

Exploratory multi-case study of graduate education transfer of learning

by

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B.A., University of Wyoming, 1989

M.S., Kansas State University, 2006

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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Department of Educational Leadership
College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

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Abstract

Transfer of learning research traditionally relies on quantitative research to determine the occurrence of transfer. Many of these studies generally result in a failure to transfer. Few of these studies utilized either mixed methods or a qualitative methodology to determine transfer of learning, and none of these studies looked at graduate level education. This study addressed the gap between the occurrence of transfer of learning and workforce application of learning.

A qualitative multi-case study methodology was used to explore the activation of previous learning by graduates of a graduate level education degree program. The conceptual framework of this study was situated on Bransford and Schwartz's transfer of learning approach as the preparation for future learning blended with Dufresne's definition of transfer as an individual learner's complex, dynamic, and highly selective activation and application of knowledge in response to context to explore how graduates of an Adult and Continuing Education degree program transfer learning into the educational workforce (Bransford & Schwartz, 1999; Dufresne, Mestre, Thaden-Koch, Gerace, & Leonard, 2005). The multi-case study research design included semi-structured interviews, classroom observations, participant reflective journals supported by other data sources. A comprehensive comparison was used to analyze each case and a cross-case analysis was conducted to codify the findings to answer the research questions.

The findings support the activation of previous learning as the complex, dynamic and highly selective and application of knowledge of the individual learner. The results have implications for degree programs and instructional practices.

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Approved by:

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Dedication

To my anonymous high school classmate who wrote in my yearbook; *most likely to end up living on Skid Row.*

Chapter 1 - Introduction

Estimates indicate that only about 10% of classroom learning is effectively transferred to the workplace (Detterman & Sternberg, 1993). Several articles, publications, and books decry the inability of higher education to prepare graduates for the workforce (Cornford, 2002; Menand, 2011; Newman, 2010). The rate of knowledge growth perpetuates the struggle of organizations to retain a skill-current workforce (Scott, 2010). Senge (2006) pointed out that a rapidly changing business organizational model, rooted in the Industrial Age, coupled with a *formal discipline* learning model has little possibility of providing a capable workforce in today's information age.

Formal discipline is the strengthening and developing of mental skills in general subject areas by teaching such material as mathematics and Latin to develop the mind's ability to reason, memorize, and judge (Ellis, 1965). Since Thorndike and Woodworth (1901) published their seminal study demonstrating the inability of formal disciplines to achieve deep learning, the transfer of learning from the classroom to the workforce has been a central focus for educational researchers (Bransford et al., 2006; De Corte, 2007; Dufresne et al., 2005; Rebello, Cui, Bennett, Zollman, & Ozimek, 2007).

Bransford and Schwartz (1999), Haskell (2001), and Lobato et al. (2012) have described transfer as the fundamental goal of education. Similarly, Barr and Tagg (1995) proposed a shift from an instructional paradigm to a learning paradigm suggesting "a college's purpose is not to transfer knowledge but to create environments and experiences that bring students to discover and construct knowledge for themselves...that make discoveries and solve problems" (p.15). Contemporary education researchers and psychology researchers Bransford et al. (2006), Cornford (2002), Halpern (1999), Lobato (1996), and Newman (2010) believed that higher

education exists to produce graduates who "...can generalize, transfer, or form associations so that the skills, attitudes, knowledge, and personal characteristics that have been learned or developed in one context can be readily used in a different context" (Pratzner, 1978, p. 12). Bransford and Schwartz (1999) go so far as to state, "measures of transfer provide an especially important way to evaluate educational success" (p.62). Because the ultimate goal of graduate level education is the creation of prepared minds and to positively translate the graduate level education into professional practices, this study of graduate student transfer of learning expands a long overdue discussion (Fortino, 2012). Over the decades, educational researchers and cognitive psychologists have spent significant time examining the transfer of learning, the factors that impact transfer, and how teachers can teach for transfer (Bransford et al., 2006; Lobato, Rhodehamel, & Hohensee, 2012; Newman, 2010; Rebello et al., 2007) Newman's (2010) *Transfer of Learning from Preparation Program to Practice* is one of the few studies that has ventured into the study of transfer at the graduate level of learning. This research study built on existing graduate level transfer of learning research from the perspective of the learners.

Background

Learning and education is as old as humankind. It is a large part of the human endeavor, presumably to engender oneself with increased skills, motivation, and increased performance in future activities (De Corte, 2003). Evidence of formal learning and assessment criteria has been discovered in ancient Greece, the Roman Empire, Persia, and throughout the history of Western civilization (Hodge, 1911). In the U.S. in the mid-1800s, educational reformers Horace Mann and Henry Barnard established the first common-school systems in Massachusetts and Connecticut, making education accessible to all children (Jeynes, 2007). Born out of this reform of a common-school system was accountability in education, which took on the form of formal

discipline as a means of regulating and assessing learning. Formal discipline was based on imitation and memorization that involved tedious drills and the repetition of basic skills in order to cultivate memory and create broad-based student learning across general subject areas (Bransford & Schwartz, 1999; Rippa, 1971). The formal discipline model of learning informed transfer of learning research, which was rooted in laboratory-based experimental research designs. The outcomes for such research suggested a lack of transfer (Detterman & Sternberg, 1993; Haskell, 2001).

Since the Reform Age of the late 1800s and early 1900s, scientific research in the field of cognitive psychology began to question formal discipline and introduced the study of transfer of learning (De Corte, 2003). Thorndike and Woodworth (1901) challenged the traditional assumption of how students learn with one of the first clinical tests of transfer, the details of which are included in Chapter 2. The outcome of their work demonstrated that formal discipline failed to develop general skills or mental muscles affecting a wide range of learning, but rather demonstrated that learning was more specific and related to original learning (Thorndike & Woodworth, 1901).

As a result of their work, Thorndike and Woodworth (1901) are credited with developing the identical elements theory of transfer; the first known approach to understanding the connection between past learning experiences and current or future learning (Meyers, 2011). The theory suggested that the extent to which information is learned and transferred to another situation is determined by the similarities of the two situations: the more similar the situations are to one another the more likely transfer will occur (Thorndike & Woodworth, 1901). Since that first examination of transfer over 100 years ago, transfer of learning remains a controversial and a focus in educational psychology and education. At the center of the controversy is whether

or not transfer occurs, under what conditions transfer happens, and how it happens (Bransford et al., 2006; Cromier, Stephen M. & Hagman, Joseph D., 1987; Detterman & Sternberg, 1993; Haskell, 2001; Lobato et al., 2012).

A few years later, Judd (1908) argued that the identical elements theory was too simplistic and that transfer depends not on how similar the learning events are to each other, but how instruction is conducted. He attempted a different type of experiment using two groups of boys throwing darts at a dartboard underwater (The details of Judd's study are included in Chapter 2). The test demonstrated that transfer was not at the center of the different test groups, instead it was the teaching of learning strategies and how to apply them. Judd's experiment shows that the subjects did not demonstrate transfer learning, but that they followed instructions (Detterman & Sternberg, 1993).

What Judd (1908) did uncover in his research was, despite various experimental techniques, transfer is difficult to quantify and rare when restricted to applicative knowledge (Bransford & Schwartz, 1999; Detterman & Sternberg, 1993). A case can be made that Judd's study further articulated that transfer is not a procedural evaluation of learning but part of the learning process (Hager & Hodkinson, 2009). However important and serious the necessity for learners to transfer learning from one context to another albeit as a student, life-long learner, employee, or service member, existing research strongly suggested little if any empirical evidence linking training/learning to contextual transfer in learners (Haskell, 2001).

Many things are necessary in education, but transfer is critical to all learning (Bossard, Kermarrec, Buche, & Tisseau, 2008; Calais, 2006; Lobato et al., 2012). For decades educators have attempted to determine learning outcomes and better define the connection between past learning to current and future learning by providing students with the cognitive tools they can

apply beyond the initial learning event (De Corte, 2007). “[transfer of learning] is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct to the course of subsequent experience” (Dewey, 1916, p. 76).

The concept of transfer of learning has been controversial both conceptually as well as theoretically (De Corte, 2003). Empirically, the laboratory experimental research has disproved the existence of transfer. Research in traditional transfer experimental designs conducted by Dufrense et al. (2005), Gick and Holyoak (1980), Lobato (1996), and Perkins and Salomon (1992) demonstrated a failure to transfer; again, the details of each study are provided in Chapter 2. Though controversial, transfer of learning is still a key concept in learning theories and practice, because the aim of most education and training is to convey skills and knowledge beyond initial learning situations (Bossard et al., 2008; Bransford & Schwartz, 1999; Calais, 2006; Haskell, 2001). Transfer of learning is the process of knowledge construction in one context or situation, used in a different context or situation after the learner recalls, and amalgamated into new learning, then adapted to create new knowledge (Gick & Holyoak, 1980).

Learning is the fundamental process of life. When thinking about learning and transfer, it is common to consider learners acquiring and applying knowledge to something else (Calais, 2006; McKeough & Lupart, 1995). Simmons (1999) “acknowledged that transfer of learning occurs when previously learned knowledge and skills affect how new knowledge and skills are learned and performed” (p. 577). Human beings are not born with an innate understanding of how to negotiate the challenges of an adult life. These skills are acquired during the journey through life involving the constant interaction with the world around us, using, filing, and reusing information acquired (Bransford & Schwartz, 1999). “After small amounts of learning...every instance of learning is a function of the already learning organization of the

subject: this is, all learning is influenced by transfer” (Haskell, 2001, p. 45). While much of the research compiled on the subject of transfer infers a lack of transfer, there is a generally accepted understanding by educators that transfer is involved in every cognitive and intellectual function of learning (Bransford & Schwartz, 1999; Calais, 2006; De Corte, 2003; Hager & Hodkinson, 2009; Hlynka, D., & Joacobsen, M., 2010).

