this category were those who deal with a high level of uncertainty when deciding to adopt. Innovators bring new ideas into the group, though may be considered outsiders within the social system.

Early adopters. Early adopters, the next level in Rogers's categories, usually hold management roles in a group. Members of the group seek their advice when considering new ideas. Sahin (2006) suggested that the subjective perspectives and viewpoints of these early adopters could influence group member's decision to adopt. When leadership provides "their stamp of approval on a new idea by adopting it, uncertainty levels within the diffusion process dissipate" (Rogers, 2003, p. 283).

Early majority. Next in Rogers's (2003) view are the early majority adopters who embrace innovations before the masses. According to Rogers, early majority adopters are unlikely to hold a position within the group; however, they recurrently interact with the group members. Moreover, being positioned between the early adopters and late majority, the early majority stay connected by creating relationships among

members. This group rarely leads the innovation adoption transition; however, when they are on board they follow with intentionality.

Late majority. Late majority adopters declare a decision to adopt after most of the group members have already bought into the idea (Rogers, 2003). Rogers supposed that group peer pressure was a motivator for adoption. The late majority can develop a less guarded posture regarding adoption if change agents or an early adopter within the group communicates their motives for accepting an idea (Rogers, 2003)

Laggards. Laggards, the final group, have a conventional view of change and are the least likely in the group to adopt an innovation (Rogers, 2003). Laggards within a social group tend to attract one another in Rogers's view. They tend to adopt after they have observed an innovation fully functioning and adopted by other members in a social system.

Rationale for Conceptual Framework

Analyzing human behavior and thought processes through the lens of adult learning theory, experiential learning, and diffusion of innovations provided understanding of the experiences of higher education instructors as they adopted the IC instructional method. Knowles's (1984) assumptions regarding adult learning provided knowledge of what factors motivated the faculty as adult learners toward learning a new approach. Instructor's reflections on their direct participation with technology and new teaching approaches gave clarity as to why innovative teaching strategies were integrated into their teaching.

The exchanges amid learning, life and the formation of knowledge are foundation tenets of experiential learning theory (Kolb, 1984). Kolb's experiential learning cycle offered insight into understanding the cognitive processes of the participants in when an innovation opportunity was encountered. Interviews with faculty revealed mental thought processes of an individual's initial engagement, captured his or her reflections of the initial engagement, and learned the mental steps of understanding how an instructor choose to modify or incorporate IC into their professional practice (Kolb, 1984).

Rogers's (2003) primary elements of diffusion, the innovation-decision process, attributes of innovators, and categories of adapters provided a basis for developing interview protocol and analyzing the instructors' experiences reflected in my study. According to Rogers, strong relationships within a group can change an individual's opinion. Ascertaining how individuals fostered interpersonal relationships during the adoption process contributed to understanding how higher education administrators can make IC more acceptable to faculty categorized as late majority or laggards. Additionally, Rogers stated subjective perspectives held by faculty members in the same group influence group members' intention to adopt. I was interested in what statements or actions held by other group members influenced the decision to adopt IC for the faculty in my study. Reinvention is "the degree to which an innovation is changed or modified" (Rogers, 2003, p. 189). Repeated reinvention has the propensity to create an environment for adoption. I was interested in understanding these participants' journey of adopting an IC teaching strategy to make it an acceptable instructional method (Rogers, 2003) and what types of incentives, if any, persuaded late adopters.

Examining participant's cognitive processing and experiences regarding IC adoption through the adult learning frameworks of Knowles (1984), Kolb (1984), and Rogers (2003) provided insights and communicated new understandings on how the personal experiences, professional development sessions, and working environments cultivated an environment for adoption. The ways in which IC was introduced to participants when analyzed through adult learning theory (Knowles, 1984) offered understanding for designing future professional development sessions that attract faculty who recoil from innovation. The process of combining life experiences, the instructional method of IC, and then incorporating IC into professional practice communicates individual's cognitive processing patterns (Kolb, 1984). Findings can be used to restructure professional development sessions that introduce IC and other innovations. Conditions that facilitate acceptance of IC adoption through the lens of Knowles's (1984) theory may provide an understanding of the process regarding how individuals chose nontraditional instructional methods. In the next section, the Literature Review includes research related to IC in higher education within the following areas: institutional responses to IC, attributes of IC method for adults in higher education, and higher education faculty use of IC.

Literature Review

The global innovation-based economy, driven by emerging technologies has contributed to a surge of expeditious technological advances being quickly adopted in college curricula (Malyn-Smith & Smith, 2013). The response of higher education institutions to this impetus has been to place emphasis on inventive ways to enhance the

learning experiences of their student population (Kazley et al., 2013). In the following literature review, I cover the topics of (a) institutional responses to IC, (b) attributes of the IC method for adults in higher education, and (c) research on higher education faculty use of IC. The first section on institutional responses to IC section is comprised of two distinctive discourses, one on K-12 and another on post-secondary education.

Institutional Responses to IC

Technological advancements developed to create and distribute information through an established workforce suggest there is a need to secure and promote effective instructional techniques in higher education (Correa, 2011). Technology-based innovations in the classroom that enhance student motivation and reduce attrition rates should compel universities to investigate numerous instructional and enrichment opportunities to effectively engage adult learners (Berry & Paulo Kushnir, 2013; Edwards, Kirwin, Gonyeau, Matthews, Lancaster, & DiVall, 2014). If higher education does not consider instructional and enrichment opportunities, it is in jeopardy of losing the attention and responsiveness of university students (Ralph & Ralph, 2013). When consideration is given to adapting evolving requisites of a tech-savvy student body, universities are expected to train faculty on student-centered instruction (Edwards et al., 2014). In order to effectively assist adult learners, university administrators should have in place developmental training and activities to orient and train faculty in using innovative instructive practices (See & Conry, 2014).

IC instruction has been proven a useful instructional method to engage students in K-12 settings (Bergmann & Sams, 2012; Fulton, 2013; Roehl et al., 2013; Siegle, 2014;

Schaffhauser, 2013). For example, budgetary cuts propelled a southeastern Minnesota school district to discover innovative ways to present math instruction to high school students (Fulton, 2013). As an alternative to purchasing new textbooks for the upcoming semester and accede to the state's new math standards, the school board supported five math instructors designing flipped instruction (IC) for the math department. Designed to help areas where students struggled most while supporting various learning styles, the IC approach was successful in several ways (Fulton, 2013): knowledge of students' improved math scores motivated other teachers who taught different content areas in the high school to adopt flipped instruction techniques (Fulton, 2013). After receiving flipped classroom (IC) instruction for 2 and a half years, students outscored individuals who were instructed through lecturer-based instruction (Fulton, 2013). Administrators charged all instructors with a yearly goal of incorporating a digital learning objective into their professional practice (Fulton, 2013). An atmosphere for innovation, facilitated by administration, appeared to give the instructors inspiration to move away from the norm of lecture-based instruction (Fulton, 2013). Fulton concluded that combination of IC and faculty-designed curriculum can serve as a benchmark for budget-strapped school districts.

Not only was IC suggested a viable resource for financially-challenged school districts, but it was also useful when restructuring family and consumer science curricula. Roehl et al. (2013) determined that IC was an effective student-centered active learning pedagogy that better engaged a tech-savvy student population than traditional-based classroom instruction in a family and consumer science course. Individuals in the

millennial generation born between 1982 and 2002, transform learning environments worldwide (Roehl et al., 2013). Considering millennials process information differently than students who preceded them and they have been exposed to technology at a young age, Roehl et al. (2013) suggested educators would be more effective engaging this age group if they shifted from a teacher-centered instructional methods to a learner-centered exemplar. Benefits of infusing IC in a family and consumer science course included: (a) the instructor had the opportunity to monitor how deeply students grasped knowledge via one-on-one sessions; (b) students were encouraged to engage learning activities according to their own learning style; (c) students had the ability to replay lectures as needed; and (d) the class schedule was uninterrupted if the instructor was absent. Additionally, Roehl et al. (2013) found that IC structure was conducive to students who became ill during the semester or participated heavily in sports.

IC has been an effective instructional tool for students who are gifted and developmentally challenged (Schaffhauser, 2013; Siegle, 2014). The reversal of classroom and homework management from traditional formats, such as lecture-based canons, has been proven to be a fruitful instructional strategy for curriculum design for gifted and talented students (Siegle, 2014). IC instruction focuses on the needs of the gifted student by amplifying their aptitude. Siegle communicated a rationale for maximum impact for using IC with for gifted students and tips for creating a suitable environment. Justification for using IC included: (a) educators can become mentors instead of one-way disseminators of information; (b) differentiation attributes such as, adjustments of content, method, and the learning environment, (c) provided options for

instruction design; and (d) availability of methods and tools needed to design advanced lessons that challenged the students were available. From 2010-2011, public schools served about 13 % students who were developmentally challenged (U. S. Department of Education, 2013). As educational innovations suffused classroom instruction, special education teachers needed to determine what instructional methods were most effective for the learners they serve (Schaffhauser, 2013). Special education instructors found flipped classroom instruction (IC) was practical when education technology was leveraged. In other words, conventional education technology ingenuities were utilized to benefit children who have special learning needs. Schaffhauser found the In the Bring-Your-Own-Technology program, students showed enthusiasm when they were asked to bring their mobile devices to school. Faculty found students took devices seriously. Student sense of responsibility was fostered with students more involved in the lessons. They did not stand out from other students for using specialized tools in the classroom. Cloud-based or web-based software allowed students who have special needs in the program to access class assignments not only from anywhere within the school borders, but also from home, a hospital bed, or library. The playback ability of videotaped lessons or digital books assisted students who struggle with comprehension in the Schaffhauser study.

Though K-12 education has embraced IC and some higher education administrators laud the success and innovative underpinnings of IC (See & Conry, 2014), there remains a limited institutional response in incorporating this instructional method on the university level (Hemphill, 2013; Lane-Kelso, 2015). The response of higher

educational institutions to this impetus has been to place emphasis on inventive ways to enhance the learning experiences of their student populations (Berry & Paulo Kushnir, 2013; Correa, 2011; Kazley et al., 2013). Technological advancements developed to create and distribute information through an established workforce suggest there is a need to secure and promote effective instructional techniques in higher education (Correa, 2011). In a qualitative pilot study, Correa purported access to the construction and dissemination of knowledge contributed to a paradigm shift of how knowledge is acquired and distributed in higher education. This shift was a catalyst that changed student attitudes and expectations and points to an attitude of entitlement in learning. "How do students understand education as a vehicle for social change?" (p. 2401) was a central question the researcher addressed through the lens of feminist pedagogy and entitlement learning. Students and faculty addressed this shift in values and other prominent concerns in an on-line environment via reflective exercises. Multiple representations of student expression, the significance of questioning how the mass media characterizes teachers and the methodology of how teachers are introduced to young people were reflected in slogan designs for T-shirts, books for children, and updating commercial advertisements that speak to present-day relevant concerns. Instead of deferring to previously conceived ideology of the epitome of a teacher, student responses provided insight on their deep-set position of entitlement. This research undergirded the willingness of an institution to promote student engagement of online technologies to create computer-driven self-expressions.

Not only was there an observable paradigm shift of how instructors and learners view how knowledge is constructed and disseminated in higher education, Berry and Paulo Kushnir (2013) found teaching strategies (i.e. videotaped lectures; face-to-face lectures; podcasts; online assignments; discussion forums; and group activities) influenced the effectiveness of educational tools and innovations. A total of 60 first-year students enrolled in an introductory psychology course in an urban-based university participated in this mixed-methods study. Learners' preference of lesson delivery was measured by quantitative survey questions, *t*-tests that measured differences between final grades for the online students and those in the classroom setting, and open-ended survey questions. Half of the students participated in the online version of this course and the remaining half attended the lecture-based classroom version. Learners who participated in the online version received lecture material via podcasts (an audio file downloadable to computers or portal electronic devices) and were required to meet with the instructor in a traditional classroom three times during the course. They responded to quizzes and discussion boards via the institutions already established learning management system. Students in the peer-facilitated lecture-based classroom version, who met three hours a class two times a week, used clickers (a type of response system) to participate in discussion boards and quizzes. Considering learners responses to being engaged in course activities, findings suggested the combination of online and classroom-based instruction promoted in IC was a useful instructional practice in an entry-level psychology course.

Among the small percentage of administrators of post-secondary institutions who appeared to have promoted faculty adoption of educational innovations is an east coast-based university that created a teaching challenge initiative designed to increase faculty use of evidence-based and student-centered instructional methods (Edwards et al., 2014). The New-for-You Reflective Teaching Challenge activity was designed with the underpinnings of diffusion of innovation theory, decomposed theory of planned behavior, and evidence-based insights for effective student learning. The challenge was originated to assist pharmacy faculty in integrating department standards, infuse new student-centered instructional methods into their teaching practice, and build faculty members confidence in incorporating innovative teaching into their professional practice. In this pilot study, 34 instructors were asked to select an instructional method they have not used before. They were then instructed to align their chosen instructional method with one of the seven principles for smart teaching, a vehicle to encourage adoption of the innovation (Ambrose et al., 2013). Instead of the institution providing typical training on educational strategies and techniques, faculty assumed the responsibility of researching, adopting, and presenting this technique to other faculty during monthly department meetings. Faculty responses to two online surveys were analyzed using descriptive statistics. The first survey was used to establish a baseline profile of teaching methods faculty used previously; the second survey was implemented to gather data regarding participation feedback, teaching strategies faculty used in 2013 and new strategies experienced because of the challenge, and specific information about the setting the pilot was conducted. The New-for-You Reflective Teaching Challenge was successful because it

provided a platform for faculty members to learn, amalgamate, and assess different teaching methods, included a linkage between evidence-based educational ideologies and daily classroom activities in a practical setting and opportunity for faculty to move from their current comfortable teaching practices and try new ones. Benefits the pharmacy department experienced include meeting the goal of curricular improvement, faculty growth, and student-centered instruction concomitantly.