Over the past decades, considerable attention has been devoted to defining what constitutes effective transfer of learning and only recently has the area of student-centric learning become an area of priority (McDonald, 2011). While most of the research examines the process of transfer of learning as it applies to the workforce, transfer of learning by educators in the workforce is under researched (Calais, 2006). Past research has misconstrued transfer as a static or passive learning acquisition or instructional method; transfer is a way of thinking, perceiving, and processing information (Haskell, 2001). Transfer goes beyond the process that tests a student’s recall of information across a context of learning; its purpose is to broadly educate and is existentially rooted in the notion that learning is internal to the learner (Bransford & Schwartz, 1999; Hager & Hodkinson, 2009). It is the ability of a student to extend the learning experience beyond the moment of learning and is fundamental to all learning, “...responsible for the simplest of ideas and for the highest achievements of humankind” (Haskell, 2001, p. 23).

An alternative to transfer in the contextual construct is to view transfer not as the vessel that moves from a location but rather the learners who are the embodiment of their skills, knowledge, and understanding (Bransford & Schwartz, 1999; Calais, 2006; Hager & Hodkinson, 2009). Transfer is the expression of self, skills, knowledge, and understanding as constructed within the learner. It is the connective tissue between the learner and the surrounding environment. Learning transcends the immediacy of the learning moment; it changes both the

learner and the context. Broadly speaking it is experience (Hager & Hodkinson, 2009). That is to say, transfer is not a destination or location but a construct of learning that includes the learners' background knowledge, learning environment, and contextual setting (Meyers, 2011). Skills and knowledge are not static and generalizable within the context; they are changed, morphed, and reprocessed as experienced in ways specific to the learner as he/she engage in the activity of learning (Hager & Hodkinson, 2009).

Conceptual Framework of Study

Since the 1960s, researchers have used a transfer design structure Bransford and Schwartz (1999) referred to as the “direct application of learning in a sequestered problem solving task” (p. 68). In essence, a researcher designs a transfer study to test for the presence of near or far transfer. Near transfer occurs when the transfer is closely related to the original context or performance. Far transfer occurs when the transfer is not closely related to the original context or is completely different (Perkins & Salomon, 1992). Generally speaking, researchers adopted a perspective of predefining the underlying concept or procedure that should transfer and then designed a method to test for the occurrence of transfer (Rebello et al., 2007). Studies based on this methodology rarely support the existence of transfer (Bransford & Schwartz, 1999; Calais, 2006; Haskell, 2001; Lobato et al., 2012; Rebello et al., 2007). This concept of transfer is dependent on a functional relationship between what is learned and what is tested. The majority of transfer research and the outcomes of those studies rely on what is taught and the process, rather than what the student transfers (Gick & Holyoak, 1980; McDonald, 2011; Singley & Anderson, 1989). Therefore, the researcher must predetermine what students should transfer (Bransford et al., 2006; Lobato, 1996; Rebello et al., 2007). Schwartz, Bransford, and Sears

(2005) suggested a less limiting method of determining transfer that focuses on an active dynamic process of individual transfer.

Bransford and Swartz (1999) pointed to the need to rethink how transfer is evaluated. They suggested moving away from a traditional transfer methodology and consider transfer from an alternative methodology. Bransford and Swartz stated that traditional transfer is asking a person to apply some aspect of what they have learned to a new situation or problem. This traditional approach results in transfer being difficult to detect because this methodology approaches transfer as static rather than dynamic. Static results of transfer are determined through the use of a single assessment like a unit test. Contemporary transfer researchers commonly refer to traditional transfer tasks as static or passive learning. Haskell (2001) defined static and passive learning as the concreteness of learning, welded to the subject matter and location of learning. In contrast, alternative transfer refers to student-focused transfer as dynamic and active, defined as the complex activation of previous learning at the time and place of the learner's choosing (Dufresne et al., 2005). Bransford and Swartz coined the traditional transfer methodology as sequestered problem-solving (SPS). SPS implies that learning something new is a stand-alone event and is sequestered from outside resources, other learners, and internal reflections or feedback, which does not address transfer from a learner's perspective or include past experiences in the learning, but rather as static, and assumes initial exposure and single assessment results in student expertise.

The prevailing theories of transfer and methods of measuring transfer are based on the assumption that a student is presented with knowledge and as a result of that, expertise is acquired. What is lost in the study of transfer from a traditional approach is the subtle and iterative learning of the individual learner; that is transfer (Bransford & Schwartz, 1999).

Transfer of learning is not about a student's ability to memorize and reproduce the initial learning experience reflected in a traditional SPS study; rather, transfer is that ability of a student to extend the learning experience beyond the moment of learning and apply new knowledge at a time when that knowledge is valuable to the learner.

An alternate approach to SPS proposed by Bransford and Schwartz (1999) is preparation for future learning (PFL), which is a broadening of the transfer definition to include the prospect that past experiences and new learning does not create experts but "puts them on a trajectory toward expertise" (p. 68). Preparation for future learning is not a static approach to transfer, but rather it is the application, influence, and extension of one's own learning (Bransford & Schwartz, 1999). In their extension to original work, (Schwartz et al., 2005) argued that far transfer is not rare, but rather the SPS methodology was at fault; "...people do not apply [learning] the identical procedures they learned previously when in a new transfer context" (2005, p.4). Transfer is more than a process that tests a student's recall of information; transfer should add to the broadening of education and is existentially rooted in the notion that learning is internal to the each individual learner (Bransford & Schwartz, 1999; Hager & Hodkinson, 2009). This multi-case study built on the classification of Broudy (1977) and the previous works of Bransford and Swartz (1999) to examine transfer of learning from graduate students' application of classroom learning to the workforce. Exploring the extension of graduate level education to the workforce through learners' previous experience begins to address transfer from a broader perspective of future behavior.

Problem Statement

Cleveland (1980), a diplomat and educator, stated, "the outsiders want the students trained for their first job out of university, and the academics inside the system want the student

educated for 50 years of self-fulfillment” (p. 13). During a testimony to the Assembly Task Force on University-Industry Cooperation, over 30 years later, Fortino (2012) similarly stated, “the purpose of higher education is to create prepared minds” (§ 3). The problem of a graduate’s preparedness for the educational workforce stands at the center of an ever-growing debate by academics and politicians. Higher education is not just instruction; it must produce workers who are ready for the workforce (Cornford, 2002).

The Council of Graduate Schools (2011) indicated that in the next 15 to 20 years, 66% of all jobs available to Americans will require post-secondary education. A significant portion of that number will include graduate degree recipients. Yet a recent report on higher education indicate that students who earn masters’ degrees are ill prepared for the challenges and complexities of the workforce (Council of Graduate Schools, 2011). The ever-present goal of higher education is to provide graduates with skills and knowledge for their future careers (Fortino, 2012).

It has been argued that graduate students are not sufficiently prepared with the broad range of skills necessary to meet workforce challenges (Council of Graduate Schools, 2011). Graduates’ lack of preparedness for the workforce is a reoccurring theme within transfer of learning research literature; suggesting far transfer in traditional transfer research is rare (Bransford et al., 2005; Lobato et al., 2012; Newman, 2010; Rebello et al., 2007). Given the evolving work environment, there is a need to understand whether graduate educational experiences inform workforce practices. A study of graduate level transfer of learning informs the discussion of the occurrence of far transfer and sheds light on the ability of higher education to prepare graduates to meet workforce demands.

Purpose of the Study

Using Bransford and Schwartz's (1999) PFL as the framework for transfer of learning, the purpose of this study was to investigate how graduate students describe their past experiences of the 18 credit hours of core curriculum in this Adult and Continuing Education degree program and the extent to which it created new meaning and influenced current practices in the educational workforce. Some researchers have suggested that the failure to detect transfer of learning is due to the narrowly defined outcomes specific to past laboratory experiments, specifically approaching transfer as the outcome rather than an iterative, individual application of learning (Calais, 2006; Dufresne et al., 2005; Newman, 2010). Learning is individual, dynamic, and uniquely connected to each learner's past experiences. Explicitly, how those past experiences interact with the learning material and the environment to create a new understanding within the learner's job settings was explored.

Research Questions

This study used one primary research question and two secondary questions.

Primary Research Question: What are graduates' perceptions of their ability to transfer their learning to a teaching environment with adult learners after completing 18 credit hours of core curriculum in this Adult and Continuing Education degree program at a midwest university?

Secondary Research Questions were:

1. What are graduates' current educational workforce practices?
2. What did graduates report having learned from their program that influenced their instructional practices?

Research Design

This was a qualitative bounded multi-case study. A qualitative research design was selected because qualitative research allowed for the capture of individual perspectives and meaning making (Bloomberg & Volpe, 2012). In this study, the goal of the primary research question, secondary questions, and data collection methods was to explore transfer of learning as described by participants' perceptions of how the theoretical underpinning of transfer align with their application of course outcomes to the educational workforce. The conceptual framework of this study was founded on the functional relationship between what a student learns in class and the activation and application of that learning in the workforce. Using an alternative approach to transfer learning, this study focused on the PFL and defined transfer as an individual learner's complex, dynamic, and highly selective activation and application of knowledge (Bransford & Schwartz, 1999; Dufresne et al., 2005) in response to context to explore how graduates of an Adult and Continuing Education degree program transfer learning into the educational workforce.

The sampling strategy used a purposeful sampling of graduates from a midwest university's Adult and Continuing Education Graduate degree program. The sample was further narrowed to include only the participants who completed all 18 credit hours of core courses in Adult and Continuing Education degree program at a midwest university and were instructors at higher education institutions with more than one year teaching experience.

A pilot study was conducted with two participants drawn from the same population as those in the study who met the study qualifications. The pilot study treated each participant as a separate case study to test both the interview protocol and observation protocol. The feedback from the pilot studies was useful in modifying aspects of the methodology prior to beginning the

research study. Major modifications to the study included; collection of the reflective journal at each interview instead of at the end. The other modification was the broadening of questions in the semi-structured interviews to allow more latitude for the participants to answer more openly. Due to a limited number of respondents and the study qualifications, limited time, and narrow data collection window, a purposeful sampling was ideal.

Four participants, each from a different institution of higher learning, representing a university, community college, and another graduate degree program comprised the study sample. Multiple methods of data collection provided information during the three parts of the study. Part 1 consisted of a participant background information form that provided initial information about each participant's teaching methods, resources, influences on practice, and classroom demographics. Part 2 included three interviews placed one before, one between and one after each of the observations. Part 3 included two observations, jointly scheduled by the participant and researcher to ensure the observations occurred between the interviews. Additional data was collected from participant reflective journals, researcher field notes, and researcher reflective journal entries.

Significance of the Study

Traditional transfer (experiments) measures a student's ability to memorize information and apply that information to a different context. However, transfer measured in this manner is a measurement of *formal discipline*, not of a student's ability to use previously learned knowledge in a new situation. Expanding transfer of learning to include the individual activation of previous experience through a lens of PFL informs the transfer of learning discussion (Bransford & Schwartz, 1999; Broudy, 1977). A significant on-line data search of books, peer reviewed journal articles, and dissertations on transfer of learning resulted in over 43,000 hits. When

including graduate degree programs to the search, further than 50 hits were found. This search revealed that the majority of research on transfer of learning is focused on secondary and undergraduate education. This study expands the discussion on transfer of learning research to include graduate students. Given the ever-growing need for an educated adult workforce, this study further expands the conversation of how learners in higher education degree programs express transfer of learning.

Assumptions

There were two assumptions that influenced this research. First, that all participants would answer the interview questions truthfully. Given that this is a research study directed at transfer of learning by active instructors in higher education and not about their teaching practices, it was expected that participants would answer truthfully. Second, all learning is connected to prior learning. It was assumed that participants would be able to make the connection between current practices and where they acquired those practices.

Limitations

The limitations of this study were:

1. This research is not generalizable to a larger population. The sample represented a group of self-selected, highly functional participants and may not represent all instructors in higher education.
2. The study is limited to one institution and one-degree program.
3. This study only examined one skill set that could be transferred; each participant was working the field of education as an instructor or facilitator at higher education institutions.

4. The participants were limited to one geographical area. Only those qualified to participate who lived within a fifty mile radius and accessible to the researcher were considered for the study.
5. The study examined one professional setting of a single graduate degree program.
6. This case study was bounded by the exclusive qualifications of the participants. All the participants had completed the 18 credit hours of core curriculum of the Adult and Continuing Education degree program at one institution.

Definitions

Applicative knowledge: Refers to the fact that a person “thinks, perceives and judges with everything that he has studied in school, even though he cannot recall learning on demand” (Broudy, 1977, p. 12).

Associative knowledge: A learner’s cumulative set of knowledge and experiences used to perceive, interpret and judge new situations based on the learner’s own past experiences (Broudy, 1977).

Direct application (DA): Characterizing transfer of learning as the student’s ability to directly apply one’s previous learning to a new situation or problem (Bransford & Schwartz, 1999).

Formal discipline/mental discipline: Contends that the mind is composed of several faculties such as reasoning, memory, judgment, and attention, and that these faculties could be trained, improved, and strengthened through the study of certain kinds of subject matter (Latin, Greek, Mathematics, Geometry) that would “discipline” the “mind” (Ellis, 1965).

Instructional practices: Methods, techniques and educational philosophies used to promote learning in a classroom environment.

Interpretive knowledge: The interpretation of a situation “invariably involves some use of a previous experience, it cannot be reduced to a simple replication of that experience”

(Broudy, 1977, p. 11)

Knowledge: A process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience (Kolb, 1984).

Knowledge model: The knowledge model was constructed by Broudy (1977) to facilitate the development of learning and a deeper understanding of knowledge; the model includes four distinct knowledge types: replicative knowledge, applicative knowledge, associative knowledge and interpretive knowledge.

Preparation for future learning (PFL): Accounts for a learner’s ability to learn, explore new information and relate his/her learning to previous experiences, not as a direct application of learning but more as “transfer in” to new situations (Bransford & Schwartz, 1999).

Replicative knowledge: Refers to the knowledge gained through memorization, and tedious drills but has no cognitive association with the reproduced knowledge (Broudy, 1977).

Sequestered problem solving (SPS): The application of transfer of learning of transfer task that is sequestered from outside information; student use of outside resources to solve, receive feedback or assistance or the opportunity to revise solution. (Bransford & Schwartz, 1999).

Static learning environment: A learning environment where student learning is based on a single, or one-time test used to evaluate transfer (Bransford & Schwartz, 1999).

Transfer of learning: The complex, dynamic process leading to the highly selective activation and application of knowledge in response to context (Dufresne et al., 2005).

Transfer of training: A planned intervention designed to enhance or develop knowledge, skills, attitudes, and abilities for the purpose of improving performance [within the workplace]” (Scott, 2010, p. 5).

Summary

Typically, transfer of learning has been studied through laboratory experimental research design with limited results. Through the transfer of learning lens of PFL theory, this research explored graduate level adult learner’s perspectives of their ability to apply their coursework in higher education to the postsecondary education teaching work. The results provide insights into transfer of learning.

This chapter was an overview of the qualitative bounded, multi-case study exploring the transfer of learning from the perspective of individual learners and how they construct knowledge in the educational workplace. The chapter contains an explanatory history, background of transfer of learning and the context of transfer as it applies to individual learners. Discussion included the background, problem statement, purpose statement, research question, research design, significance, researcher background, assumptions, limitations, and definitions of key terminology related to this study. The next chapter contains a review of the literature informing this study.

Chapter 2 - Literature Review

It [transfer of learning] is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct to the course of subsequent experience.
(Dewey, 1916, p. 76)

The purpose of this multi-case study was to investigate how graduate students describe their past experiences of the 18 credit hours of core curriculum in this Adult and Continuing Education degree program and the extent to which it created new meaning and influenced current practices in the educational workforce. Transfer of learning in this study is the amalgamation of the complex, dynamic activation of previous learning and the PFL. The implication of this study is in the future construct of graduate programs methods of assessing transfer of learning. The purpose of a literature review is not to delimit the topic, but to provide insight and understanding to the topic (Yin, 2013).

Learning and Knowledge Development

People are not born with the competencies necessary in adulthood, as the very nature of learning is developmental. As people mature they continue to develop competencies throughout life. “Process of learning and the transfer of learning are central to understanding how people develop important competencies” (Bransford, Brown, & Cocking, 1999, p. 51). The topic of transfer of learning has interested educational and psychological researchers for the past 100 years, often with little proof of its existence (Bransford & Schwartz, 1999; Royer, Mestre, & Dufresne, 2005). Additionally, “there is little agreement in the scholarly community about the nature of transfer, the extent to which it occurs, and the nature of its underlying mechanisms” (Barnett & Ceci, 2002, p. 612).

Broudy (1977) stated

I would argue that important as the inquiry of how learning takes place is, the modest influence such research has had upon schooling may be due to an indifference to the difference between the criteria for learning and the criteria for use of what is learned. (Broudy, 1977, p. 9)

The formation of knowledge was traditionally assumed to occur through formal discipline, which subsequently is how transfer is measured in a traditional transfer experiment (Bransford & Schwartz, 1999; Broudy, 1977; Haskell, 2001; Lobato, 1996; Newman, 2010).

Broudy (1977) identified two categories of knowledge: *specialist* and *generalist*. Specialist refers to learning and transfer tasks that are closely related to initial learning such as arithmetic to algebra. Generalist is when learning and the transfer task extend beyond the initial learning; for example, mathematics to water conservation. Within these two categories, Broudy identified three types of knowing that respectively align with traditional and alternative studies of transfer of learning: (a) *knowing that* and (b) *knowing how*, which align with traditional transfer, and *knowing with*, which aligns with alternative transfer. He further breaks down *knowing* by identifying each with a particular mode of knowledge acquisition. *Knowing that* is replicative knowledge obtained through repetitive and tedious drills (Broudy, 1977). Problems at the end of a mathematics unit are an example of replicative knowledge. *Knowing how* is applicative knowledge. This type of knowledge is the procedure of what one has learned. An example of applicative knowledge is learning to read; having that skill allows one to apply that knowledge to reading a book or newspaper. The specialist uses *knowing that* replicative knowledge and *knowing how* applicative knowledge. Specialist knowledge is commonly used to determine effectiveness of learning and traditional transfer, but research reflected in traditional transfer commonly shows a failure to transfer (Bransford & Schwartz, 1999; Broudy, 1977; Detterman & Sternberg, 1993; Haskell, 2001; Lobato, 1996; Newman, 2010; Rebello et al.,

2007). As Broudy pointed out in his work, repetitive and applicative knowledge are static and demonstrate no connection to the construction of knowledge. "... the amount of rote learning one retains—unless there is opportunity for frequent recall—is discouragingly meager" (Broudy, 1977, p.10). Broudy and other researchers argued that educators must move beyond emphasizing replicative and applicative knowledge, since these methods of determining transfer are at the root of failure to transfer or indicate far transfer is rare (Bransford & Schwartz, 1999; 1977; Lobato et al., 2012; Rebello et al., 2007).

The generalist, on the other hand, uses *knowing with*, a combination of associative knowledge and interpretive knowledge. *Knowing with* provides the context that allows the learner to perceive, interpret, and judge (Broudy, 1977). The example used by Broudy (1977) is "Jack Nicklaus is dead" (1977, p.12). Without context one may suggest there is a write-up about Jack Nicklaus in the obituaries. However, in the context of golf with Jack, shooting a three over par on the 18th hole in a major tournament would have a context of losing a chance at winning a tournament. *Knowing with* accounts for the learner's past experience, predictions, and inference, not as a passive accounting of previous learning, but as a resource activated by the learner to make sense of and frame the new problem (Broudy, 1977). Applicative and intuitive knowledge describes a type of knowledge that learners who demonstrate "clearly articulated procedures or schemas" use in determining the solution to new problems or to negotiate a new situation (Rebello et al., 2007, p. 11).

Broudy (1977) argued that education must move beyond the replicative and applicative knowledge, as these methods of determining whether or not transfer has occurred are at the root of failure to transfer. A closer look at interpretive knowledge and the need for a further understanding of transfer suggests a need for different research paradigms (Schwartz et al.,

2005). This approach, an alternative methodology to transfer, assumes that transfer is a dynamic process of the learner activating strategies, previously acquired knowledge, and experience to solve new problems, not the end state of learning (Bransford & Schwartz, 1999; Dufresne et al., 2005; Mestre, 2005).