Administrators at the clinical pharmacy practice department of another school of pharmacy located on the east coast found the flipped classroom method (IC) to be exceptional in exposing faculty to an instructional method that enhanced student learning and relevant educational philosophies (See & Corry, 2014). Instead using a lecture method to introduce 34 faculty members to IC, participation in a faculty development program enabled faculty to serve as learners in an origami course. A week prior to the faculty development day, participants received an email with homework that stated that outside of class they should view a YouTube video on how to make a paper crane and view a Prezi (www.prezi.com) presentation on the concept of the flipped classroom. Individuals were required to construct a crane, photograph it, and submit it by a specified due date. The in-class assignments consisted of homework assessment, review of submitted homework, discussion of creating a more advanced dragon crane, discussion on advantages and disadvantages of the flipped classroom design, individual and group reflections of flipped classroom pedagogy, and evaluation of the faculty development program. Exposing faculty to hands on learning of flipped instruction was a success as 84% of attendees confirmed the homework and faculty development session increased

their understanding of the flipped classroom. Basics of how to construct the original crane activity was a springboard for creating a more complex origami project. The idea of extending the crane creation project into a higher order learning in-class activity extended the learning experience. The reflective sessions in this study prompted faculty to share ideas on how they could "flip" a course that they taught. It appeared an extra layer of richness was achieved when faculty took on the role as students and not as passive attendees in this professional development exercise.

There was agreement with administrations of both K-12 and post-secondary education regarding the influence of innovation in classroom instruction. A summary of research findings suggested innovative learning techniques enrich students' learning experiences (Fulton, 2013; Roehl et al., 2013). Additionally, learning how to incorporate newly discovered educational innovations into faculty professional practice intensified inquisitiveness and encouraged confidence to evaluate unfamiliar instructional methods (See & Conry, 2014: Edwards et al., 2014).

In my literature search, I discovered more research on IC usage in K-12 settings than in higher education. If IC usage has the potential of engaging and retaining students in higher education (Edwards et al., 2014) and this instructional method supports various learning styles (Fulton, 2013), what remained unknown was why higher education instructors have not incorporated IC into their professional practice as seen in K-12 education. Discovering why some higher education faculty decided to adopt IC and their experiences in using it had the potential of shedding light on how to engage instructors who have not adopted the innovation.

Attributes of the IC Method for Adults in Higher Education

The popularity of on-line courses has driven higher education instructors to deliver content in a variety of formats to meet learners' varied learning styles (Kobayashi, 2012; Rakes, Dunn, & Rakes, 2013). Research findings related to diverse instructional methods such as IC concluded that adult learners stay motivated when the process of on-line learning is user friendly, when they have free range to manage time allotted to their studies in lieu of reporting to a brick and mortar setting, and learning is disseminated at a slower pace than offered in many traditional classrooms (Prayson, 2011; Rakes et al., 2013). In this section of the chapter, a discourse of the distinct characteristics of IC that have been effective for instructors who teach adults in higher education is presented.

Advances in innovative teaching pedagogy have augmented learning taking place anywhere at any time (Kovach, 2014). This neoteric reality suggested higher education instructional strategies should be carefully chosen as to enhance and maximize students' learning experience. In the IC, the role of the instructor is altered from the typical "sage on the stage" concept to one who facilitates the learning process. Kovach proposed instructors empower their students by giving them control of the learning process during in-class learning sessions in lieu of being inactive participants as concepts are hurled at them during class sessions. Kovach acknowledged there are advantages and encumbrances associated with the IC method. For example, instructors experienced a sense of liberty as a detailed lecture did not need to be prepared for every class meeting. However, instructors must embrace a level of readiness during in-class sessions with learners. To ensure instructors are prepared to respond to students' questions and provide

spontaneous feedback during face-to-face discussions, Kovach suggested individuals should be thoroughly knowledgeable about the subject they are teaching.

Another instructional strategy that maximized students' learning experience was researched in a case study by Moran and Milsom (2014). Instructors offered in-class, one-on-one support to learners who were struggling. Since students viewed lecture material outside of class, the researchers used the time traditionally deemed for lecturing for in-depth discussions and hands-on activities that provided needed lesson clarity. Moran and Milsom's (2014) case study was conducted at a large university in the southeastern part of the United States. Fifteen graduate students enrolled in an introductory level counseling course engaged in an IC-focused learning environment. The course contents included: "professional orientation and professional notes, legal and ethical issues, models of school counseling, classroom lesson planning, advocacy, collaborating, and accountability" (p.35). Moran taught the counseling course in a traditional classroom the year previous to this investigation and was the instructor featured in this case study. The instructor collected student's responses of their IC experiences via four questions that comprised the Flipped Classroom Feedback Instrument. On a 4-point Likert-type scale, results indicated that students rated the following activities as something they liked "very much": (a) working on projects in a small group environment; (b) listening to guest presenters speak on topic matter; (c) receiving in-class feedback from instructors while working on activities; and (d) listening to the instructor explain different topics.

Two instructor responses in the Moran and Milsom (2014) study affirmed the effectiveness of IC in higher education. Though it initially took time to become acclimated with creating and inserting course-based audio files into PowerPoint slides, the instructor found narrated PowerPoints useful in promoting understanding of course material for learners. The IC in-class component provided time for the instructor to present expanded coverage of the course material. During the previous year when Moran taught the same course in a traditional classroom setting, there was not enough time to present this same additional material. Students came to class more prepared by asking questions; they had the ability to apply what they learned outside of class to in-class activities. The implication from the results was that this same preparedness level was absent from the instructor's students the previous year while the instructor relished increased opportunities for instructor-student engagement sessions.

Using the lens of the Revised Community of Inquiry (RCOI) framework and a mixed methods approach, Kim, Kim, Khera, and Getman (2014) investigated instructors' and learners' perspectives of the flipped classroom IC design. In an attempt to expand RCOI, student and instructor responses assisted in formulating a flipped classroom framework. The researchers piloted IC activities across three classes in diverse disciplines. The subjects in this study included bio-medical engineering, sociology, and humanities courses taught at an urban-based University in Los Angeles, CA. Instructors offered their responses during interviews. Additional data was obtained through documents, such as course syllabi, and student outcomes. Captured by the interview protocol were the instructor's reflections for how they defined flipped classroom

instruction. Instructors also submitted their individual reflections of the semester-long experience.

Of the total number of 115 enrollees for the fall 2012 semester, 41 students participated in the Kim et al. (2014) study. They responded to a survey that contained items related to teaching orientation and technology use. A 30-minute semi-structured interview protocol was designed to garner a pronounced understanding of their experiences. Validation and reliability were achieved in this study via the use multiple types of data from several sources. Drawing from quantitative data in the surveys, the authors collected student perceptions of the value of IC from their survey responses in the areas teaching orientation and technology use. Descriptive statistics and correlation coefficient analysis techniques revealed trends in the IC environments. Students' perceptions in the Kim et al. (2014) study included that interactive classroom time was helpful in grasping course concepts; IC classroom activities appeared favorable as they were deemed more student-centered than traditional classroom activities. The researchers used the data from this study to develop six IC principles. According to the researchers, student engagement and learning was cultivated best when the following were provided:

> A clear connection between in-class and out-of-class activities; enough time for students to carry out the assignments; facilitation for building a learning community; prompt/adaptive feedback on individual or group works; and technologies familiar and easy to access. (Kim et al., 2014, pp. 45-46)

The nine design principles that emerged from this study included: (a) opportunities for learners to become exposed to IC prior to the beginning of class; (b) an

incentive for learners to come to class prepared; (c) provide an assessment to capture students' overall comprehension of course material; (d) communicate to learners the alignment between in-class and outside of class activities; (e) offer clearly defined guidance to students; (f) provide ample time for students to complete assignment(s); (g) provide facilitation for building a collaborative learning culture; (h) provide timely responses to individuals on collaborative group efforts; and (i) provide user-friendly technologies. These design principles assisted in forming the basis for questions asked of the instructors I interviewed in my study.

There were several noteworthy limitations to the Kim et al. (2014) study. Students' responses to the survey resulted in low internal reliability thus limiting what could be interpreted from the results. This study was conducted in mid-sized and smaller university settings. Future feasibility in large class settings remains to be explored. The study focused on participants' experiences with IC. Future research could focus on individuals' performance and motivation as a result of using the principles. Additional attributes of the IC method for adults were revealed in effectiveness of small group instruction; the appeal for IC-based classroom activities over traditional classroom activities; student skill development; and the benefit of studying content materials before attending in class sessions.

Small group interactive classroom time was an important component for students who processed new concepts (Gunyou, 2015; Kim et al., 2014; McLaughlin, 2013). In staying relevant considering the ever-changing technology innovations instructors have available in higher education, Gunyou's (2015) narrative study chronicled his

experiences using the IC method launched in an undergraduate introductory financial management course held at a university located in the central portion of the United States.

Rapidly changing technologies, the convenience and affordability of online platforms, and the ineffective method of lecture-based instruction led Gunyou (2015) to transmute his lecture-based instructional approach into collaborative personal mentoring within his professional practice as a higher education instructor. His decision to move away from the tradition of lecture was based on research that supported "a combination of active learning and interactive engagement between the instructor and students; and also among students and their peers" (p. 15) as a proven methodology to actually engage students. The author understood he needed to re-educate himself on the most effective instructional practices in the context of 21st century learning. After analyzing different education delivery methods offered on a plethora of websites, he discovered solely lecture-based instruction or courses designed for exclusive online uses were not the best resolves for teaching adult learners. The researcher found both methods do not accommodate the different ways in which students learn. Additionally, these approaches of instruction were not adequately preparing learners to handle real life situations. Instead, the group works to solve common challenges collectively as opposed to solving problems with the aid of repetition. Gunyou purported the most effective teaching philosophies recognize students learn at varying paces. Gunyou also concluded there is a need for an instructional method that accommodates learners' varied and distinct needs. He suggested an instructional method that emulates real life, provides flexible learning,

promotes innovative learning sessions, includes small group sessions that engage in interactive activities such as problem-solving are all found in the IC model.

For two semesters from 2013-2014, Gunyou (2015) infused the IC instructional method into a course he previously rendered as lecture-based instruction. Outside of class, learners viewed a brief series of videos disseminated weekly. Online quizzes after each video assessed student comprehension and participation. During in-class sessions, learners, with the guidance of instructors, applied viewed material to solve practical case studies in small groups. Small groups of students reviewed the video lessons together, presentations of solutions to cases, and conversations designed to underpin the material learned. Scores on individual and group assignments informed mastery. Tutoring sessions and instructor office hours were also available during in-class sessions.

Validation and reliability were achieved in the Gunyou (2015) study via the use of multiple types of data from several sources. Drawing on quantitative data, the researcher collected student perceptions of the value of IC from the survey responses in the areas of teaching orientation and technology use. Descriptive statistics and correlation coefficient analysis techniques revealed trends in the IC environments.

Findings in the area of mastery concluded the average score on graded assignments was 93% with IC and 86% using lecture-based instruction (Gunyou, 2015). Participation rates on in-class small group activities were 96% as compared to 91% using the lecture-based methods to disseminate information. Additionally, attendance remained high throughout the semester when IC was implemented. Conversely, attendance trailed during the concluding weeks of the course. Gunyou recommended instructors who teach

in higher education consider using IC-based methods because of the above-communicated findings. The cognitive processing and experience Gunyou drew on to transition from instructing a traditional classroom to becoming a firm supporter of IC design is one aspect of the in-depth understanding I hoped to capture from other instructors in my study.

The goal of McLaughlin et al.'s (2013) study was to examine the engagement, performance, and perceptions of students in a first-year pharmaceutics course between two different approaches – traditional lecture and IC. This bi-weekly course offered at a university located in the southern portion of the United States, was conducted once in 2011 and again in 2012 and consisted of 75-minute lectures over the course of 13 weeks. In 2011, a traditional lectured-based format was chosen to disseminate course content to 153 in-class students. Additionally, course content for this same class was delivered synchronously via video teleconferencing to 13 satellite students. Student learning assessments consisted of multiple choice examinations and essay questions. In 2012, the course was delivered in an IC format to 162 in-class students and synchronously to 22 satellite students. Twenty-five course lectures were condensed, pre-recorded, and downloaded into the university web site. Assessment methods such as think-pair-shares, student presentations, and a quiz took place during one of the four in-class gatherings.

Students responded to pre-and post-course surveys (McLaughlin et al., 2013). The pre-course survey collected demographic data, insights of interactive learning activities and preference for lecture delivery. Students offered open-ended responses to the categories of choice of learning materials, course organization, class activities, instructor

efficacy, and strengths and drawbacks of the IC method. Nonparametric tests were conducted to analyze data related to pre-course, post-course surveys, and the course assessment instruments. Pre- and post- survey results were compared using the Wilcoxon signed rank test. Course evaluations for 2011 and 2012 were examined using the Mann-Whitney U test. Spearman's rho was employed to explore correlations between variables. Quantitative findings concluded significant increases in two distinct areas: students' belief that learning course content prior to coming to class greatly enhanced their learning experience (p=0.001) and students' supported the combination of learning content prior to coming to class and using in-class activities to enhance what was learned when instructor and students come together (p=0.01). There was no significant change in final exam scores for the traditional and IC classes. The quality and efficiency of course interactions in the IC format greatly impacted the academic experience for learners in the satellite campuses.

Student's responses to open-ended prompts produced three major themes: engagement, empowerment, and development (McLaughlin et al., 2013). Students found coming to class prepared to talk about subject matter previously studies and the opportunity to communicate their understanding of this knowledge via active learning exercises facilitated quality engagement sessions with their classmates and instructor. Students communicated activities learned in the IC environment increased confidence in the understanding of material, students did not feel rushed when trying to understand course content as they were encouraged to review video lectures at their own pace, and

students were given guidance in acquiring additional knowledge beyond the scope of material taught and disseminated in class.