Transfer of Learning

There are three recognizable differences in how research defines the presence of transfer. These three differences are generally accepted expressions of transfer: positive, negative, and zero transfer. All learning involves taking some aspect of previous learning and applying it to a new situation. Positive transfer occurs when learning in one situation improves the performance in a different situation (Singley & Anderson, 1989). An example of positive transfer is someone learning how to drive a tractor on a farm as a young teenager and later in life using that experience to operate a car. The process of steering, braking, and shifting gears on one vehicle is used to applied to driving the second vehicle.

When prior knowledge blocks the application of new information and adversely impacts learning in a new situation, it is considered negative transfer (Bransford et al., 1999). One such example is when a person whose first language is English attempts to learn Spanish. The two languages have different syntax, sentence structure, and pronunciation. Knowing English negatively impacts learning Spanish (Perkins & Salomon, 1992).

Zero transfer represents the absence of transfer altogether. In the instances where zero transfer is present, there is no facilitative or inhibitory effects of earlier learning to later transfer (Cornford, 2002). An example of zero transfer is learning to ride a bicycle and learning how to play the trumpet. While both create new learning, learning to ride a bicycle does not aide in learning to play the trumpet.

In addition to these three recognizable differences there are also two contexts for transfer. In educational and cognitive psychology transfer has two names: transfer of learning and transfer of training. In the literature, researchers have used transfer of learning and transfer of training as interchangeable terms. It is true that the processes of both education and workforce professional training are similar and that does, under most research circumstances, justify the interchangeability of terms (Scott, 2010). However, for research specific to graduate-level education and constructed transfer directly from the classroom to an educational workplace application, the terms are not interchangeable.

The terms are separated by commonly held definitional nuances in the field of educational and cognitive research and psychology. Transfer of training results in an improvement in the target task. Baldwin and Ford (1988) defined transfer of training as: “[a] learners’ ability to effectively apply acquired knowledge, skills, and attitudes on the job and maintain the application over a given period of time” (p. 2). More specifically, it has a more restricted meaning than of transfer of learning. Transfer of training refers to the application of knowledge, skills, and attitudes expressed from purposeful training experiences for the purpose of increased individual and organizational production (Bransford & Schwartz, 1999; Cornford, 2002).

Determining a singular definition for transfer of learning is a little more problematic; there are as many definitions for transfer of learning as there are methodologies and outcomes of transfer research. Transfer of learning in the traditional sense does not fully capture the student’s individualized application of learning. While the traditional meaning of transfer focuses on determining whether previous knowledge is applied to a new or future context, the definitions used by transfer researchers vary:

1. “Transfer of learning occurs when learning in one context or with one set of materials impacts on performance in another context or with other related materials” (Perkins & Salomon, 1992, p. 10).
2. “Transfer [of learning] is the degree to which a behavior will be repeated in a new situation” (Detterman & Sternberg, 1993, p. 4).
3. Conceived transfer as “the extent to which participating in an activity in one-situation influences ones’ ability to participate in another activity in a different situation” (Greeno, Moore, & Smith, 1993, p. 172).
4. “Broadly speaking, transfer of learning relates to generating knowledge and information through education and experience” (Lobato, 1996).
5. “Transfer [of learning] is defined as the ability to extend what has been learned in one context to new context” (Bransford & Schwartz, 1999, p. 39).
6. “Transfer of learning is our use of past learning when learning something new and the application of that learning to both similar and new situations” (Haskell, 2001, p. xiii).
7. “Transfer of learning is defined broadly to mean the ability to apply knowledge or procedures learned in one context to new contexts” (Mestre, 2005, p. 3).
8. “Transfer [of learning] is a term that describes a situation where information learned at one point in time influences learning and performance at later time” (Royer et al., 2005, p. viii).

Common to all these traditional transfer definitions is the application of knowledge learned from one situation to a later similar situation. Most transfer definitions used by traditional transfer experimental research include two elements of learning in the definition: past

learning and application of learning to future learning in a similar situation (Haskell, 2001). In general, traditional transfer attempts to connect learning event *A* to a follow-on learning event *B* in terms similar to those used by Thorndike nearly a century ago, specifically the identical elements theory (Lobato, 1996). As this study took an alternative approach to transfer of learning, an alternative definition to transfer was used. Dufrense et al. (2005) defined transfer of learning as “the complex, dynamic process leading to the highly selective activation and application of knowledge in response to context” (p.158).

Looking across numerous traditional studies on transfer, Thorndike and Woodworth’s findings (1901) continue to reemerge, bringing to question the applicability of traditional transfer methodologies in determining the existence of transfer (Perkins & Salomon, 1992). Modern theories associated with transfer and learning continue to focus on student practice and identical elements theory (Bransford et al., 1999). De Corte (2003) and Lobato (1996) suggested evidence of transfer is difficult to document not because it does not occur, rather because the approach to studying transfer is to be modified.

Traditional transfer of learning studies are bound by the parameters of the research design, not as an individual rich and dynamic transfer of learning (Nowacek, 2011). Assessing learning or a transfer task as a singular event does not guarantee transfer of learning (Driscoll, 2002). As such, a different theoretical approach is necessary for a more complete accounting of the dynamics of individual transfer of learning. Respected researchers in the field of educational psychology and learning have suggested a re-conceptualization of transfer of learning (Bransford & Schwartz, 1999; Lobato, 1996; Newman, 2010; Nowacek, 2011). Instead of viewing transfer as a passive naturally occurring phenomenon, a different approach that conceptualizes transfer of

learning as involving deep structural learning as part of the initial learning and PFL acquisition is more appropriate to evaluate transfer at the graduate level (Nowacek, 2011).

Historical Context of Traditional Transfer

The transfer of learning debate started when Thorndike and Woodworth (1901) first challenged formal discipline in 1901 and ignited a century-long discussion challenging formal discipline doctrine and how or if learning transfers beyond the initial learning experience. The formal discipline doctrine was presumed to be the foundation of transfer of learning, and transfer was assumed to be widespread and fairly automatic (Ellis, 1965). Thorndike and associates disagreed with the premise that learning difficult subjects rendered transfer tasks trivial if the procedure was performed properly (Cox, 1997).

The work of Thorndike and Woodworth (1901) contained three principles regarding transfer: a) transfer was expected only between tasks that shared common stimulus elements; b) the learner was viewed as a passive recipient of information; and c) transfer was investigated following an arbitrary association. What Thorndike and associates discovered in a 25-year longitudinal study was that, while students do well on the tested complex subjects, they do not necessarily transfer that learning to new subjects. In fact, the research demonstrated the ability to transfer was not due to the exercise of the mind, rather a function of the amount of similarity between the initial transfer task and the new setting (Thorndike & Woodworth, 1901).

Thorndike and Woodworth (1901) did accept transfer between diverse skills or subjects as long as a thread could be pulled through the shared elements. For Thorndike, learning transfers from one learning activity to another learning activity if the two share common elements. The resulting theory was the development of the identical elements theory of transfer.

One mental function or activity improves others insofar as and because they are in part identical with it, because multiplication is

largely addition; knowledge of Latin gives increased ability to learn French because many of the facts learned in one case are needed in the other. (Thorndike & Woodworth, 1901, p. 243)

This was the first known approach to understanding the connection between past learning experiences and its relationship with current or future learning (Meyers, 2011).

Judd (1908) argued that the learner making structural connections between two situations determines transfer. Judd's experiment involved two groups of fifth-grade boys throwing darts, first, at a target 12 inches underwater (initial learning event). Half of the boys were provided instruction on how water refracted light and that applying the principle of refraction would help them hit a target underwater. A second target was placed underwater at a distance of four inches (transfer task). Judd found that the principle-of-refraction group outperformed the other group when aiming at the underwater target placed four inches.

The boys without the theory were very much confused. The practice gained with twelve inches of water did not help them with four inches. Their errors were large and persistent. On the other hand, the boys who had the theory, fitted themselves to four inches very rapidly. (Judd, 1908, p.37)

Judd's findings suggested that individuals who are able to make a structural identity are more likely to demonstrate transfer, thereby making the first case for the cognitive paradigm view of transfer versus Thorndike and Woodworth's claim of identical elements (Campione, Shapiro, & Brown, 1995; Lobato, 2003).

In a historical context of traditional transfer of learning, the question of learning and transfer has been at the center of the debate both empirically and conceptually as a widely-studied topic in both educational and cognitive psychology, especially from 1970-2010. The vast majority of research emerged from Thorndike and Woodworth's (1901) identical elements

theory. Methodologically, traditional transfer focuses on the procedural process of students transferring learning from an initial learning event to a subsequent event or situation, based on identical elements theory. Traditional transfer research measured the efficiency or accuracy of the transfer task from initial to future to determine the occurrence of transfer. The central issue surrounding the traditional transfer methodology was the researcher's predetermined *what will transfer*, and did little to account for individual student learning or each student's use of prior knowledge (Lobato, 1996). Another aspect of traditional transfer research that may contribute to failure to transfer is the reliance on statistical measurements of transfer (Lobato, 1996). Traditional transfer of learning research showed a commitment to experimental techniques in determining transfer.

Alternative transfer methodologies closely examine transfer from a student-centric approach. These alternative methods viewed transfer as the activation of previous learning and experience determined by the learner beyond the classroom (Bransford & Schwartz, 1999; Lobato et al., 2012; Rebello et al., 2007).

Categorizing Transfer

Much of transfer research divides transfer of learning into a comparison of transfer based on the distance from the original learning event (Newman, 2010). Metaphorically, transfer of learning is the expression of learning over time, from the initial learning experience to some future application (Haskell, 2001). Research on transfer over the past century can be classified in four categories. Each category represents the elapsed time from the moment the transfer task is introduced to the learner and when he/she use the transfer task in a future applications (Newman, 2010). Figure 2.1, modified from Newman's (2010) version, illustrates the different categories to transfer, transfer presence perspectives, and similar methodologies within the category.