Students reported the IC-based instruction further developed their critical thinking, problem solving, and studying skills (Gunyou, 2015; Mason, Shuman, & Cook, 2013; McLaughlin, 2013). The McLaughlin et al. research team recommended a concentration on the longitudinal impact of IC on students' understanding of topic matter and retention. Additionally, they suggested future research center on how IC-based courses affect student's grades and self-regulated learning skills in other disciplines necessitates investigation.

Mason et al. (2013) compared the effectiveness of IC to a traditional classroom in the areas of: content coverage, learners' performance on quizzes and problem solving ability, and students' perceptions of the IC design. Using an upper-division mechanical engineering course for seniors, the research team investigated (a) how IC affects classroom management in a specific area of content coverage, (b) how IC affects learner perception of course material, and (c) what were student perceptions of the IC format for this course. This two-year study in an upper-level engineering course at a university located in the northwestern part of the United States consisted of running the Control Systems course two consecutive years. The first year a traditional classroom (TC) design was used; during the second year, the IC design was used. The Control Systems course was required for all undergraduate seniors, was a four-credit ten week course, was held four days a week, and the course was taught by the same professor. The 20 senior mechanical engineering students in the TC course served as the control group. Classroom

instruction was balanced between lecture-based activities and solving problems in the course textbook. Though there were instances where the professor employed interactive learning techniques for problem solving, collaborative learning in this classroom environment was not the norm. Problem solving, with the assistance of the instructor, had to be completed within a class period.

Video lectures on the instructor explaining course material coupled with a live screen capture of the instructor working through equations on a tablet computer was the primary source of instruction for students in the IC class (Mason et al., 2013). Learners were expected to locate the course videos associated with assignments and sample quizzes posted on YouTube. Twenty students engaged in individual or group problem solving activates when they reported to class. Instead of the instructor assisting with problem solving activities as communicated in the TC group, students were expected to work through scenarios posed by the instructor. After receiving time to analyze the scenario and offer probable solutions, the instructor asked the learners to present his/her solution and approach. The instructor offered guidance throughout this process by using group discussions to explain key concepts, giving students an opportunity to explain what they did not understand, and circulating throughout the classroom to clarify course-related misunderstandings. At the end of both courses students rated their perceptions on a five-point Likert scale survey on: “course organization; the instructor’s use of time; attitude and teaching style; the effectiveness of exams or reports; student’s personal effort; and the approximate number of hours per week spent studying for the course” (p. 432). An additional survey was administered to the students in the IC class. The 15-

question inquiry was used to measure student perceptions of the class design in the fourth and 10th weeks of the quarter. In addition to the survey, students participated in a focus group discussion facilitated by a faculty member who did not teach the course.

Results from this study concluded the IC format provided additional instructional time to cover more course material than in the TC. The end-of-course survey communicated that students in the IC course spent less time studying outside of class than students in the TC. Though there was an adjustment period of getting familiar with the IC format, learners promptly adjusted and preferred the IC format over the TC (Mason et al., 2013).

Various research findings discussed in this attributes of IC section concluded adult learners preferred the IC environment over the traditional classroom settings because the course design motivates them to stay engaged (McLaughlin et al., 2013) and small group activities such as problem solving and critical thinking allowed students to experience how their way of thinking aligns with topic matter, classmate's ideas, and the instructor (Gunyou, 2015). Additionally inviting students to become part of their learning process instead of assuming the role of a passive participant and the added layer of lecture-based instruction interchanged for one-on-one sessions with the instructors are attributes that enrich college students' learning experiences (Gunyou, 2015; Kovach, 2014). The missing component is what inspired these instructors to use IC and what challenges and barriers were involved in transitioning from one approach to other. That lack was addressed by my research for this study.

Higher Education Faculty Use of IC

To assist adult learners in becoming competitive in the 21st century workforce, the higher education instructors who teach them must become familiar and at ease incorporating technologically-based methods into their professional practice (Meier, Mineo, & Cheng, 2013). Research supports faculty who have incorporated IC into their professional practice found their work rewarding because students demonstrated accountability by completing mandatory pre-work and participating in enhanced in-class discussions (Bergmann & Sams, 2012; Vaughan, 2014; Mok, 2014). Bergman and Sams (2012) found students who performed well in IC courses took responsibility for their own learning as opposed to them assuming the role of passive consumers of the learning process. Vaughan (2014) and Mok (2014) witnessed students move from spectators during the learning process to engaged participates through in-class debate sessions. In the debate module of the introductory teaching course for preservice students she instructs, Vaughan (2014) found her students worked passionately and were highly engaged. In an effort to augment student engagement and improve student's experience, Mok (2014) infused a trial IC in an undergraduate information systems course. Mok (2014) observed a high level of participant energy, a sense of community among his 46 students, and the lesson videos designed for the course enabled students to take ownership of the topic which strengthened student understanding. Though there was research that supports the benefits of incorporating IC as an instructional tool for higher education instructors, what remained undetermined where the traits, norms, or behavioral patterns of instructors who have adopted this strategy early.

To understand the relationship between early adopters in higher education and the incorporation of technology into professional practice, Wright (2013) interviewed faculty at a Midwestern university to determine how they processed technology adoption. Wright's study captured faculty perceptions concerning technology transfer (TT) – the shift of new technology from the initiator to secondary users. Instructors communicated their opinions through explanations of teaching experience and time dedicated to incorporating technology into their teaching during face-to-face interviews.

Several perspectives emerged from the Wright's (2013) interviews. Most faculty viewed the thrust for TT in today's world as a positive change. No instructors communicated money as a driver for personal motivation to engage technology. Memories of failed attempts to incorporate technology on campus in the past were shared with new faculty. Wright recommended a mentorship initiative be constructed uniting longstanding instructors with new instructors. Seasoned instructors who understand and support the connection between faculty culture and communication networks in higher education have witnessed firsthand the ups and downs of technology acceptance over the years. New instructors communicated problematic issues with TT include administrators did not reward committed involvement with innovations and becoming acclimated with new technologies was time-consuming. Lastly, Wright suggested involving stakeholders early on and creating policies that support university objectives increases TT success.

Though Wright's (2013) research was not specifically about early adopters of IC, the findings are valuable for my study because they included the general process of technology acceptance in higher education. The questioning strategy in Wright's study

outlined effective strategies for me to consider as I developed meaningful questions for my protocol. Issues that probe more fully individuals' historical accounts of their adapting IC, suggestions on how IC should be promoted among instructors, and the effect of their experiences with IC have the potential of eliciting in-depth responses from faculty. Instructors in Wright's study found they needed to learn how to successfully move from traditional ways of course preparation (i.e. lesson planning, maximizing in-class activities, or preparing face-to-face topical lectures) towards incorporating innovative instructional methods such as converting lectures to video (Jeavons, Flecknoe, Davies, & White, 2013; Jungic, Kaur, Mulholland, & Xin, 2015; Moran & Milsom, 2015). Additionally, instructors found it necessary to intentionally prepare for in-class instructional sessions that served to enhance student engagement and to cover additional material (Jeavons et al., 2013; Jungic et al., 2015; Moran & Milson, 2015; Vaughan, 2013).

Jeavons et al.'s (2013) research examined whether IC instruction would improve student engagement and scholarship in an anatomy and physiology course featured at a university in Australia. Three modules in three Human Bioscience nursing courses were the focus of this study. IC was implemented in three learning modules of the Human Bioscience in nursing undergraduate course. A traditional lecture version of this same course ran concurrently throughout the semester. At the end of the study, the three instructors who taught the IC courses were interviewed separately. They shared the following observations: more preparation time was needed to convert foundational material into video cast form; the role of the instructor emulated a mentor-educator as

opposed to a know-it-all "sage on the stage;" and student engagement was enhanced during in-class gatherings as preparing and presenting lectures ahead of time freed up instructional time (Jeavons et al., 2013). When considering IC for a future anatomy and physiology course, Jeavons et al. suggested applying the IC technique to the entire class rather than applying it to a series of modules in order to establish congruency and communicate student expectations for the course. Also, suggested by their research was that enhancing computer and pedagogy skills before implementing IC lessened instructor angst when creating lessons plans; and that IC would be most effective if it were implemented in several subjects concomitantly because available peer support for faculty and students would be available to apply the new learning skills across the curriculum.

Jungic et al., (2014) found heightened opportunity for engagement with learners during IC instruction because of the freed up instructional time. At a university in Canada, two mathematics instructors taught three first-year calculus courses using the IC method. One course was flipped, (reformatted from tradition-based instruction to IC) per week throughout the semester. Each class focused on one topic–for example, Newton's method. The instructors broke down each topic into four stages: learners read a textbook or watched a video lecture; students responded to an online quiz; students worked through problems individually and within groups, and every week students worked on homework assignments. Though the authors communicated that considerable time was invested in learning how to record and edit teaching videos, the instructors noted the time and resources exhausted in learning a new instructional method was worth the investment as IC then became their preferred instructional method. When I interviewed instructors

for my study, I questioned what propeled them to devote extensive hours to learning a new way of lesson delivery. Additionally, the Jungic study communicated the instructors were eager to adopt IC as their primary instructional method because they felt a greater sense of student engagement with the larger courses they taught. The IC method enabled faculty to address student's misunderstandings about the course with immediacy instead of long periods of time elapsing (Jungic et al., 2014).

Researchers Jeavons et al. (2013) and Moran and Milsom (2014) agreed once an instructor's skill set was strengthened with the requirements needed to transform lecture-based material into audio files and videos, a feeling of confidence transpired using the IC technique. An example of this was referenced in a study by Moran and Milsom (2014). One part of the team, Moran, introduced the IC method in a master's level counseling course taught at a university in the Southeastern part of the United States. Just-in-time-teaching (JITT), a learning process created to stimulate in-class active learning, was used to help instructors identify learner needs. Fifteen first-semester students agreed to participate in this study. The focus of this study was to ascertain what IC-based activity best facilitated student learning.

The combined efforts of IC-based in-class activities and JITT in Moran and Milsom (2014) was a useful approach. Researchers concluded there was a positive correlation between improved student engagement during in-class activities and enhanced student outcomes. Recommendations included providing comparison opportunities via studying more than one counseling course per year, random assigning students to classes and comparing learning outcomes, involving individuals with an objective voice to assess

student work to prevent bias, and extending research efforts by incorporating IC in other counseling courses that have diverse student populations. Though this study offered great insight into preparations needed to transition from lecture-based to IC-based instruction and communicated the positive results of increased student engagement, no understanding was expressed regarding what types of individuals are willing to devote extended time periods beyond their normal teaching regimen to learn a new instructional strategy.

Several researchers have utilized Rogers's (2003) theory of innovation as a fundamental framework for analyzing technology adoption in higher education. The goal in this study was to expand the knowledge base of technology adoption using Roger's framework to examine instructors' transition from teaching in a traditional classroom to an IC. As a baseline for this study, findings discussed in this section related to the knowledge base regarding technology adoption in general.

Rogers's (2003) adoption process discussed earlier in this chapter has been applied to research in how higher education faculty process and adopt innovations in general, though not IC in particular (Martin, Parker, & Oyarzun, 2013; Wright, 2014). Also discussed in the following is research on the factors that influenced faculty innovation adoption in general (Keengwe & Kang, 2012; Singh & Hardaker, 2014). Rogers's adoption process, examined through research in instructional strategies of sociocultural theory, offered insight into the factors most influential in the intent to adopt (Phillips & Vinten, 2010).

Twenty-three faculty members, who taught at a Southeastern University, participated in a case study with a primary focus on adoption of instructional methods used in a virtual classroom learning community and conferencing software – the Horizon Wimba system (Martin et al., 2013). Faculty rated how likely they would adopt by examining Rogers's (2003) characteristics of innovation through online surveys and semi-structured interviews. Results indicated that individuals classified as relative advantage had a high level of flexibility in usage as the software could be used online or in a blended course. Virtual office hours were also a plus. Compatibility classified individuals were able to duplicate face-to-face instructional methods within the virtual classroom. Related to availability, lectures were archived for students who may have missed the real-time presentation. The Martin et al. (2013) study was based on a small sample from one institution and focused on online learning, not IC. What was not studied was higher education faculty from a variety of institutions adopting IC to curriculum.

Wright (2014) studied the conditions for adoption and barriers that impeded instructors from teaching online. In that mixed-method study, 363 faculty members at a large suburban university in the southeastern United States offered their perceptions of teaching online by responding to a survey. Following that survey, fourteen individuals agreed to be interviewed. Rogers's (2003) framework was used as a basis to assess the micro (individualist) level of the adoption process as well as the macro (structuralist) level of diffusion among faculty. The strongest motivators for teaching online included flexibility and convenience of hosting the classroom anywhere during convenient times. A personal decision was another reason stated for faculty's adoption of online learning.

Extra compensation for an increased workload was a strong motivator for adoption. Overarching barriers to teaching online reported were the amount of work in addition to their traditional workload and preparation time needed to maintain the course. Considering seasoned faculty members were more accepting of the online teaching format, Wright suggested seasoned instructors assist with training newer instructors.

The diffusion of innovations theory (Rogers, 2003) was used to determine key attributes of faculty adoption of educational technology and how these features influence instructor engagement (Keengwe & Kang, 2012). Twenty-five respondents, who taught at a large mid-southern public university, responded to the research focuses via a snowball sampling technique. Major themes generated from 25 narratives included leadership, training and development, and resources. Organizational support focused on a clearly defined vision of the organization goals and standards to make adoption possible. Training faculty and keeping them informed of new technologies was a more effective leadership role than providing more hardware or software. Administrators must provide ongoing training and development support for key users of the innovation. Faculty must have access to resources such as modern technology tools, instructional design and technology support, and funding to support adoption of technology tools. The research team concluded that technology adoption flourishes when faculty have opportunity to familiarize themselves with innovations before introducing them in a classroom arena, the innovations are incorporated into their traditional teaching regime, and realign their teaching and student outcomes with the technology.