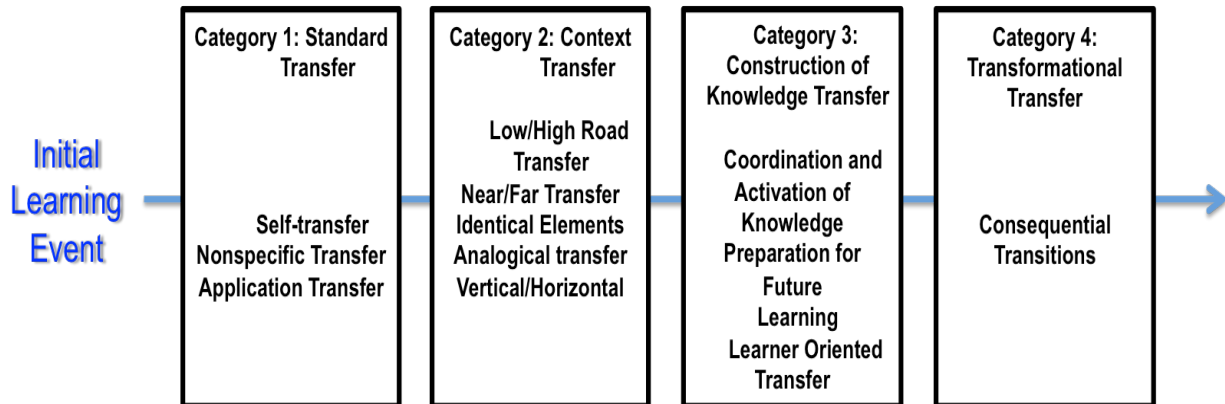


Figure 1. Transfer categories. Figure adapted from Newman’s (2010) *Categories of Transfer*

The four categories are standard transfer, context transfer, construction of knowledge transfer, and transformational transfer (Newman, 2010). The categories move a time from nearest the initial learning experience to a time distant and transformational to the learner. All four categories are representative of transfer and learning. However, the further from the initial learning a student travels the more likely the occasion of transfer involves deep learning (Newman, 2010). Categories of transfer of learning (Figure 1) encapsulate the different types of transfer and the different types of learning. The following discussion includes empirical findings by researchers in each category and will be grouped under traditional transfer research (Categories 1 and 2), future learning transfer (Category 3), and transformational transfer (Category 4).

Category 1: Standard Transfer

Category 1 is closest to the initial learning event and influenced by prior learning, and tends to replicate the original learning event, or is the assessment/application directly related to the original learning (Newman, 2010). Standard transfer involves the repetition of tasks to the point that those tasks are connected to the learning opportunity (Newman, 2010). Another way to

describe standard transfer is repetitive learning or training. In both cases the student continues to practice the task, using the same routine and steps to achieve a level of proficiency (Haskell, 2001). Category 1 represents what Broudy (1977) referred to as replicative knowledge—drills and exercises, applicative knowledge- tests or homework at the end of a textbook unit. Some transfer terms associated with standard transfer include self-transfer, nonspecific, and application transfer (Haskell, 2001).

Gick and Holyoak's (1987) self-transfer is learning the processes and attributes that involve repetition. Self-transfer is also known as ordinary learning (Gick & Holyoak, 1987). An example of self-transfer is a child learning the alphabet or being able to identify dogs and cats. Nonspecific transfer implies that all learning is essentially transfer of learning, because all learning is contingent upon being connected to past learning (Haskell, 2001). Nonspecific transfer is everyday learning such as making a pot of coffee. Application transfer refers to a subject applying what the person has learned in relation to specific situations (Haskell, 2001). An example of application transfer is learning how to use Microsoft Word, then typing a memorandum using Word.

Category 1: Standard transfer is proximal to the initial learning event and repetitive in nature (Newman, 2010). Transfer in this category refers to subjects being drilled repetitively until they demonstrate mastery. Since the demonstrated learning is the repetition, it is not necessary for the subject to make a cognitive connection to any previous learning only to the repetition of the task (Newman, 2010). If learners are to transfer learning, rather than merely apply or duplicate learning, then new learning must occur (Calais, 2006; Haskell, 2001).

Category 2: Context Transfer

Context transfer describes transfer as the application of the transfer event/task as being similar or dissimilar respective of the context (Newman, 2010). The types of transfer in this category apply the learning of facts, figures, and concepts to test transfer (Greeno et al., 1993; Perkins & Salomon, 1992; Simons, 1999). The transfer types in Category 2: Context transfer use prior knowledge to develop new learning. Context transfer is predicated on the expectation that previous learning facilitates new learning, as long as the new tasks contain elements of the initial task (Perkins & Salomon, 1989). The learner automatically transfers the skills due to the similarities of the transfer tasks. Context transfer is an assessment of transfer as a measure of student recall and the information is maintained for quick recall (Bossard et al., 2008).

Consequently, most of the traditional experimental research occurs within Context transfer. While there is generally a view that transfer research results in a “this or that” outcome, it is not dichotomous in nature (Mayer & Greeno, 1972). Lower classification refers to transfer that involves automatic use of skills and repetition. Higher classification transfer refers to mindful abstraction, extraction of knowledge by the learner (Bossard et al., 2008). Mayer and Greeno (1972) pointed out that learners might use different strategies when attempting to achieve either high or low hierarchies of transfer of learning. The learner may even mix both hierarchies to transfer.

The lower classification level of transfer goes by a variety of terms. However, the following are the terms most commonly used in traditional transfer research: low road, near, and vertical. While each initial researcher defined the term and assigns a unique nuance, all generally stated that transfer includes an initial learning experience and application of that knowledge (Haskell (2001)Mayer & Greeno (1972)Perkins & Salomon (1992)Rebello et al., (2007). An

example of a lower classification context transfer is a person who has experience driving a tractor and transfers that experience to driving a compact car. The most widely-used term in transfer research to express lower classification of transfer is near transfer. Since different researchers have different terms for the lower classification of transfer, a single term is selected for this study. For the sake of consistency any reference to low classification transfer in this study is near transfer.

The higher classification transfer level also goes by a number of different terms. The higher classification transfer level terms (high road, far, and horizontal) correspond with the low classification level terms. Higher classification transfer generally consists of a subject who is extracting/applying knowledge in a situation that is dissimilar from the original situation. An example of high classification context transfer is Benjamin Franklin's understanding of lightening as an electric spark. Likewise, the most widely used term in transfer research to express the higher classification of transfer is far transfer. Since different researchers have different terms for the higher classification of transfer a single term is selected for this study. Also, for the sake of consistency, the term, far transfer, will be used to describe transfer when referencing a higher classification of transfer.

The vast majority of single-event traditional transfer studies fail to determine transfer of learning (Detterman & Sternberg, 1993; Gick & Holyoak, 1983; Haskell, 2001; Lobato, 1996) Gick and Holyoak (1980) presented the students with the Dunker problem. In the problem, a tumor must be destroyed by radiation. The use of a single concentrated X-ray would also destroy healthy tissue. The solution is to give the patient smaller rays from different directions to converge at the tumor. The study was designed to provide an analytical problem-solving view of transfer. Before the students were given the irradiation problem, they were provided a story of a

castle and a general. In the story, the invading general's army approached the fort from different directions, converging on the fort at the same time, from different directions. The defending army was unable to resist the army because they were unable to defend the castle simultaneously from multiple directions. After hearing the castle and general story, the participants were given a second problem that replicated (Duncker, 1945) irradiation problem and were asked to solve the irradiation problem using the context of the *general and the fortress* approach, attacking cancer as a general would attack the fortress. Gick and Holyoak found in many instances students were unable to make an analogical connection between the two problems. In particular, students using analogical transfer often failed to recognize similarities between the two problems (Gick & Holyoak, 1980). Before the students were given the radiation problem, the students were told a story about the general. The students were further told the story was a hint in solving for the problem. Only 30% of the students were able to solve the radiation problem given the castle and general analogy. When Gick and Holyoak prompted students to look at the similarities between the fortress and irradiation stories, over 90% were able to then apply previous learning to the new situation. Detterman and Sternberg (1993) suggested that if students are told material is useful in answering a question, the students are not transferring; they are given the answers to the test. "When subjects are told that previous material may be useful in the solution of a new problem, it hardly seems reasonable to refer to the solution of the new problem as the result of transfer" (Detterman & Sternberg, 1993, p.11).

Another example of the failure to transfer in the traditional transfer context is the study conducted by Lobato (1996). She examined algebra students learning mathematical concepts of slope and slides in a traditional transfer study with the transfer task a playground slide. Using the short-term learning instruction treatment of direct application (DA) and sequestered problem

solving (SPS), the result was poor student performance on the transfer task. In Lobato (1996) and Gick and Holyoak (1980) traditional transfer of learning studies there is no evidence of far transfer existing.

Perkins and Salomon's (1992) contextualization of transfer as 'low' and 'high' road transfer is a stimulus conditioned transfer context. The determinant in low road transfer is that the learner having some contextual experience "triggers a well-developed semi-automatic response" and is considered a reflexive process of learning (Perkins & Salomon, 1992, p. 7). Low road transfer is learning on autopilot, we have similar elements to apply the transfer task. As an example of low road transfer, Perkins and Salomon used a person who only owned cars now renting a truck. The reflective process of driving a car with a standard transmission allows that same person to rent a truck with a standard transmission even though the truck is bigger. Perkins and Salomon called this the Bo Peep factor.

The complement to Perkins and Salomon's (1989) low road transfer is high road transfer. High road transfer has a more meaningful component to learning than low road transfer. It demands the learner make connections from the known information to the new problem (Perkins & Salomon, 1989). As such, high road transfer is not generally reflective but requires an "investment of mental effort" (Perkins & Salomon, 1989, p. 7).

Generally speaking, most formal educational settings offer narrow ranges of learning practice and reflection, resulting in insufficient practice time for a learner to achieve a state of well-developed, semi-automatic responses (Perkins & Salomon, 1989). Perkins and Salomon (1989) suggested traditional methods of measuring for far transfer do not occur in a short-term learning test environment. As such, far transfer was not found in research and current learning situations do not encourage the mental investment necessary for far transfer. Context transfer,

transfer only happens when learners recognize similar elements in the two situations (Perkins & Salomon, 1989). The identical elements theory requires learners to apply knowledge directly and deliberately to new situations.