Singh and Hardaker (2014) also focused their meta-analysis efforts on influences that have an effect on technology adoption. Using Rogers's (2003) framework to investigate the introduction of eLearning in higher education, the research team examined the precursors that facilitate or constrict the adoption process. For this study, 340 eLearning journal articles, books, and conferences from 2001 on were examined for the scope of adoption and scope for eLearning. The works that best advocated eLearning were divided into the following categories: macro-level (studies that examined the higher education content of eLearning), micro-level (studies that focused on individual and social factors), and articles that focused on managing the adoption process and the diffusion of technological innovations. After the literature had been coded, nine themes emerged: (a) Role of eLearning Strategy–adoption is facilitated by administers or managers communicating a clear goal and vision. The lack of this progression hinders widespread adoption by faculty; (b) Diffusion through Social Networks – communication among members of the same social group promoted observability and aided adoption decisions. Additionally, information concerning what groups individuals belonged to helped to predict when adoption will occur; (c) Top-Down and Bottom-Up Approaches to Diffusion, The group found top-down (pushing learning of new technologies on practitioners) and bottom-up (practitioners engaging administration) approaches and mutual understanding need to be reconciled. If this process does not occur, there is less probability of faculty adoption; (d) Role of Management–the propensity of technology adoption is most favorable in an environment where there is support, encouragement, and motivation for instructors. Managers showing a willingness to learn and search for new

innovations builds employee morale; (e) Role of eLearning–the literature communicated adoption of technology is predicated on administrators having and communicating a clear eLearning strategy through the institution; (f) Diffusion through Social Networks–the cohesive nature of members of the same social group are in a position to talk about and become familiar with an innovation. Increased visibility has the potential of aiding adoption decisions; (g) Supporting Infrastructures–an accommodating administrative and technical support team facilitates technology adoption. Additionally, the lack of training and how to effectively integrate technology into curriculum could have a negative impact in regards to technology adoption; (h) Attitudes towards Technology. Sentiments of instructors ranged from a sense of anxiety as they move from traditional instructional methods to technology adoption to the excitement of experimenting with innovations; and (i) Demographic Factors – age and gender are attributes that influence faculty members to adopt. The research team argued that adoption and diffusion of eLearning should not be based on only a micro or macro perspectives but also on the social dimensions of academic and professional goals, instructor technology interests and needs, sources of support, and social networks. Singh and Hardaker (2014) suggested encouraging faculty who adopt innovation to mentor computer illiterate faculty increases the likelihood of mainstream faculty adopting innovations.

Rogers's (2003) theory of diffusion was used to target the significant factors that influenced nurse educator's intent to adopt innovative teaching strategies in clinical nursing education (Phillips & Vinten, 2010). The authors studied Rogers's (2003) innovation adoption process attributes – relative advantage, compatibility, complexity,

trialability, and observability – to parallel the tenets of sociocultural theory. Sociocultural theory is a learner-centered approach through which the nurse educator motivates and supports students in accordance with their learning needs. A convenience sample of 71 clinical educators participated in an online course that focused on the role of clinical teaching. Participates in this mixed method pilot study were encouraged by the participating educators to respond to an electronic survey rating after the completion of the online course. Socioculturally-based teaching strategies such as role modeling and coaching were among the attributes rated. Additionally, subjects responded to two open-ended questions that asked what innovative strategies the educators currently used and what innovative strategies would they incorporate into their teaching practice. The survey results revealed the three most influenced attributes of Rogers's (2003) diffusion theory included compatibility, trialability, and relative advantage. All subjects agreed Rogers's (2003) innovative decision process influenced their intent to adopt a sociocultural influenced teaching strategy. Responses to open-ended questions revealed that encouraging learner exploration and application of problem solving skills were the technique most chosen for current use and intention to adopt. Phillips and Vinten concurred that adoption of innovative socioculturally-based teaching strategies is an important consideration when the strategy is compatible with the instructor's needs, experiences, and whether instructional strategy meets the learning needs of students. Though Rogers's (2003) model represented some factors that influenced adoption, the researchers concluded other factors such as the innovativeness of the instructor might also have influenced innovation adoption.

Summary

Two overarching themes emerged from the research studies of early adopters of Rogers's (2003) framework. Innovation adoption in higher education is more likely if faculty receive administrative and organizational support as compared to adopting a non-supportive role (Keengwe & Kang, 2012; Phillips & Vinten, 2010; Wright, 2014). Equally prominent was the time needed for faculty to feel comfortable using an innovation as well as design and maintain curriculum (Singh & Hardaker, 2014; Wright, 2014).

The literature review included the current research on IC adoption of IC. Findings suggested IC encouraged deeper learning and was a desirable instructional method for many instructors (Fulton, 2012; Ulman, 2013). Though innovative didactic approaches engaged learners, findings communicated that traditional lecturing continued to be the prominent instructional tool faculty use (MacKeogh & Fox, 2009). What remained unknown was how some faculty are deciding to incorporating IC into their professional practice and, conversely, why others have not embraced this innovation. An underdeveloped area in research was the decision process and experiences of individuals who have gravitated to IC, an instructional method much different than what they were accustomed. Chapter 3 will expand on the methodological approach for this qualitative study.

Chapter 3: Research Methodology

The purpose of this basic qualitative interview study was to explore the decision-making processes and experiences of higher education instructors who adopted IC. Using a qualitative research design and interviews with eight higher education instructors who adopted IC instructional approaches, I was able to assign meaning to faculty members' decision-making processes and experiences as they moved from traditional instruction methods to IC. An in-depth understanding of the decision-making processes and experiences of those who adopted IC may encourage other faculty to adopt this approach in higher education.

In this chapter, I introduce the research method, including a description of research design rationale and my role as researcher. The description of methodology for this study includes instrumentation and procedures for recruitment, participation, and data collection. This chapter concludes with a description of issues of trustworthiness and ethnical procedures.

Research Design and Rationale

The research question for this study was based on the conceptual framework and a review of the literature: What were the decision-making processes and experiences that led higher education faculty to shift from using traditional teaching methods to adopting IC approaches? The central focus of the study was the process and experiences of instructors as they transitioned from lecture-style instructional methods to IC instructional methods. I selected a qualitative approach rather than a quantitative approach for several reasons. This study was meant to explore the decision-making process and experiences of

instructors using IC. Patton (2015) suggested that individuals who have experienced a phenomenon are better equipped to inform on their lived experiences as opposed to individuals with secondhand accounts. Participants are then able to assign meaning to their lived experiences if they are granted opportunity to reconstruct their understanding and reflect on the meaning behind their thoughts. According to Moustakas (1994), personal statements from a small number of subjects who have experienced the phenomenon reveal patterns and relationships of meaning.

I selected the basic qualitative interview approach (Merriam & Tisdell, 2016) over a quantitative approach because the qualitative approach allowed for identification and a deeper understanding of undiscovered or untouched phenomena via the creation of themes and patterns. Quantitative researchers assign precise measurements to findings (Creswell, 2013), jettisoning subjects' verbalized or written perceptions. A narrative approach (Creswell, 2013) was not selected for this study because my focus was not to make interpretations or retell participants' stories from my personal perspective. My goal was to work through the process of assigning meaning to individuals' experiences (Merriam & Tisdell, 2016). Additionally, a case study approach (Creswell, 2013) would not have been appropriate for this study, as focusing on one individual's experiences would have limited the breadth of various perspectives and experiences received from the eight interviewed participates.

My rationale for selecting the basic interview study was to gain understanding of instructors' experiences. Through interviews I captured what Merriam and Tisdell (2016) called the "basic structure of their experience" (p. 26) as they transitioned to using the IC

approach. A rich understanding of instructors' voices was gained through semistructured interviews as the data collection process. This format allowed me to hone in on the individual's perceptions and pave the way for new ideas to emerge regarding the IC adoption process.

Role of the Researcher

My role as researcher for this interview study was to conduct two audio-recorded telephone interviews with eight higher education instructors, transcribe the interview recordings, and analyze their responses. Although I have taught a freshmen seminar course for 6 years, I have never taught any of my classes with IC methods. To identify potential participants, I access the Flipped Learning Community (FLC). FLC is a national professional learning community for educators who have adopted IC, an instructional method also referred to flipped classroom that provides the lecture component outside of the classroom using technological teaching tools such as audio/video formats, and includes homework and practice within the class time via interactive learning methods (Ivala et al., 2013).

I obtained cooperation from the group's organizer to solicit from a pool of approximately 240 members of the college-level flippers group. I did not have any personal or professional relationships with any of the members in FLC or its college-level flippers group.

Methodology

In this section, I explain the methodology of my interview study. Included are the procedures for participant selection, the instrumentation used, and the techniques for

recruitment, participation, and data collection. Additionally, I explain how I coded and analyzed the data, I describe the strategies used to ensure trustworthiness, and I outline the techniques used to ensure the research approach was ethically sound.

Participant Selection Logic

I selected a sample of eight higher education instructors who responded to my invitation from the FLC. I used the following criteria when selecting participants: (a) instructors identified themselves as full- or part-time teachers in higher education, (b) instructors indicated that they had adopted IC into their professional practice, and (c) instructors employed IC for at least a full academic year. Patton (2002) noted that saturation for a qualitative study is possible using one to 10 participants. Also, Patton indicated sample size should align with the ability to thoroughly describe the experiences. The interview approach promotes opportunities to obtain rich and in-depth responses from participants (Patton, 2002). Saturation is likely to occur when participants have reflective similarity of experience around similar themes and patterns (Patton, 2013). In my study, I interviewed the first eight individuals who responded to my invitation and met my selection criteria. With this sample size I was able to achieve data saturation in describing their decision-making processes and experiences in adopting of IC approaches in higher education.

Instrumentation

Data were collected using a researcher-created two-part interview protocol designed especially for this study (Appendix). The interview questions were designed using aspects of andragogy (Knowles, 1984), experiential learning (Kolb, 1984) and

diffusion of innovations (Rogers, 2003) to answer the research question. A modification of Seidman's (2013) three-stage phenomenological interview methodology was used to "explore the meaning of people's experiences" (p. 20). I developed the semistructured interview protocol in consultation with my committee members and guided by suggestions from an advanced research course. To allow for sufficient data collection, I designed open-ended questions with additional probes, as suggested by Seidman (2013), to capture the meaning assigned to individuals' experiences that led them to IC adoption.

Seidman's (2013) three-stage interview process focused on prior life history, details of the experience under investigation, and reflection on the meaning of the experience. Considering that professionals participating in this study would have busy schedules and would be unlikely to agree to three separate interviews, I adapted Seidman's three-stage interview process into two audio-recorded telephone interviews lasting approximately 60 minutes each. My protocol included 14 open-ended questions with accompanying probes. Questions related to the focused life history and details of the experience, as indicated by Seidman's first two stages, were asked in the initial interview. This initial interview consisted of questions expressed in a way as suggested by Seidman (2013) that encouraged participants to share as much as possible about their early life experiences that led to IC adoption and to incorporating this instructional method into their professional practice. Participants were also asked to provide detailed accounts of their experiences about the IC adoption process and practice.

In the second interview, participants were asked questions related to the meaning of their experiences with IC, as represented by Seidman's (2013) third-stage of the

interview process. I asked subjects to interpret and reflect on practices that led to transition from traditional lecture-based instruction to IC. I took field notes during both interviews. This journaling focused on what I was learning from the data collection process to increase my objectivity.

Recruitment, Participation, and Data Collection

I obtained cooperation from my community partner, the outreach coordinator of FLC, for access to the email list of participants in the college-level flippers group to explain the purpose of this study. After I received approval from Walden University IRB (# 06-15-16-0156992), I sent an email letter of invitation to members of the college-level flippers group. This letter included the purpose of the study and what constituted participation. I offered the first eight participants who participated in the initial and second round of interviews a $25.00 Amazon.com gift card as compensation for their time and to convey my appreciation. I selected the first eight individuals who expressed interest and met the three criteria for the study. I forwarded the consent form via email with the attached instruction, “By replying to this email, I am indicating that I have reviewed the attached consent form and agree to participate in the study.”

In the beginning of the first interview, I described the study, its purpose, the right of the participants to withdraw at any time, confidentiality, and transcript reviews. At the end of the first interview, I arranged an agreeable time for the second interview. Probes initiated in the initial and second interviews allowed participants to provide further reflection. I recorded each telephone or Skype interview using an Olympus voice-activated recorder. At the end of the second telephone interview, I informed the

participants when to expect an e-mail correspondence from me with copies of the transcripts for transcript review, final thoughts, lessons learned, or reflection. The transcript review strategy reduced researcher bias, gave participants the opportunity to change or add responses as desired, and increased validity of the results. When each participant completed the transcript review after the second interview, the Amazon gift card was sent.

Data Analysis Plan

Data analysis consisted of first cycle and second cycle coding without the assistance of coding software, as suggested by Miles et al. (2014). In first cycle coding, I assigned codes to data chunks summarizing internal and external factors reflecting IC adoption. Second cycle coding consisted of data chunked into themes to identify shared experiences of individuals who transitioned from lecture-based instruction to IC. I also scanned the transcripts for repetitive statements, words, and phrases. I then provided an in-depth description and outline of the experiences highlighting how and when the transition process occurred. Using the conceptual framework and the experiences, I synthesized the information and inferred meaning(s) from participants' experiences as they related to the decision-making process of IC adoption.

Issues of Trustworthiness

Trustworthiness, or validation as defined by Creswell (2013), is considered essential in qualitative research. I established trustworthiness by addressing credibility, transferability, dependability, and confirmability of the research process and data

analysis. As a researcher, it was my responsibility to demonstrate my approach to building and maintaining trustworthiness into the study.

Miles et al. (2014) indicated that gathering large amounts of data through the interview process enhances credibility and trustworthiness in a study. To capture accurate and detailed responses from individuals, as suggested by Merriam and Tisdell (2016), I incorporated the transcript review strategy to ensure credibility by asking individuals to read my initial transcription of the data to ensure I properly recorded their experiences. Merriam and Tisdell indicated that the process of collecting enough data to reach saturation is another strategy to increase credibility.

Merriam and Tisdell (2016) defined transferability as the ability to generalize findings of a study to similar situations. To enhance the possibility of transferability to another setting, I employed rich, thick descriptions to describe the settings and findings. I attempted to maximize variation by selecting participants from various institutions of higher learning who taught IC in different content areas. I provided a thick, rich description of the process instructors used to make sense of the IC adoption experience. Merriam and Tisdell (2016) stated that dependability occurs if the findings are consistent with the data. I enhanced dependability through maintaining an audit trail. Through the audit trail strategy, I journaled details of how data were collected, how categories were created, and how decisions were made during the examination process.

Confirmability or objectivity refers to the extent to which a study's findings are influenced by respondents or researcher bias (Lincoln & Guba, 1985). I kept a journal of written field notes to enhance my objectivity. Journaling focused on what I was learning

from the data collection process. I never employed IC in my professional practice, nor was I associated with any instructors who used IC.

Ethical Procedures

After receiving IRB approval from Walden University (approval number 06-15-16-0156992) to conduct the study, I followed specific actions to confirm that the study was guided with veracity. The first step in recruiting participants for this study was to email higher education instructors who are members of the FLC professional community—the college-level flippers group. This preliminary email delineated the purpose of the study, distinguished criteria for respondents, stipulated assurances of confidentiality for all participants, and requested that potential participants respond to the email. The eight individuals who responded first from this group represented higher education instructors with varying backgrounds who have adopted IC into their professional practice. Selected participants were contacted via email to arrange interviews. Participants were asked to sign an informed consent form for this study that included conceivable uses of the study, and the methodology to ensure confidentiality. Regarding confidentiality, the use of pseudonyms was used to represent the institutions where the participants teach and for the actual names of the participants for discussing the study and publishing results. Only the researcher has access to confidential information in the interview data. If any participant requested to withdraw from the study, data collected from interviews would have been destroyed and not included in the final results and discussion; however, all participants followed the process through to member checking. The process of how data would be archived was part of the informed consent.

Confidential information including the informed consent letters and interview notes are stored in a locked file accessible only by me and will be destroyed after five years.

Summary

This chapter included a description of the methodology used for this study. The participants for this study were eight higher education professionals who have adopted IC into their professional practice and have experience teaching IC. These participants were interviewed using a semi-structured interview approach with questions designed by the researcher. Follow-up included member checks of the data and interpretation. Trustworthiness of the data was established with the strategies of member checking and saturation. Ethical procedures to ensure institutional permissions, recruitment of participants, collection of data, confidentiality of data, and secure storage of data was followed according to Walden University's IFB procedures. Chapter 4 includes the results of the study.

Chapter 4: Results

The purpose of this qualitative study was to explore the decision-making processes and experiences of faculty that led them to adopt IC. I hoped to understand and describe this process of adoption through responses gleaned through interviewing faculty who taught in higher education using the IC method. Using the basic qualitative study design, my goal was to gain an understanding of the cognitive processes or circumstances that effected IC adoption among higher education instructors. The research question for this basic qualitative study was as follows: What were the decision-making processes and experiences that led higher education faculty to shift from using traditional teaching methods to adopting IC approaches?

Chapter 4 presents the results of this study. In this chapter, I describe the setting, participant demographics, and data collection procedures. Additionally, I describe the data analysis process by which I assigned codes to data chunks summarizing internal and external factors effecting IC adoption. I also provide a summary of the coding constructs using participants' interview responses to provide evidence for the findings. I discuss these findings in relation to the research question by analyzing the data for emergent themes and discrepancies. In addition, I describe strategies I used to improve the trustworthiness of this study.

Setting

As outlined in Chapter 3, each of the eight participants was interviewed over the telephone. Each participant was at the time of data collection employed as an instructor in higher education. Additionally, participants did not report any personal or organizational

circumstances that served to influence study results. Table 1 presents the participants' demographics and pseudonyms.

Table 1

Demographics of the Participants

Participants (Pseudonyms used)	Employment Status	Years Employed in Higher Education	Years IC Employed into Professional Practice	Degree Attainment
Caren	Full-time	3	2	PhD
Kim	Full-time	26	7	MA
Kyle	Full-time	29	18	PhD
Lola	Full-time	21	1.5	PhD
Joy	Full-time	16	1	PhD
Jon	Full-time	6	2	MA
Paxton	Full-time	57	46	PhD
Ruth	Full-time	10	2	MA

I selected a sample of eight higher education instructors who responded to my invitation. Five of the participants live in the United States, two live in Turkey, and one lives in the United Kingdom. Participants were college-level members of the FLC, and were selected using the following criteria: (a) instructors identified themselves as full- or part-time teachers in higher education, (b) instructors indicated that they have adopted IC into their professional practice, and (c) instructors employed IC for at least a full academic year. I had no problems scheduling two rounds of interviews for each participant. With the sample size of eight, I was able to find consistency in describing participants' decision-

making processes and experiences in adopting IC approaches. The participants averaged 21 years of teaching in higher education, and the average number of years employing IC was approximately 10. Five of the eight participants had earned doctorates. One of the doctorate holders serves as an IC director in a European-based university. The remaining three participants had attained master's degrees; one of the three was enrolled in doctoral program.

Data Collection

When Walden University's IRB approval (# 06-15-16-0156992) was obtained, the agreed upon number of participants that would encourage a collection of rich data for a basic qualitative interview study was 8. Each participant was interviewed twice with a different objective for each interview. Questions related to the focused life history and details of each participant's experiences that led to IC adoption and the process of incorporating this instructional method into professional practice. In the second interview, participants were asked questions related to the meaning of their experiences with IC.

The data collection process proceeded as described in Chapter 3 with no variation in the planned approach. I emailed the invitation to participate to members of the Flipped Learning Community's college-level flippers division in June 2016. The first eight individuals who expressed interest and met the three criteria for the selection were selected. Their immediate response to my email invitation may have been the result of all having attended the same international conference where I had presented my proposed research earlier that month. Through email with the participants selected, I set up the first

interviews either by phone or SKYPE, recorded, transcribed, and returned the transcriptions for their review before setting up the second interviews. The same process was repeated for the second interviews. No more than a week transpired before the first and second interviews between late June and August, 2016. There were no unusual circumstances that occurred during data collection despite the geographic distance between me and each of them, particularly the three international participants.

Data Analysis

The data analysis plan for this study consisted of first cycle and second cycle coding without the assistance of coding software, as suggested by Miles et al. (2014). In the first cycle coding, I used NVivo coding to assign codes to internal and external factors reflecting IC adoption. Using Miles et al.'s (2014) approach to coding, I color-coded themes and subthemes for each transcript and placed them in a table according to their relationship to the research question. The themes and subthemes where color-coded to highlight similar patterns. For example, when participants described similar decision-making processes and experiences that resulted in IC adoption, they were subcoded as *faculty satisfaction* with the overall theme code as *change agent*.

Four major themes and seven subthemes emerged from the study. The themes were *student focus*, *support*, *change agent*, and *need to dialogue*. The first two subthemes, *active learning* and *learning differences*, were related to *student focus*. The subthemes *administrative*, *professional development*, and *strong technology relationship* were related to the *support* theme. The subthemes *promoters of IC* and *faculty satisfaction were* related to *change agent*. Table 2 presents the themes and subthemes.

Table 2

Themes and Subthemes

Themes	StudentFocus	Support	Change Agent	Need to Dialogue
Subthemes	Active learning	Administrative	Promoters of IC	
	Learning differences	Professional development	Faculty satisfaction	
		Strong technology relationship		

Evidence of Trustworthiness

Trustworthiness, or validation as defined by Creswell (2013), is considered essential in qualitative research. I established trustworthiness in my study by addressing credibility, transferability, dependability, and confirmability of the research process and data analysis. As a researcher, it was my responsibility to demonstrate my approach to building and maintaining trustworthiness in the study.

Miles et al. (2014) indicated that gathering large amounts of data through the interview process enhances credibility and trustworthiness in a study. To capture accurate and detailed responses from individuals, as suggested by Merriam and Tisdell (2016), I incorporated the transcript review strategy by asking individuals to read my initial transcription of the data to ensure I properly understood their experiences and how I was interpreting them. Merriam and Tisdell also indicated that the process of collecting enough data to reach saturation can increase credibility.

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Confirmability or objectivity relates to the extent to which a study's findings are influenced by respondents' or researcher bias (Lincoln & Guba, 1985). I kept a journal of written field notes to enhance my objectivity. Since I had not employed IC in my professional practice nor was I associated with any instructors who use IC, this journaling focused on what I was learning from the data collection process to increase my objectivity.

Results

Research Question: What were the decision-making processes and experiences that led higher education faculty to shift from using traditional teaching methods to adopting IC approaches? Eight higher education instructors participated in the study. One female and one male were instructors at a university that has a fully flipped curriculum. The other six instructors, four females and two males, taught IC at other universities.

Pseudonyms were used for all eight participants. Four major themes emerged during analysis of the data: *student focus*, *support*, *change agent*, and *need to dialogue*. I also identified seven subthemes associated with three of the main themes..

Personal Missions

All participants voiced a personal mission to advocate for their students to have a deeper understanding of the course content and connect this understanding with lifelong learning and day-to-day activities outside of the classroom. The participants communicated that lecture-based instructional methods supported rote memorization and did not necessarily capture the nuances associated with the subject matter. Additionally, all of the participants agreed that the active learning component of IC instruction filled their classrooms with an anticipated excitement to learn and student engagement. This response was in contrast to how participants stated their students responded to lecture-based instruction, in which learners assume a more passive role in the learning process. Joy reported that "when students start telling me they are Power Pointed out there is a problem. We [instructors] have adopted lecture methods in higher education, but the students hate it. They are forced to assume a passive learning roll."

Kyle, a finance instructor, has taught with IC methods for 18 years. He uses IC to teach his students how to create and use Microsoft Excel spreadsheets. Kyle reported that Microsoft Excel spreadsheets are used in practice, and students need to be proficient in using this tool to be marketable when looking for employment. Paxton, who has incorporated IC into his professional practice for 46 years, was inspired to move from traditional lecture methods to an innovative instructioal method to address the student

dropout rate in his math courses. Paxton attributed increased student attendance and increased levels of student engagement in his course to converting and delivering his course through IC instructionl methods.

An objective for Caren and Kim was to prepare future teachers to be equipped before they engage in the work world. Caren, the director of a totally flipped university, communicated fake assessments do not communicate real experiences teachers will encounter. She commented, “I want everything they [students] do to reflect something they will do later [in their careers].” Kim also wanted her students to get a realistic account of what teaching was like. According to Kim, IC proved to be an excellent vehicle to create authentic day-to-day activities in the classroom to prepare students for their role as a teacher. For example, Caren and Kim involved their learners in role-playing activities such as taking turns acting as principals or parents, and modeling how teachers should respond to frequently encountered issues.

Jon and Ruth communicated that they witnessed their students’ loss of interest in the topic matter during class time, and learners did not complete homework assignments that prepared them for class. Responding to students’ negative comments regarding the lecture-based design, Jon adopted IC to increase student motivation. Ruth’s interest was in communicating the value of her students coming to class prepared. She stated “I wanted to find a way to encourage students to delve into the material ahead of time and get them to appreciate the value of the materials.”

Student Focus

The theme that emerged from the questions regarding student focus indicated that all eight participants had a desire to deliver their lessons in an instructional method that would keep learners engaged during in-class sessions and prepare them for the workforce after college. The subthemes *active learning* and *learning differences* were identified in the student focus theme. Caren, a teacher trainer, described a desire to adopt IC because this instructional method was instrumental in assisting her to design authentic activities that communicated the role of a teacher to her students. During the active learning component of IC, which takes place in the classroom, her students participated in role-playing activities. They took turns assuming the roles of parents and school principal. She stated "I want everything they do [to] reflect something they will do later [in their teaching careers]."

Jon adopted IC to increase student engagement:

> My motivation to do it [flip my course] actually came from my students. They were really unhappy with the course as originally constituted. So it's basically getting feedback and seeing that I was losing my students [and watching them] lose their motivation…that kind of forced me to flip.

Jon expressed another reason, his personal struggle with dyslexia, for adopting an innovative instructional method:

> I am horribly dyslexic. I have always learned by my own pace. The idea of having a learning environment where obviously not all students are the same was appealing to me. Before when I was teaching, I always kind of felt bad that I had

> groups of students that I felt like I was leaving behind. As a learner I felt like well "that's lame" because I would have probably been these students. So I think my own struggles with education made it seem like a good system to adopt.

Joy adopted IC because she wanted her students to take charge of their learning. She stated "it's about getting students interactive in the learning [process] and negotiating their learning beyond what the lecture would give them. The desire for flipped learning was evident in student surveys." She was also a proponent of using IC to assist with accommodating her students who have learning differences:

> But I think also it [IC] enables you to meet the needs of your audience partially in relation to people with learning differences - for example dyslexia. [When you incorporate IC] you can consider your audience's needs. Whereas with lecture style of delivery, there is no ability to address different needs.

Kim, a teacher trainer, indicated IC was instrumental in communicating to her students an authentic understanding of the role of a classroom teacher through active learning:

> I wanted them to get a realistic view of what it was. They also had this idealist view of what their classroom would be like and how responsive their students would be…they painted in their minds a very rosy picture. I wanted them to think about the reality of what things are really like. That's when I started thinking about how I could include authentic activities for them so that they really had an understanding of what was really going on…not so unnatural, but more real.