It is worthwhile to note that, while subconscious minds desire to quantify ‘near’ and ‘far’ transfer in terms of distance, neither is quantifiably precise in its distance from the other (Perkins & Salomon, 1992). While much of the research in Category 2 does demonstrate an occurrence of transfer in the lower transfer classification (near, low); transfer in higher classification (high, far) remains elusive (Bransford & Schwartz, 1999; Lobato, 1996; Rebello et al., 2007). Regarding near and low road transfer, it is a widely-held position that the lower classification transfer can reasonably be expected to occur if effective education and learning are present and the learner is receptive (Cornford, 2002; Haskell, 2001). Campoine’s (1995) study on children’s reading programs is such an example. Campoine et al. (1995) found reading scores improved over time with repetition when children were taught to self-monitor and self-direct during reading. Even if near transfer is obtainable to experienced learners, near transfer fall short of obtaining deep learning required of true transfer of learning in graduate level studies where deep learning is expected to occur routinely (Bransford & Schwartz, 1999; Lobato, 1996; Rebello et al., 2007).

Category 1: Standard transfer and Category 2: Context transfer takes the shape of traditional transfer and static (single-event) approach to evaluating the effectiveness of the learner’s ability to recall and use past knowledge. The traditional static view of transfer assumes that learning and transfer has occurred when testing of transfer is taken directly following initial learning event. Often times the researcher selects the experimental research task, and further determines what qualifies as transfer. This is all done before the experiment begins and without

learner involvement (Lobato, 1996). The majority of transfer research conducted using the methodologies in Category 2 involves what Bransford and Schwartz (1999) termed SPS, which they explain using a jury reference. When deliberating a case, the jury is sequestered and isolated from outside influences that may affect the outcome of the trial (Bransford & Schwartz, 1999). Bransford and Schwartz suggested that traditional transfer research likewise sequesters learners from outside influences.

Challenges to Traditional Transfer

Despite the importance of transfer of learning, research findings over the past nine decades clearly show that individuals and educational instructors have failed to achieve transfer of learning at any significant level (Haskell, 2001). Haskell (2001) emphasized the importance of transfer of learning in the modern age. When society moved at the pace of conversation, transfer may not be as necessary to learning (Haskell, 2001). However, in the modern age, society moves at the pace of digital bursts. The ability to transfer knowledge from one context to another, or from old to new, is essential for our adaption to the technological and global demands of the 21st century (Haskell, 2001).

A clear implication on modern education, supported by Detterman and Sternberg's (1993) conclusions, is that in order for students to transfer knowledge from one context to another context, it is imperative that instruction levels are sufficient to facilitate transfer and instructors are proficient thinkers of transfer (Haskell, 2001). To this point, Haskell (2001) argued that most teacher educational programs (K-12) are fixed in a mold of formal discipline and produce teachers who function at a cognitive level approximate to Piaget's concrete operations stage (Haskell, 2001). While Haskell's point is valid in most undergraduate settings, most methodologies used at the graduate level mirror adult learning models and allow for greater

extension of learning. Gick and Holyoak (1983) reasoned that while contextualizing learning does improve initial learning, over contextualizing information could hinder transfer.

Detterman and Sternberg's (1993) criticisms regarding the lack of the presence of far transfer are summarized by Haskell (2001) into five distinct elements of *coaching learning* not as transfer. Individuals:

1. "are told that previous material may be useful in the solution of a new problem;
2. are informed about strategies and methods known to improve learning on specific kinds of material;
3. are instructed to use those strategies on the material;
4. have the similarity pointed out to them; or
5. are given other hints about the similarity between the problems to be solved."

(Haskell, 2001, p.37).

Detterman and Sternberg's (1993) work is an often-cited source for the *failure to transfer*. However, in their argument that far transfer is a rare phenomenon, Detterman and Sternberg asserted that the few research studies that confirmed far transfer did so because the research design *taught to the test*. "The lesson learned from studies of transfer is that if you want people to learn something teach it to them. Don't teach them something else and expect them to figure out what you really want them to do" (Detterman & Sternberg, 1993, p. 10). Detterman and Sternberg further argued that where far transfer was present, the participants extracted generalized principles and applied them to new situations different from instructional treatments. Contrary to Detterman and Sternberg's (1993) assertion that far transfer did not exist, their argument did support the idea that the learner quilts together pieces of past associations, personal

history, and context to create learning. This kind of learning is not determined by the experimenter, but by an individual process of acquisition of known and unknown knowledge (Newman, 2010).

Future Learning Transfer

Despite decades of research devoted to studying transfer of learning through the lens of an experimental construct, the evidence of transfer remains rare (Bransford & Schwartz, 1999; Cornford, 2002; Lobato, 1996; Newman, 2010; Rebello et al., 2007). Research using methodologies in Category 1: Standard transfer and Category 2: Context transfer found that students are unable to recognize similarities between the learning context and the transfer context (Bransford & Schwartz, 1999; Lobato, 1996; Newman, 2010; Rebello et al., 2007). Some researchers suggested that the experimenter cannot determine the activation of transfer knowledge; it is the learner that determines the pieces of past knowledge used to make sense of and respond to new context (Dufresne et al., 2005; Mestre, 2005; Rebello et al., 2007). The majority of traditional transfer research is concerned with methodologies and environments for transfer and are not oriented toward the individual learner's activation of previous learning (Bransford & Schwartz, 1999; Lobato, 1996; Newman, 2010; Rebello et al., 2007).

According to Bransford, Vye, Stevens, Kuhl, Schwartz, Bell and Reeves (2005)(2005), the point of transfer is not to replicate teacher knowledge but to contribute to the student's ongoing construction of new knowledge. This does not mean that traditional transfer research is irrelevant, only that it does not provide a good venue for future learning, and is more realistically a "renovation and expansion of previous knowledge (i.e. the experience of dealing with new situations in new settings)" (Hager & Hodkinson, 2009, p. 2).

Category 3: Construction of Knowledge Transfer

The third category is construction of knowledge. This category is not defined by the contextual similarities between initial and new learning (Newman, 2010). Transfer in construction of knowledge is characterized as transfer specific to individual students and is a function of the student's inclination or ability to make connections between the two situations (Lobato, 1996; Newman, 2010; Rebello et al., 2007). Researchers such as Bransford and Schwartz (1999), Dufresne et al. (2005), Lobato (1996), Rebello et al. (2007), and Newman (2010) referred to Category 3: Construct of knowledge transfer as alternative approaches to measuring transfer of learning. Specific construct of knowledge transfer types are called activation of prior knowledge (Dufresne et al., 2005), PFL (Bransford & Schwartz, 1999), and *actor-oriented* transfer (Lobato, 1996). All have the common feature of transfer as individually constructed and a dynamic process (Bransford & Schwartz, 1999; De Corte, 2003; Dufresne et al., 2005; Lobato, 1996; Mestre, 2005; Rebello et al., 2007).

Construction of knowledge transfer is a more active evaluation of transfer. Viewing transfer from a learner's perspective rather than the researcher's perspective allows the learner to choose and evaluate learning strategies, consider resources and receive feedback (Bransford & Schwartz, 1999). More specifically, students select and bring together necessary pieces of previous experiences and knowledge to activate and create meaning rather than directly applying a transfer task (Mestre, 2005; Schwartz, Chase, & Bransford, 2012). Construct of knowledge is existentially rooted in the notion that learning is internal to each individual learner (Bransford & Schwartz, 1999; Hager & Hodkinson, 2009).

Actor-oriented transfer is described by Lobato (2003) as "the personal construction of relations of similarity across activities" looking for the influence of prior learning on current

learning and how subjects interpret similarities (p. 20). In 1996, Lobato examined algebra students learning mathematical concepts of slope and slides by applying a traditional transfer experiment design. Using a direct application as a sequestered problem solving traditional transfer task of determining the slope of a playground slide, Lobato found the students did very poorly on the transfer task. Later, she reinvestigated how the students constructed knowledge using a qualitative interview and discovered the students had learned the material, but were not able to transfer the task due to the design of the task (Lobato, 2003). During the qualitative data collection, which included interviews on the first, fifth, and last day of the experiment, students were able to demonstrate new knowledge and the students perceived the transfer task as different from the instructional material (Lobato, 2003). The design of her study was to find whether “evidence for actor-oriented transfer is found by scrutinizing a given activity for any indication of influence from previous activities and by examining how people construe situations as similar” (Lobato, 2003, p.89). This suggested that there are no sudden insights in the instance of transfer between the initial learning events and a transfer task (Marton & Pang, 2006).

Dufresne et al.(2005) examined undergraduate engineering students in an introductory physics class. The study consisted of a traditional transfer experiment and qualitative interview data. Dufesne et al. stated that most of the students had previous experience in motion from a physics course or life experience. The students were presented with two balls and a track and were told to predict which ball would win the race down the track. The instructors had provided students with information about slope and properties of physics in previous class periods. The results of the traditional transfer experiment noted a failure to transfer physics information provided during previous instruction. The interviews revealed the students did not use the instructional material from previous classes because they (the students) thought the context in the

new task was different from the transfer task (Dufresne et al., 2005). The authors concluded that the traditional transfer experiment design did not provide insight into what knowledge the student activated (Dufresne et al., 2005). To understand what knowledge that students activate and apply to new learning, Dufresne et al. recommended adding a qualitative dimension.

Another context transfer study was Rebello et al (2007), which investigated transfer of mathematics and physics. Rebello et al. (2007) conducted a context transfer study exploring the transfer of mathematics to trigonometry and physics. One part of the study investigated transfer of learning by college students whose majors were in engineering and physics. The transfer involved transferring calculus to a calculus-based physics course. The second part of the investigation involved the transfer of trigonometry to algebra and trigonometry-based physics course taken by life science majors. Rebello et al. (2007) did not find evidence of transfer from trigonometry class to physics using a traditional quantitative methodology. However, when data collection was broadened to include qualitative data drawn from interviews with the students and teacher, evidence of transfer was found in “how students assemble their knowledge elements to construct problem solutions” (Rebello et al., 2007, p. 4). The authors further stated “this observation is not a weakness of our study; rather it underscores the importance of examining transfer from a variety of different perspectives” (Rebello et al., 2007, p.27).

Singley and Anderson (1989), two cognitive scientists who have reviewed many volumes on traditional transfer have observed that, “there has yet been no strong demonstration of the existence of [traditional] transfer... [A] long line of research (starting with the work of Thorndike and Woodworth) cast a gloomy pall on the prospect of [traditional] transfer” (p. 26). They further noted experimental evidence showed that transfer is not based on abstract, researcher-determined knowledge between the transfer event and the student, but is specifically a

function of the degree that transfer tasks share cognitive elements (1989). Research conducted by Singley and Anderson (1989) looking at skill acquisition illustrated the point made by researchers to re-conceptualize transfer.