Kim also stated her students in her ESL course have varied learning differences. Her learners demonstrate understanding of material with the assistance of subject-related videos:

> I flipped an ESL course. The students in this course listen to, watch, or explore as much as they need to about a topic. We listened to a lot of TED talks because they get a chance to hear other people speak. Sometimes the nuisances of people's voices or nonverbal communication are very different for them to understand. [The ability to review videos] takes the anxiety out of learning because they can hear the video more than once, they can stop and back up, and listen again to specific parts. For students who are not second language learners, videos enable them to work at their own pace and view them at times they are more convenient for them. Videos facilitate learning for both types of students.

Other participants affirmed their declaration of promoting student-focus instruction. Kyle stated his students found flipped learning beneficial after graduation. He mentioned, "I have received emails from students who are now in the work world. They communicate they have used the material I taught in the [flipped] way. [IC] resonates with students." Lola also affirmed the benefit of active learning. She stated, "I believe the discussion and participation in the classroom is a much more effective way of working than memorizing and lecturing." Ruth wanted her students to gain an understanding of the course material before they came to class so they could fully participate in classroom activities:

> Students weren't really participating. They weren't doing the reading and that sort of thing. I wanted to find a way to number one encourage students to do the work ahead of time. To get them to appreciate the value of the materials that I wanted them to review and to delve into before class. So I figured, inverting the classroom would serve as an incentive or motivation for them to really dig in before class so that when they got to class it could be a more dynamic and engaging experience that would make the learning experience more meaningful.

All of the participants agreed that lecture-based instruction was not giving students a realistic understanding or the hands-on training needed to have a confident working knowledge of what is required of them in the workforce. Through their own experiences, participants voiced an internal resolve to shift from familiar lecture-based instruction to an approach more resonate with their learner's needs. For the instructors, the methodologies used to advance student-focused instruction promoted learners to be seekers of information in contrast to being passive recipients of knowledge. Low student participation and the testimony of a subject who mentioned being dyslexic prompted the decision to provide instruction in ways to better engage an audience of learners who have varying learning differences.

Support

The support system the participants experienced was the second major theme and a major catalyst for a smooth transition from lecture-based instruction to IC. The theme of support emerged from the responses from the questions regarding types of support instructors received before making the decision to adopt: during curriculum redesign

from the original standardized lesson objectives and student outcomes to aims and results that closely aligned with IC instruction, or continued support from administration, participant's colleagues, and their universities' technology departments. The sources of that support were found in the subthemes: *administrative*, *professional development*, and *strong technology relationship*. Responses for administrative support articulated into two views: pre and post adoption of IC.

Caren, who never flipped a course before being hired as a director, shared she was hired as a director to lead and train instructors on how to flip a course. She communicated that her university rector hired her because of her over 15 years' experience serving as an educator. The rector supported Caren's decision to enroll in an on-line instructional design course with the goal of becoming acclimated with IC and to become equipped to train instructors at the flipped university:

> I was told to do my job, [director of a university that has a major focus on flipped learning] because of my extensive background in teaching. One of the first things I did when I became the director was to enroll in an on-line master's in technology and learning design program. That was the best thing I could have done because I could experience online learning through a student's eyes.

Caren also created extensive professional development training to assist with IC the IC adoption process:

> I designed support for the professors: I created an on-line course for all the professors in the style of a flipped learning course, I created a handbook, "Best Practices for Flipped Learning", I ran voluntary workshops, I wrote a newsletter

> for a year and then switched to social media…I set up a Facebook page, I have just written a book on the stages different faculty go through in the flipping process, and I created mentorship programs – pairing newer faculty with older faculty.

Additionally, Caren stated her university provided funding for all professors to attend one international and one national conference per year. She and a colleague spearheaded the framework for a strong technological support system for the flipped instruction and classroom design conducive to IC:

> Regarding technological and physical infrastructure, a colleague and I formed a committee to search for a learning management system to host the videos. We went with Blackboard because it hit most of the needs that we had. Then we searched for apps to assist with creating videos. The university built a recording studio, which served as the infrastructure. Classroom structure consisted of: a podium in the middle with five tables stemming from it with six seats for students at each table. Additionally, all the walls are covered with magic paint (whiteboard markers are used to write on these erasable walls) assisted in creating a student-centered environment.

Caren serves as Jon's director at the flipped university. It was valuable to have gained insight through the interview process from the perspectives of Caren who was responsible for developing an IC instructional template and instruction for instructors to follow and from Jon an employee who appeared to have benefited from her training. Jon was a direct beneficially of the professional development opportunities Caren created for

her staff. He expressed gratitude for the administrative support offered by Caren that encouraged him to think outside the box when considering IC methods for flipping the course he teaches:

> At my university there is a Center for Excellence and Learning and Teaching. Caren has been the guru. I think her greatest value is not so much that she is trying to bring us new research, but rather she can be a sounding board for new ideas. She'll walk me through the pros and cons [of a new idea] allowing me t experiment with her before I take the idea to my class. I think without that I would not have success with the flip.

Instruction and encouragement from Caren to Jon empowered him to lead and train the faculty who teach in his department. He stated, "I am responsible for a large group of instructors who teach the same class. I am responsible for standardizing."

Joy also received administrative support to flip her course. Her support came from an external resource:

> As a springboard to the new [flipped] curriculum, we had a learning technologist for a year that built a (technology based) platform. Part of her role was to work with redeveloping groups and providing one-to-one training and this has been continued. To have the support of the learning technologists has made a huge difference. Now we have teachers who are teaching teachers.

Additionally, Joy stated the instruction and positive results with IC got the attention of her university's administration:

> There is defiantly an interest. [Flipping the classroom has] gotten the attention of the vice chancellor of teaching and learning who is very keen to get more innovative teaching methodologies across the whole university as it tends to be more traditional [deferring to lecture-style teaching methods]. I think the word is getting out.

The president at Kim's community college has bought into the innovative-based paradigm shift–transitioning from lecture-based instruction to IC. Kim affirmed that, "The community college where I teach is considered [by the college's president] as innovative. There is support for what I am doing as I have received a two-year $20,000.00 grant from my college to transition from lecture-type teaching methods." Though Kim has been proactive in fielding positive responses received from her colleagues and has done several professional development presentations on IC for faculty, she expressed feeling like a "lone ranger" sometimes because she is the only instructor using IC at her community college. She also stated she wish she had a mentor.

Kyle received support to use IC from his dean and department head. He communicated his dean was influential in obtaining funding to support the IC initiative at his university. He stated, "The dean was instrumental in obtaining funding to install two computer classrooms in our college so flipped instructed courses would not take up computer lab resources." Further, his department head was impressed with positive student assessments and results from a student survey after taking Kyle's finance course. Kyle articulated, "My class has been an elective for many years. My department has recently made [the IC version of] my course a required course for majors." He also stated

the teaching academy on his campus has hosted several professional development workshops on IC, where he has shared his IC experiences.

Lola attended professional development sessions on IC instruction conducted on her campus. She stated, "Our institution developed the Flipped Learning Academy and provided support for faculty members to take [courses] in the academy by paying for a course release."

With the support of the administrators at her university Ruth was encouraged to try IC:

> My chair has been extremely supportive. She has really given me the green light to be as innovative as I would like to be and that's been really great. We have a person who serves as assistant dean of student innovations. She is great in terms of supporting the use of iPads in the classroom and supporting the student use of iPads outside of the institution.

Additionally, Ruth explained her institution did not offer professional development training on flipping; however, she received strong technological support if she needed assistance with course creation or implementation.

As seen in the data, administrative, professional development, and strong technological supports were in place in some institutions before some faculty members adopted IC. There was also strong administrative IC buy-in after a faculty member sought out, adopted, and then introduced the teaching method to his or her superiors. Student success was communicated through student attendance, optimistic assessments, and positive student surveys after they completed an IC course. Moreover, strong technology

relationships between instructors and IT departments encouraged participants to explore IC. This relationship offered reassurance that faculty would receive technological support as they methodically worked through kinks associated with rolling out a transition from lecture based instruction to the new course design.

What I found interesting for Caren, Joy, and Ruth was a desire to examine IC that was kindled and further stimulated during the course of pursuing on-line post-graduate degrees. Caren who was pursuing a master's in technology and learning design degree expressed, "[Becoming an on-line learner] was the best thing I could have done because I could experience on-line learning through a student's eyes." Joy, a seasoned on-line learner, reported, " There is this idea of being engaged and challenged in different ways in lieu of being a passive learner who sits in a lecture theater." The idea of an active learning environment coupled with innovative instruction that engaged faculty who are responsive to technology-inspired instruction resonated with their desire to create this same positive learning environment for their students.

Change Agent

The *change agent* theme was illustrated in how the participants communicated why they adopted IC, what lead up to final adoption, what they encountered after adoption, and the success stories of students. This was coupled with favorable assessment outcomes and the goal of communicating this information to inspire other faculty to explore IC. The subtheme of *promoters of IC* refers to participant's zeal in championing IC for their colleagues and administrative superiors via professional development workshops not only internally at their institutions but also externally around the United

States and abroad. Some of the participants undertook the opportunity to address colleague's curiosities regarding IC.

Faculty satisfaction was the second subtheme under *change agent* that emerged from the interview responses. Participants communicated that using IC methods satisfied an inner drive to infuse their own brand of creativity into their professional practice. They expressed being empowered by going beyond information supplied in textbooks, which often housed outdated information, and embraced the flexibility provided by IC to include supplementary information gleaned from Internet searches, videos, and course-specific ideas from individuals who had already flipped their courses.

The majority of the participants, Caren, Kathy, Kyle, Paxton, and Ruth, were the first instructors at their institutions whose initiative to examine IC led to eventual adoption. Once they redesigned and rolled out their reconstructed courses, curious faculty members were inspired by the participants' positive feedback received from converting to IC and were inspired to reach out to them to engage in sidebar conversations about the newly introduced instructional method. Kim stated, "I have received positive responses from colleagues especially members in my department. My colleagues are very grateful and trying some of the [IC] techniques out." Kyle shared that his colleagues recognized the importance of his redesigned finance course and the understanding evidenced in the students. Additionally, Kyle's faculty in his department recommended students take his IC course.

The subtheme, *promoters of IC*, was communicated in two ways: within the participant's institution and outside of these institutions. Caren, Jon, and Kim served as

resident sources of support that provided professional development for their colleagues on an ongoing basis. Serving as the newly appointed director of a flipped university, Caren was the sole support for in-house training. The breadth of training Caren offered her instructors was included under the *support* theme. Jon, who worked with Caren as an instructor at the flipped university, was responsible for standardizing materials and in-class activities for instructors who teach in his department. Both Joy and Kyle participated in discussion groups and collaborated ideas regarding IC instruction with instructors outside their departments within their institutions. Such venues allowed for the prompting of new ideas and dissemination of information to individuals new to the IC concept. I considered the individuals mentioned above internal promoters of change because they chose to advocate change within and outside of their departments by sharing their ideas, experiences, and served as sounding boards; thus, promoting IC within the confides of their universities.

Caren and Paxton served as change agents positioning themselves as external promoters of change for individuals and organizations outside of their institutions. Caren created two resources: a handbook crafted when she assumed her role as director and more recently a book. Caren compiled best practices of flipped learning handbook. This resource, dubbed as "Flipped 101" by Caren, was a compilation of data resulting from research and recommendations that came out of focus groups. She has also written a book on the story of how the first totally flipped university got started. She shared this about her contribution: "I would like the professors at my university to read it to get an idea of everything that is there…to understand the stages different faculty go through [after

making the decision to adopt IC].” Both publications would be an asset to administrators and faculty who may be on the fence about IC exploration or adoption.

Paxton learned through a colleague that individuals studying in several west coast based police academies were not scoring well in their criminal law courses. To increase test scores, he and a mentor were commissioned by the state to redesign the traditional-based curriculum for the instructors and align it with IC methods. He reported, “[Converting to the course to IC] eliminated the academic failures in criminal law courses in 85 of the 105 California police academies.” Moreover, Paxton further promoted IC by serving as a change agent for instructors who teach law enforcement courses by conducting free IC training on the west coast for seven years on how to transition from traditional teaching methods to IC. He communicated, “Once [instructors] spent a few hours with my materials and my book, they used it in their classes.”

In the *faculty satisfaction* subtheme, four participants articulated how IC instruction fulfilled an inner drive to disturb traditional instructional methods based on rote learning that often produced a lack of fulfillment for these instructors, and quickened their desire to reshape their teaching style by exploring one that excited them about their craft. Caren expressed:

> Two and a half years ago, I didn’t know what flipped learning was. I thought it was another active learning buzzword. Through teaching in this way, I love it. I totally, totally believe in it. It’s not just jumping through hoops. I am a total convert. I was told to do it despite my pre-negative thoughts but through

> experience I now prefer flipped instruction. I would definitely teach in this way if I weren't in a flipped institution.

Jon and Joy, confirmed researchers at heart, expressed they enjoyed enriching the fundamental course material as they believed additional information added value to their lessons. Joy interjected, "[IC] gives me more confidence in widening the different materials I can use…a whole range of things I can use on the Internet [to aid in the teaching experience]." Kim concluded she learned about how she learns through teaching IC:

> Through learning how to flip my class, I was informed about my own learning. I have learned much from students because I'm not limited to what I want to tell them and letting them know what I think is important. [IC] has gotten me excited about teaching and learning.

The data indicated that the participants saw a connection between adopting and employing IC and their own personal gratification. Personal gratification served as a springboard to tell others about individual successes with IC. Ongoing professional development opportunities hosted at the instructor's institutions or conducted at other sites have kept them inspired and connected to other flippers. In June of this year, all of the subjects attended a flipped learning conference held at a mid-western university. At this venue, instructors were given a platform to present and receive best practices for transitioning from lecture-based instruction to IC and ways to augment curriculum. All of my participants presented a workshop at this symposium.

Need to Dialogue

The *need to dialogue* theme was illustrated by participants' voicing a need to talk about their IC experiences and challenges in flipping their courses. Sounding boards ranged from colleagues within the same department and in differing content areas, to mentors and administrative personnel. Considering Jon worked at a totally flipped university, he found hearing what his colleagues were doing helped him to hone his teaching craft:

> I am in an environment where people are constantly talking about how to be better teachers. The conversation is not specifically directed at me, but to be in an environment where people are exploring different ways to be good teachers helps me with what am I doing to be a better teacher.

Additionally, he communicated there were many hours devoted to colleagues discussing methods of flipping when they initially came on board to teach. Jon also drew knowledge and support from instructors who worked as co-teachers within his department. He mentioned:

> In the class I work with a bunch of people who are also designing flipped classroom design and content. So, we are more or less speaking the same language. It's more about taking all of our different ideas, experiences, and collectively creating curriculum and content.

Kyle, who also worked alongside a colleague to teach his course, mentioned he was grateful for the support he received, "We were able to talk about what we were doing." After she decided to adopt IC, Joy stated she met with a team of lecturers. They

spent time talking about the big picture – how to reshape objectives for the students in the midwifery department.

Kim stated her decision to use IC resulted from being able to "talk things through and hear other people's points of view." She also found sharing IC methods with a mentor who knew nothing about IC beneficial:

> I had a mentor I was working with who didn't understand the inverted classroom concept. Believe it or not, this was helpful to me because she kept asking me why I had chosen to flip. [Her inquisitiveness gave me the opportunity to talk out why I had chosen to flip.] It was helpful for me to be able to mentally process my ideas through our conversations.

Lola stated the instructors in the Flipped Learning Academy, the training facility on her campus, shared IC techniques they used in their classrooms on a regular basis.

All of the participants affirmed the ability to test their ideas, receive suggestions, and collaborate with the technology departments in their institutions made the inquiry and transition process associated with IC methods palatable. Fervent communication between instructor and technologist was successful in bringing creative innovative teaching ideas to fruition. This strong relationship appeared to serve as a catalyst for creating a level of comfort and acceptance associated with adopting a new instructional method into one's professional practice. Joy stated, "We had the support of the learning technologists to support what we were trying to do." Ruth commented, "The IT department has been very supportive in terms of helping problem solve and brainstorm ways to best use the technology in the classroom."

Summary

In Chapter 4, I addressed the research question though detailed descriptions and examination of the data collected. The results were based on the perspectives of eight participants who adopted IC into their professional practice. *Student-focus* was one theme observed in the data. The majority of the participants, including an individual who shared he was dyslexic, stated IC was a better-suited instructional method to teach students who have learning differences than traditional teaching methods. All of the participants agreed the active learning component of IC engaged their learners and brought energy and excitement for learning into a previous monotonous classroom environment.

Another theme that emerged in the data was *support*. Participants communicated support was demonstrated in three areas: *administrative*, *professional development*, and in a *strong technology relationship*. Three participants introduced IC to their institution's administrators and communicated their desire to convert their courses to this method. Administrators in the remaining universities represented in this study initiated, nurtured, and were receptive to innovativeness in education. Thus, they encouraged instructors to explore non-traditional teaching methods. *Professional development* sessions offered a venue for reaching out for help if the subjects got stuck during the curriculum development phase and to amass new IC approaches. Strong technological support was very effective when instructors needed suggestions shaping the infrastructure of a course. Participants received guidance on tasks such as selecting an effective learning management system. Also, technical departments were instrumental in overseeing resources in video libraries that supplemented IC instruction.

The third theme noted was *change agent*. The data in this theme communicated the active learning element, the ability to supplement textbook material, and the freedom to be creative with reshaping course design appealed to participants' learning styles and desire to infuse their signature of instruction into their lessons. *Faculty satisfaction* realized through IC adoption energized and reinvigorated them to teach with fervor after having adopted traditional teaching methods for many years. Such momentums lead to participants becoming *promoters of IC*.

The final theme was *need to dialogue*. Participants found talking about flipping their courses an invaluable tool. Before the roll out of a flipped course, participants talked extensively with their university's technology teams for structure and guidance. After adopting IC, participants found talking about flipping to colleagues or mentors useful when resolving a tough patch that surfaced in a course redesign or to simply exchange new ideas. Chapter 5 will include a discussion of the data and how these findings extend the knowledge of IC adoption in higher education.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative study was to explore how eight higher education instructors described their decision-making processes and experiences that led them to adopt IC. The eight participants identified themselves as full- or part-time instructors in higher education who adopted IC in their professional practice and had employed IC for at least a full academic year. The goal of this study was to gain an understanding of the cognitive processes or circumstances that effect IC adoption among higher education instructors. Using the constructs of adult learning theory (Knowles, 1984), experiential learning theory (Kolb, 1984), and diffusion of innovations theory (Rogers, 2003), I analyzed instructors' decision-making processes and experiences of IC adoption to infer meaning and to understand how the transition process occurred.

Summary of Key Findings

The first key finding was that participants were self-starters; they were eager to move from familiar lecture-based instruction to explore an unfamiliar innovative instructional method. Five of the participants explored IC on their own, introduced IC to their perspective administrators, and adopted IC in their professional practice. In relation to diffusion of innovations theory (Rogers, 2003), this group of individuals was labeled innovators because they were confident in stepping outside of their peer networks to consider a new instructional method with no guarantee the innovation would be helpful. The remaining three participants, referred to as early adopters, were inspired to adopt IC via the success of a colleague who had adopted it.

A second key finding was the need for participants to obtain support and resources needed to facilitate the transition process from their institution's administrators. Reshaping the infrastructure of classroom spaces, creating IC-designated classroom designs that encourage student engagement, and providing funds to promote ongoing professional development invigorated participants' momentum during the adoption transition process. Equally important was the need for participants to talk to colleagues about transiting to IC before, during, and after the adoption was rolled out at their institutions (Kolb, 1984). This relationship-building process, which kindled conversations with participants and their administrators and colleagues, resulted in eventual IC adoption. Strong communication was a must as participants needed guidance and support during course design, maintenance of the newly constructed course, and to address any malfunctions. All participants agreed that lecture-based instruction was not successful in engaging and facilitating deeper learning in their students (Bligh, 2000). A principle of andragogy (Knowles, 1984) is that learners are intrinsically driven to acquire information to solve problems. Learning about an instructional method that enhanced student engagement and promoted deeper learning aroused curiosity among the participants.

The third finding was the importance of ongoing IC training for support, to gain insights and success stories from other instructors, and to promote buy-in for faculty who had not adopted IC. This finding aligns with adult learning principle (Knowles, 1984) that adults are interested in learning subjects that have immediate relevance and impact to their job. The data indicated individuals willing to probe IC who were enthusiastic about the potential positive impact of a new teaching method; they were not apprehensive in

exploring it. Additional findings indicated the sharing of instructors' trial-and-error experiences employing IC in their professional practices coupled with ongoing professional development opportunities to increase confidence in using IC, expand individuals' knowledge base, and promote conversations with colleagues who were not flipping their courses.

Interpretation of the Findings

The research question guiding this study was the following: What were the decision-making processes and experiences that led higher education faculty to shift from using traditional teaching methods to adopting IC approaches? To answer this question, I analyzed data through the conceptual lens of adult learning (Knowles, 1984), experiential learning (Kolb, 1984), and diffusion of innovations (Rogers, 2003). My analysis of the data revealed that, related to adult learning principles, individuals need to assign relevancy and applicability to new information they receive. The motivation to learn is intrinsically based in a person's need to acquire information to solve problems. These were common perceptions noted throughout instructors' statements. My analysis revealed that the successful transference of new information through IC adoption was accomplished through the four modes of experiential learning (Kolb, 1984): concrete experience, reflective observation, abstract conceptualization, and active experimentation. With regard to Rogers's (2003) adoption categories (innovators, early adopters, early majority, late majority, and laggards), my analysis revealed that five participants were innovators and three were early adopters.

Adult Learning Interpretations

The andragogy theory includes six core adult learning principles (Knowles, 1984). The tenets of andragogy are learners (a) need to assign relevancy and applicability to new information they receive, (b) have a self-directing concept of self that steers them to decision-making and goal setting tasks, (c) analyze and attach meaning to the breadth of their life experiences and to assist in processing new knowledge, (d) perceive acquisition of knowledge as a stepping-stone to increasing their life potential and as a tool to effectively cope with real-life issues, (e) are life centered and view education as an instrument to increase self-competence, and (f) are intrinsically motivated to acquire information to problem solve or assist in enhancing their quality of life (Knowles, 1980, 1984, Knowles et al.,2005). The most prominent principles participants identified with were the need to assign relevancy and applicability to new information and their intrinsic motivation to learn.

Though lecturing is the most widely used instructional method in higher education, all participants agreed this approach does not inspire active learning or promote deeper learning in classroom settings (Bligh, 2000; McCarthy & Anderson, 2000). Participants identified IC as a viable alternative to lecture-based methods. This discovery connected with the need for individuals to assign relevancy and applicability to a new teaching method for their professional practice.

Not only was there a distinct need for individuals to assign relevancy and applicability to newly received information, they also possessed an inherent drive to search for resources that would be effective in problem solving. All of the participants

were taught how to communicate content to their learners via lecture methods. While teaching in that way, the participants observed commonplace behaviors from their learners that included anemic attendance, not completing homework assignments before coming to class, and low class participation. To combat these problems, the participants were receptive to the idea of exploring IC, which proved to be an effective teaching method. The subsequent adoption of IC, an instructional method that encourages active learning and enhances student engagement, appeared to be the solution for the classroom problems listed above (Ivala et al., 2013).

Experiential Learning Interpretations

The principle that a student's experiences play a major role in the processing of new knowledge aligns with the tenants of adult learning and experiential learning (Knowles, 1984; Kolb, 1984). According to Kolb (1984), effective learning and the transference of new information takes place when an individual encounters and progresses through four modes of learning: concrete experience, reflective observation, abstract conceptualization, and active experimentation. The hands-on collaborative and reflective learning experiences associated with experiential learning were demonstrated through participant's responses in the subthemes *active learning*, *prompters of IC*, and *faculty satisfaction*, and also through the theme *need to dialogue*.

All of the participants wanted their students to experience a deeper understanding of the course material. They reported that lectured-based instructional methods promoted rote memorization where students assumed a passive role in learning. Using IC methods, the participants agreed that the active learning filled their classrooms with welcomed

energy and excitement to learn. Learners' excitement elicited a high level of personal satisfaction for participants. Participants used students' positive reflections and favorable assessment outcomes to inspire colleagues and administrators through professional development sessions at their institutions.

Not only were participants receptive to what Kolb (1984) referred to as hands-on or active learning, this instructional method provided them with satisfaction infusing their brand of creative teaching into their professional practice. The flexibility of supplementing standardized course materials with updated content gleaned from the Internet or current research reinvigorated participants' joy for teaching. Participants were delighted to find an effective teaching method that enabled them to hone their teaching craft and promoted student satisfaction. Participants were more than willing to share their experience of IC adoption with colleagues who were apprehensive about IC use. The need to dialogue regarding experiences and challenges associated with flipping their courses was satisfied in one-on-one or group think tanks in which flipped learning techniques were shared and used for refining current courses or designing future courses.

Diffusion of Innovations Interpretations

Rogers (2003) classified the categories associated with the adoption of an innovation, including innovators, early adopters, early majority, late majority, and laggards. The data from my study indicated the prevailing adopter categories were innovators and early adopters. There was no evidence of early majority, late majority, or laggards in the data.

The administrators of participants' referenced were classified as innovators because they introduced and disseminated awareness of IC at their institutions. Though there was a possibility IC would not be adopted, administrators for the participants moved forward toward the goal of exploring an instructional method that could increase student engagement, retention rates, and assessment outcomes. Caren, one participant, had never used IC before becoming the director of a totally flipped university can be considered an early adopter. She was required by her administrator to examine and learn IC methods so she would be able to create materials to support her faculty.

The remaining seven participants were also categorized as both early adopters and early majority. They can be considered early adopters because their colleagues sought their advice when considering IC adoption, they served as sounding boards when participants wanted to try a new idea in the classroom, or they served as a wellspring of knowledge when faculty needed new ideas to manage their content areas. Many of these participants were the first in their institutions to adopt IC, and eventually they served as catalysts who influenced other colleagues to consider or adopt IC. This discovery aligned with Rogers's (2003) principle that in a group dynamic, leadership shows their stamp of approval of an idea by adopting it.

All eight participants were also categorized as early majority because they were the change agents in their institutions to transition from traditional lecture methods to IC. These individuals were responsible for creating relationships with fellow flippers via one-on-one encounters or small group sessions, inside or outside their institutions, for the purpose of encouraging one another through the challenges of flipping a course and to

exchange ideas. It was interesting that these small group encounters included faculty who were representative of diverse content areas outside of the early majority's department.

Current Research

In my literature review, I covered the topics of (a) institutional responses to IC, (b) attributes of the IC method for adults in higher education, and (c) faculty use of IC. The findings of my study supported current research and also extended the knowledge base regarding the decision-making processes and experiences of faculty that led them to adopt IC.

Institutional responses to IC. Research indicated a need for institutions to provide ways of appealing to, retaining, and enhancing the quality of education for adult learners (Fulton, 2012; Ivala et al., 2013; Ullman, 2013). Equally important was the need to provide faculty training to meet the needs of learners. Researchers concluded that technology-based innovations in the classroom that enhance student motivation and reduce attrition rates should compel universities to implement instructional and enrichment opportunities to effectively engage adult learners (Berry & Paulo Kushnir, 2013; Edwards et al., 2014). Universities are expected to train faculty on student-centered instruction (Edwards et al., 2014). To effectively assist adult learners, university administrators should develop activities to orient and train faculty in using innovative instructive practices (See & Conry, 2014). Data from my study indicated that IC is a proven and successful innovative instructional method for adult learners. Moreover, employing IC enhanced participants' personal satisfaction in their teaching careers.