Researchers began re-conceptualizing transfer in the mid-1990s, which advanced transfer theory and research (Bransford & Schwartz, 1999; De Corte, 2003; Dufresne et al., 2005; Lobato, 1996; Rebello et al., 2007). The result of rethinking the research approach to transfer also changed the criteria for evaluating successful transfer. In other words, learners were no longer viewed as passive recipients of information and transfer as static learning (Bransford & Schwartz, 1999; De Corte, 2003; Dufresne et al., 2005; Rebello et al., 2007). Learners actively construct knowledge partly with past knowledge and partly with the physical or social context of the new situation (De Corte, 2003). Bransford and Schwartz (1999), Dufresne et al. (2005), Labota (1996), Newman (2010), and Rebello (2007) viewed transfer as more aligned with the school of thought that learning is an active and a constructive process, which is individualized by the learner.

Preparation for future learning takes a slightly different approach in determining the presence of transfer. Bransford and Schwartz (1999) first used the term sequestered problem solving after a failure to transfer experiment using a traditional transfer methodology. The researchers designed their study to examine predetermined evidence of previous instruction (Bransford & Schwartz, 1999). Bransford and Schwartz referred to this narrow approach of determining transfer as *direct application of transfer*, coining the term preparation for future learning (PFL) that focuses on extending learning rather than examining a static assessment of transfer as is the common approach of traditional transfer research (Bransford & Schwartz, 1999). The major aspect of this approach shifted the focus from a single task to assessing transfer

on the student's ability to "learn in a knowledge rich environment" (Bransford et al., 1999, p.68). Since PFL does not look specifically at a single transfer task in a sequestered problem solving environment, there is evidence of positive transfer, which is commonly hidden by the sequestered problem solving model (Bransford & Schwartz, 1999). Traditional transfer "...short-term learning situation tests often seriously underestimate the amount of transfer that students display from one domain to another" (Bransford & Schwartz, 1999, p.75).

Transfer of learning as the construction of knowledge is different than transfer outlined in Categories 1 and 2. Construction of knowledge addresses transfer specific to each learner and the individualized application of previous learning to a new task. The major characteristic of the construction of knowledge is the shift from viewing transfer as a researcher defined single transfer task to assessing transfer as a learner centric approach. Approaching transfer from a student-centric methodology provides a more accurate interpretation of past student learning. Expressing past learning more accurately in new situations may reveal that far transfer is not rare, but rather a continual reinvention of learning (Lobato et al., 2012).

Category 4: Transformational Transfer

Category 4: Transformational transfer is the farthest from the initial learning experience and further separated from the others by the definition of transformational transfer (Newman, 2010). Transformational transfer is "the construction of knowledge, identities, and skills, or transformation, rather than the application of something that has been acquired elsewhere" (Beach, 1999, p. 119). Transformational transfer is not concerned with the application of learning using past experiences in new learner situations; instead, it approaches transfer that transforms individuals, organizations, and society and is transformational to the learner (Newman, 2010).

Beach (1999) departed from using a traditional definition of transfer of learning when studying Nepali high school students. Beach defined transitional transfer as: the relationship between a person, the social context and the ways they create meaning among their identity, learning, and social context. Beach's study involved Nepali high school students' and their use of math. He found that math skills were not transferring in a traditional construct. To a Nepali high school student, there was no context for math until math had a social consequence specific to the individual's life, such as when math was important to the sale of product at the market. In his Nepali math study, Beach argued transformational transfer is learning that transforms identity and social organizations, which involves a developmental change in the relationship between the individual and his/her social activities. Those who work with transformational transfer argue that the individual is changed by the interaction between themselves and the social activity (Hager & Hodkinson, 2009).

Transformational transfer expands the transfer of learning discussion to the sphere of individual and social transformation. By all accounts, transformational learning is important to individual, workplace, and societal expansion. Areas of impact include job changes and life transitions such as from secondary education to higher education, retirement, legal adulthood, and parenthood (Hager & Hodkinson, 2009; Marton & Pang, 2006). While furthest from the original learning experience, transformational transfer is no less important to the discussion of transfer of learning. However, the distance and application of learning is beyond the scope of this research and best left to a study of learning as a social intervention.

Conceptual Framework

The conceptual framework of this research study examined the transfer of learning through the lens of Dufresne et al.'s (2005) transfer of learning definition, which is "the

complex, dynamic process leading to the highly selective activation and application of knowledge in response to context” (2005p. 158) and Bransford and Schwartz’s (1999) PFL as an individual learner’s construction of knowledge. Preparation for future learning accounts for a learner’s ability to learn, explore new information, and relate that learning to previous experiences (Bransford & Schwartz, 1999). Dufresne et al.’s (2005) definition accounts for individualized activation and application of learning and Bransford and Schwartz’s (1999) concept of transfer allows for the selection of individualized activation of previous knowledge in new situations.

This study examined the central issue surrounding graduate education—the transfer of classroom learning to the educational workplace. The research approach in this study aligned with Newman’s (2010) Category 3: Construction of knowledge transfer, emphasizing the broad, productive, and individualized activation of prior knowledge. A complete reconceptualization of transfer of learning is beyond the scope of this research. By focusing the scope to the application of future learning to graduate level education, this study demonstrated an in-depth appreciation of individual students’ use of constructed knowledge in future application.

The transfer definition used for this study was “the process leading to the highly selective activation and application of knowledge in response to context” (Dufresne et al., 2005, p. 158). With this definition, the research must account for all the aspects of each individual learner, classroom experience, prior knowledge and experience, as well as individual motivation. Past experiences influence actions in the present and require the researcher to separate graduate degree experiences from other experiences.

Learning begins with the first breath of life and over the time a person compiles volumes of experience from life’s tests, formal education, relationships, and moments of personal friction.

Figure 2 illustrates the conceptual framework of this study and shows how the embodiment of past learning experiences, a person's own life's journey, and educational background interact with transfer of learning.

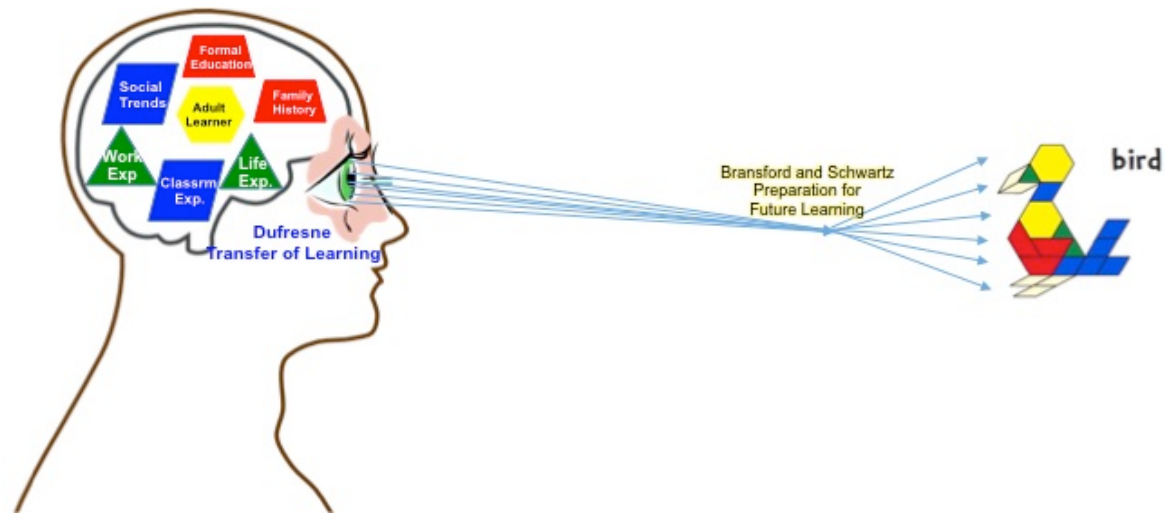


Figure 2. Conceptual framework. Shown is a conceptual drawing by the researcher to provide a visual representation of how Dufresne et al. definition of transfer of learning interacts with Bransford and Schwartz's preparation for future learning to activate individualized constructed knowledge transfer.

A person compiles volumes of past experiences and each person recalls these experiences through the lens of Dufresne's (2005) transfer definition by dynamically and selectively activating pieces of past experiences. Each new learning situation is further focused using Bransford and Schwartz's (1999) PFL definition by applying, influencing and extending a person's own learning to guide future behavior, creating a new volume of learning and understanding.

This research examined far transfer of learning through the lens of constructed knowledge transfer using Dufresne et al.'s (2005) definition of transfer and Bransford and Schwartz's (1999) definition of PFL. The common experience of all participants was a graduate program and a workplace environment conducive to activation and application of previous

experience. Since the ultimate goal of graduate level education is the creation of prepared minds, and to positively translate the graduate level education into professional practices, this study explored transfer of learning in an under-researched population—graduate students (Fortino, 2012).

Summary

The literature review showed that most transfer of learning studies relied on a quantitative approach to determining transfer. The review of literature also reported that traditional transfer fails to establish that the presence of far transfer. Starting in the mid-1990s a group of researchers began looking at transfer from alternative perspectives than traditional transfer methods. These groups of researchers view transfer as a construction of knowledge from the perspective of the learner and as an activation of past knowledge by the learner. To detect far transfer these same groups of researchers suggest that an aspect of qualitative research be included in a transfer of learning study.

This literature review revealed a gap between the subjects included in transfer research. As stated earlier, the majority of research on transfer of learning is conducted at secondary or post-secondary levels. Little research has examined graduate level instruction. No research was found that studied graduate level education from the perspective of the graduate learner. The conceptual framework that emerged from this literature review established the context for the research study described in the next chapter.

Chapter 3 - Methodology

Introduction

This was a qualitative study that explored graduate level transfer of learning of educational experiences as to the extent to which it influenced current practices in the educational workforce. The research was a multi-case study. Data collection included the use of semi-structured iterative interviews supported by multiple observations, participant background information, and an analysis of participants' reflective journal and the researcher's journal. The use of multiple sources of data allows the researcher to investigate the topic from different perspectives, establishing triangulation (Creswell, 2007; Yin, 2013). This study was a theory and concept-driven study framed with Bransford and Schwartz's (1999) PFL theory, and the concept that transfer of learning is not static, but a multidimensional application of past experiences and learning by the learner (Dufresne et al., 2005).