My study findings also supported Edwards et al.'s (2014) claim that employing IC methods in the classroom has the potential of engaging and retaining students in higher education. All of the participants stated using IC resulted in positive change in their classrooms in regards to student retention, engagement, and promoting deeper learning. Not only was IC an effective teaching method for their professional practice, the new knowledge garnered from this study was all the participants experienced personal satisfaction. IC tenets encouraged practitioners to infuse their brand of creativity in the classroom, to use media resources to enhance material covered in textbooks, and to include role playing activities that served to offer learners a preview of day-to-day circumstances that will occur in their future employment. This discovery extended the knowledge base confirming IC is beneficial not only for classroom instruction but also for faculty as well.

In the literature review also I concluded IC instruction has been proven a useful instructional method to engage students in K-12 settings (Bergmann & Sams, 2012; Fulton, 2013; Roehl et al., 2013; Siegle, 2014; Schaffhauser, 2013); however, there remained a limited response in incorporating this instructional method on the university level (Hemphill, 2013; Lane-Kelso, 2015). Slow momentum for IC adoption was also confirmed in my study as well. Though five participants disclosed their colleagues were curious to hear about their results using IC, the momentum for exploration and adoption had been paltry. A positive observation of the participants I found interesting was colleague resistance towards this innovation had not dampened the participant's enthusiasm and willingness to share with the masses the essentials of why they chose to

adopt IC and their transformational and challenging experiences before, during, and after IC adoption.

Attributes of the IC method for adults in higher education. Research findings discussed in the attributes of IC section concluded adult learners preferred the IC environment over the traditional classroom settings because the course design motivated them to stay engaged (McLaughlin et al., 2013) and small group activities such as problem solving and critical thinking allowed students to experience how their way of thinking aligns with topic matter, classmates' ideas, and the instructor (Gunyou, 2015). Five of the eight participant responses supported the McLaughlin et al. (2013) study findings as their students also preferred IC over traditional instruction because they expressed being in control of their learning process instead of concepts being hurled through lecture methods.

Studies have shown when IC was employed, students' grades were higher on exams than when given the same exam in a traditional classroom, learning content before coming to class enhanced the in-class activities, and the opportunity to communicate where students needed clarity and reinforcing their understanding of the material via active learning opportunities increased student confidence (Gunyou, 2015; McLaughlin et al., 2013). Participants communicated they saw an increase in student's grades when IC was used as compared to grades students earned before the course was flipped. Before using IC, participants reported student participation was low; their learners voiced being unhappy with the course design and often came to class without completing homework assignments. Participants shared that students experienced the benefit of completing

homework assignments as this frontend preparation assisted them in being prepared to share their responses to the lesson in small group conversations and participate in meaningful in-class activates. Participants agreed in-class activities such as one-on-one sessions with students and small group discussions were beneficial for students because there was an allotted time for difficult concepts to be explained in detailed. In the traditional classroom setting, participants mentioned it was difficult balancing lecturing material crafted in their lesson plans and finding time to address the needs of twenty plus students. When working in small groups, hearing their classmates' "talk out" their understanding of a topic often rendered understanding for the other group members. Active learning activities increased student engagement. Two of the participants used the active learning component of IC to create role-playing scenarios for their student teachers. Through critical thinking and problem solving activities via role-playing as principals and parents, participants observed how their students processed concepts previously taught in the classroom. This observation was helpful because it gave opportunity to actually see if learners fully understood the material or if supplemental material was needed to bring more clarity.

Researchers found the IC format provided additional instructional time for faculty to present expanded coverage of course material than in a traditional course without sacrificing course content. Likewise, all of my participants confirmed the IC format provided additional time to use their creative flair to add supplemental topical material. This inclusion was beneficial for student learning and it personally satisfied participants

desire to research and apply additional resources to their lessons; thus, expanding the learning experience (Jungic et al., 2015; Mason et al., 2013; Moran & Milsom, 2014).

Kovach (2014) found instructors experienced a sense of liberty as the preparation needed to create a detailed lecture for every class meeting was eliminated when IC was adopted. The majority of my participants agreed it took a substantial amount of time to convert their traditional course to IC. However, once it was designed and tested by their institutions' technology department and properly launched, they reported they delivered IC lesson plans faster than traditional teacher preparation methods. Additionally, course preparation time was reduced for designing future flipped courses. Mason et al. (2013) declared additional in-class time created through IC allowed for learner-centered problem based learning activities. The results of the Kovach (2014) study and on the participants in this study confirmed with IC they had more time to coach students through critical thinking skills that would essentially prepare them for employment in their respective careers. One participant expressed time invested in course preparation was no different than traditional course preparation.

Higher education faculty use of IC. When assisting adult learners in becoming competitive in the 21st century workforce, the higher education instructors who teach them must become familiar and at ease incorporating technologically-based methods into their professional practice (Meier et al., 2013). Two overarching themes emerged from the research studies of early adopters of Rogers's (2003) framework. Innovation adoption in higher education is more likely if faculty receive administrative and organizational support as compared to adopting a non-supportive role (Keengwe & Kang, 2012; Phillips

& Vinten, 2010; Wright, 2014). All participants in my study received a significant amount of administrative and technical support before, during, and after their IC course was launched. Four of the participants learned about IC's effectiveness for adult learners on their own and gained favor and support from administrators when they shared their vision of flipping their courses. They were also granted the necessary technical support needed to design the course. One participant shared though the president of her institution gave a $20,000 grant for transiting traditional courses in her department to IC and she consistently taught professional development conferences on her IC adoption experiences, a low number of her colleagues remain unwilling to explore or adopt IC.

Equally prominent was the time needed for faculty to feel comfortable using an innovation as well as design and maintain curriculum (Singh & Hardaker, 2014; Wright, 2014). A continuing thread communicated by all the participants was they received ongoing technical support for designing their IC course. They appeared to have a sense of personal satisfaction and empowerment when technicians transformed their ideas for their newly designed course into realties. The time needed for participants to explore, understand how to effectively use IC in their course, and eventually become confident employing IC ranged from 5 weeks to 1.5 years. One participant was not able to communicate the hours invested in the transition process but he did communicate fine-tuning the IC courses in his department was an ongoing effort.

Limitations of the Study

The three limitations associated with this study were the exploration of only one innovative instructional method, the potential for interviewer bias, and conducting

interviews over the telephone. Though efficacious instructional methods for adult learners may be abundant, I chose to conduct a search for higher education instructors who decided to adopt IC in order for my study to have an undivided and a pointed study focus on one innovation. The scope of this study included faculty participating as part of a professional community of online higher education instructors whose primary focus was IC practice. My interest was to bring understanding through interviews as to why some faculty were eager to explore a new teaching practice, one that fundamentally honed participant's teaching craft and was an effective teaching tool for their students, and why there has been a slow momentum for adoption of this proven innovative method.

Objectivity relates to the extent to which a study's findings are influenced by respondents or researcher bias (Lincoln & Guba, 1985). I kept a journal of written field notes to enhance my objectivity. Since I have never employed IC in my professional practice nor am I associated with any instructors who use IC, journaling focused on what I learned from the data collection process that increased my impartiality.

Another limitation was that the interviews were conducted over the telephone. While I could not see them to glean tone, mood, or emotion from their body language, I was able to note certain verbal cues such as laughter, long pauses, and word choice. All of those cues signposted varying feelings such as enjoyment, concern, frustration, or passion. For example, during the interviews, participants consistently weaved in their responses regarding the pros and cons of IC versus traditional teaching methods. Six of the participants voiced they wished they could convert all the courses they taught to IC because of the personal satisfaction they experienced using this method and because of its

effectiveness in the area of student success when employed. The participants in my study resided in the United States, Istanbul, Turkey, and the United Kingdom. It was interesting to learn despite varying cultures and their global position, there was a continuous united thread bonding their positive affirmation for IC and the intentional adoption of this instructional method into their professional practice.

Recommendations

Recommendations for future research include new studies that offer faculty a financial incentive to employ IC, unite seasoned IC adopters with individuals new to IC, and extend IC in other disciplines. Future studies of the effect of offering faculty a financial incentive for employing IC could be an accommodative approach. A financial incentive may be helpful in promoting faculty buy-in if individuals have been previously on the fence when considering trying IC. Considering faculty are inundated with maintaining the courses they already teach and are sometimes teaching at more than one institution, instructors would be in agreement with receiving bonus pay for an increased workload.

Not only would future studies with a concentration on a financial incentive be helpful to increase the IC adoption momentum, a study focus on pairing seasoned IC adopters with individuals new to IC would be another approach for attracting and preserving new IC adopters. A seasoned IC adopter could assist with quelling the angst associated with technology usage and/or the transition from traditional instruction to an innovative-based alternative via sharing their experiences in the adoption process. A mentor relationship could serve as a sounding board to tease out ideas for both

individuals. Such a relationship can serve as ongoing support before, during, and after the roll out of the newly designed course.

Studies in the literature review concluded IC has been an effective entity in higher education. The studies captured the results and experiences associated with the conversion from traditional teaching to IC. In my study, participants offered their experiences flipping courses in the departments in which they were hired to teach: finance, occupational therapy, nursing, etc. A suggestion for future studies would be to monitor the conversion process of courses in varying departments or disciplines; thus, introducing and extending IC throughout an institution instead of a laser focus on one subject or department. Such a concentration has the potential of gaining a bountiful momentum for IC implantation in higher education. Moreover, quantitative studies that focus on a comparative analysis on how adults' process learning through lecture methods of instruction versus IC would also be informative.

Implications

The results of this study have the potential of informing administrators of the benefits associated with IC adoption for both instructors and for their students. Through employing IC, participants expanded their passion for teaching by being encouraged to infuse their brand of creative course design through exploring and including supplemental materials in the reshaped curriculum. Using IC, participants honed their gift of teaching and gained confidence through repetitive use of computer-aided devices and technological resources needed to create and maintain their newly designed course. Fervor for their craft and a continuous strand of support was further developed and

alliances strengthened through engaging in continuous conversations with colleagues about their triumphs and challenges realized through IC adoption. The results of this study showed when IC was used in lieu of traditional methods, the characteristics associated with student success such as increased attendance, engagement, and assessment scores were unequivocally increased. Moreover, participants reported their students enjoyed coming to their IC course more than attending their tradition courses because they liked being intentionally invited into the learning process instead of assuming the role of "bench warmer"–a passive participant.

This study presented the positive impact of administrative support, strong technical backing, mentorship relationships, and ongoing training and development when transitioning from a familiar to an innovative instructional method. Findings in this study indicated participants were motivated to investigate and eventually adopted IC when they knew support would be available rendering direction for the appropriate technological infrastructure and a technical team available to quell instructor's angst, offer guidance, and provide ongoing assistance in designing reshaped curriculum. The alliance of mentorship relationships between seasoned IC users and new adoptees served as a support group where triumphs and challenges could be shared on an ongoing basis. Positive social change can be achieved through disseminating new research on the effectiveness of IC in higher education, helping administrators see IC as a proven resolve for boosting student retention, engagement, and student learning, encouraging professional development initiatives that strengthen the knowledge base for this

innovative method, and can serve as a vehicle to encourage faculty who are unfamiliar with this didactic approach.

Conclusion

The reflections of the participants in this study, which explored the decision-making processes and experiences that led faculty to adopt IC, were encouraging to me as an educator. It was helpful for me to see the process of individuals coming out of their traditional teaching comfort zones and being willing to try another teaching method that had the potential of effecting positive change in the lives of their students. I gleaned through the interview process there was a correlation between a personal mission to provide students with a quality education that prepared them to excel not only in their IC course but also in their careers after graduation and using an instructional method that brought participants heightened personal satisfaction for their work that was apparently lackluster when they used traditional teaching methods. I was struck by how all the participants took care to "think out loud" chronicling for me their thought processes and experiences so I could better understand the essence of their transition process from traditional methods to IC. Conversations within the small group dynamic gave individuals confidence when probing the attributes of IC. Individuals felt at ease when they learned their colleagues had experienced or where currently experiencing similar victories and challenges. One-on-one and group encounters were key in strengthening participants resolve to adopt IC. I concluded participants willful act of expelling a traditional form of teaching and instead develop a passionate receptivity for change most empowering.

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Appendix: Interview Questions

First Interview Questions

1. How long have you worked as full or part faculty in higher education?
2. How long have you adopted IC or the flipped classroom into your professional practice?
3. How would you define inverted or flipped classroom based on your experience?
4. What in your experiences led to the initial idea of exploring an innovative instructional method for your classroom?
5. In what ways did your decision to use IC relate to how you think about your learning style?
    a. Probe: In what ways, if any, has your learning style changed since adopting IC?
    b. Probe: What experiences in your own education do you think led you to consider IC or the flipped classroom as a specific teaching approach?
6. How would you describe any support you have received from others related to your decision to teach the inverted or flipped classroom method?
    a. Probe: Describe some specific examples of the types of support.
    b. Probe: What, if any, inverted classroom or flipped classroom professional development opportunities offered at your institution?

7. What responses have you received from your colleagues concerning your inverted classroom approach?
    a. Probe: How would you describe the support system in your institution for instructors who have adopted the inverted or flipped classroom method?
8. During a typical day, what challenges may you encounter using the inverted or flipped classroom approach?
    a. Probe: Describe the process for preparing and presenting your lesson.
    b. Probe: Describe the steps you complete after your class is over.

Second Interview Questions

9. What is it about using technology to create innovative lectures is absent in traditional lecture methods?
10. Once you decided to adopt IC, tell me about the process you went through to develop your approach.
    a. Probe: How much time did you devote to the transition?
    b. Probe: How is your preparation for the inverted or flipped classroom different from the traditional approach?
11. What collaborative experiences have you had with other instructors who teach inverted classroom?
12. How would you describe yourself in relation to your peers in terms of adopting an innovative approach to teaching?

13. Based on your experience, share three pieces of advice you would offer an instructor who is considering teaching the inverted classroom method?
14. Are there any additional experiences you would like to share that you believe would enrich this study?