This chapter presents a problem statement, purpose statement, research question, the case study methodology, and the rationale for the research design, research population, and summary of the research design. The validity of the research is captured in the following sections; human rights protection, pilot study review, data collection, methods of data analysis, and potential interview questions. The chapter concludes with the issues of trustworthiness, researcher background, limitations, research bias, and a chapter summary.

Problem Statement

It has been argued that graduate students are not sufficiently prepared with a broad range of skills necessary to meet the workforce challenges (Council of Graduate Schools, 2011). Graduates' lack of preparedness for the workforce is a reoccurring theme within transfer of learning research literature, suggesting that far transfer is rare (Detterman & Sternberg, 1993;

Dufresne et al., 2005; Haskell, 2001). Given that the vast majority of transfer of learning research was conducted with secondary and post-secondary (undergraduate students) there is a need to research graduate level education and transfer of learning. With an ever-growing need for a prepared workforce with graduate degrees, there is also a need to understand whether graduate educational experiences inform educational workforce practices. A study of graduate level transfer of learning informs the discussion of the occurrence of far transfer and sheds light on the ability of higher education to prepare graduates to meet workforce demands.

Purpose Statement

Using Bransford and Schwartz's (1999) PFL as the framework for transfer of learning, the purpose of this study was to investigate how graduate students describe their past experiences of the 18 credit hours of core curriculum in this Adult and Continuing Education degree program and the extent to which it created new meaning and influenced current practices in the educational workforce. The purpose of this study was to investigate explicitly how graduates' past experiences and the activation of coursework learning connected in an educational workplace environment.

Research Question

This study had one Primary Research Question and two Secondary Research Questions.

The Primary Research Question was: What are graduates' perceptions of their ability to transfer their learning to a teaching environment with adult learners after completing 18 credit hours of core curriculum in this Adult and Continuing Education degree program at a midwest university?

Secondary Research Questions were:

1. What are graduates' current educational workforce practices?

2. What did graduates report having learned from their program that influenced their instructional practices?

Rationale for Qualitative Research Design

A qualitative research design was selected because qualitative research facilitates the capture of participants' experiences (Bloomberg & Volpe, 2012). Traditional transfer of learning research involved quantitative or qualitative data gained from laboratory settings where the researcher determined what and if transfer occurs (Rebello et al., 2007). Quantitative research begins with a hypothesis and focuses on quantity, empirical data, random samples, inanimate instruments, deductive analysis, and precise findings (Merriam, 1998). Qualitative research focuses on fieldwork, purposive samples, inductive analysis, and rich descriptive findings (Bloomberg & Volpe, 2012). Since the majority of traditional transfer research was a quantitative design and has resulted in the lack of transfer evidence, a bounded multi-case study using iterative interviews and observations is better suited for determining a rich "thick" description of complex experiences (Lobato, 1996; Merriam, 1998). Creswell (2007) described qualitative research "...as a situated activity that locates the observer in the world" (p. 36).

Creswell (2007) described five approaches to qualitative research: phenomenology, ethnographic, narrative, grounded, and case study. The method that is best suited for this research is a bounded multi-case study. According to Yin (2009), a case study investigates the connection of the existing phenomenon and the real-life context when boundaries are not quite clearly evident. In this study, the purpose of the guiding research question, secondary-questions, and the data collection methods is to determine the existence of far transfer, when transfer is viewed as an individualized activation of previous experiences. Participant recruitment for this

study targets candidates with the following specific qualifications relevant to the Adult and Continuing Education degree program.

1. Completed all 18 credit hours of core curriculum of the Adult and Continuing Education degree program at a midwest university. This was chosen because it is a common requirement of both the master and doctoral program.
2. Currently teaching adult learners at a higher education institution.
3. Completed at least one full year of instructing adult learners at a higher education institution.

The conceptual framework of this study uses Bransford and Schwartz's (1999) framework for transfer of learning as a PFL. This conceptual framework examines transfer of learning from graduate students' application of educational experiences to the educational workforce. Using multiple semi-structured interviews supported by participant background forms, observations, and participant reflective journals, the with a small sample was to facilitate an in-depth understanding of how each participant describes the activation and application of past learning in future learning contexts. The multi-case study is bound by restricting the population to one specific degree program and work setting to higher education with adult learners.

Case Study Methodology

According to Merriam (1998), case studies are particularly useful if the researcher is interested in understanding a process. In defining process, Merriam (1998) discussed monitoring, causal explanation, and uniqueness. The most important role played by the researcher in the process of a case study is monitoring (Reichardt & Cook, 1979). Monitoring is described as the researcher gaining context and understanding of the population, noticing the extent of the impact

on the sample, and providing feedback to the process. The second aspect in the process is causal explanation, described by Reichardt and Cook (1979) as, “discovering or confirming the process by which the treatment had the effect that it did” (p.21). Uniqueness of a case study reveals knowledge about the phenomenon (Reichardt & Cook, 1979). Merriam (1998) further described the meaning of uniqueness citing Abramson (1992), “...such data can facilitate ... prediction by documenting infrequent, non-obvious, or counterintuitive occurrences that may be missed by standard statistical (or empirical) approaches” (Merriam, 1998, p.190). This multi-case study used an iterative interview process blended with participant observations, participant reflective journals, and participant background forms to explore the phenomenon of transfer of learning.

As Yin (2002) noted, when a researcher cannot influence the specific and relevant behavior and events, the preferred research design is a case study. This case study was bounded by the exclusive qualifications of the participants. All the participants were had completed the 18 credit hours core curriculum of the Adult and Continuing Education graduate degree program at one institution. Additionally, each participant was working in the field of education as an instructor or facilitator at institutions of higher education. Given that the objective of this study was to capture the individual activation of previous experiences in rich, deep detail using interviews, participant background information forms, observations and participant reflective journals, a multi-case study provided a logical design.

Research Population

The population for this research study was a diverse mixed population of participants who had completed the 18 credit hours core curriculum of an Adult and Continuing Education graduate degree program at a midwest university. The Adult and Continuing Education degree program is designed for working professionals who balance work, family, and a desire to

continue their education. As such, the classes are offered at night, online, or as a blend of face-to-face and distance learning. The Adult and Continuing Education degree program has a core of 18 credit hours required for all graduates to complete. The content of these courses has remained relatively static over the investigation time period. Graduates from the program may have taken different elective courses, but all completed the 18 credit hours of core courses.

Not all graduates of this degree program enter into the workforce as educators; some pursue administrative positions or positions with non-profit organizations. Others graduates are not employed, pursuing the degree for personal educational growth. This study focused on the portion of the graduate population who are teaching adults at an institution of higher education. When combining the specific qualifications of having completed the 18 requisite hours of core courses of the Adult and Continuing Education degree program, entering into the workforce as an instructor at an institution of higher education, teaching adult learners, and having taught at that institution for more than one academic year, the available research population for this study has approximately 250 qualified participants. When narrowed geographically to an area the researcher could access, the number of qualified participants decreased to about 50 participants.

Sample Population

“The validity, meaningfulness, and insights generated from qualitative inquiry have more to do with the information richness of the case selected and the observation/analytical capabilities of the researcher than the sample size” (Patton, 2002, p.245). Purposeful sampling is a typical method used for case study research and is believed to yield rich data (Merriam, 1998; Yin, 2013). According to Kvale and Brinkmann (2009), there is no fixed criterion for what size sample constitutes a good case study. The recruiting process started by sending out a single email to perspective participants. Of the nine who responded to the email and after reviewing

qualifications of those who responded the researcher was able to recruit four participants. Given the research method of iterative interviews blended with multiple observations and a participant reflective journal the sample size was adequate to conduct the study. A smaller sample of participants is valid when iterative interviews are conducted, and that small sample size is a sufficient number to conduct qualitative research due to limited researcher time and resources (Kvale & Brinkmann, 2009). Participants were volunteers from a single graduate program, had completed the 18 credit hour core curriculum, and were actively instructing adult learners at higher education institutions in the midwest metropolitan geographical area. In addition, they had completed one year of teaching/instructing at this institution. While there were only four participants, they represented three different types of academic programs among four different institutions of higher learning, and presented a richly diverse set of individual teaching experiences.

The criteria for inclusion in the study presented a sample population who met all three requirements. First the participants must have completed all 18 credit hours of core curriculum of the Adult and Continuing Education degree program at a midwest university. Participants were required to be currently teaching adult learners at a higher education institution. The foundational theory for this research stated that transfer of learning is applied to the educational workforce. Therefore, each participant needed a venue through which to transfer his or her learning in the workforce. Third, each participant must have completed at least one full year of instructing adult learners at a higher education institution. First year instructors often focus most of their time on presentation and understanding the course material. This criterion was important because little time remains for first year instructors to apply the art to the science of instruction, which most

likely would include material from their degree experience. The sample size of this study was four participants.

Overview of Research Design

The following is a step-by-step summary of the steps taken to complete the research study.

1. Received approval from Kansas State University IRB.
2. Obtained a list of graduates from the degree program.
3. Conducted a pilot study with two graduates who met the selection criteria, not involved in the study.
4. Based on the feedback from pilot participants, appropriately modified the study design, procedures, and interview protocol.
5. Using the provided list of graduates, sent emails to the population for volunteers.
6. Met with each volunteer to explain the purpose and scope of the study, and clarified any questions or concerns about the personal identifying information and research methods.
7. Once the researcher received the signed consent forms, participants completed the participant background information form with the researcher and established interview and observation schedules. Participants received a copy of the consent form and a bookmark outlining the purpose and scope of the study.
8. Conducted three semi-structured iterative interviews with each participant and collected participant reflection journal at each interview.
9. Observed each participant teaching two times to validate interview responses and classroom methods.

10. Once participants' observations and interviews were completed, the transcriptions of interviews was completed, reviewed and provided to participants for member checking.
11. Using thematic data analysis, the researcher coded and analyzed data.
12. The researcher also coded and compared his field notes, participants' course material, observation data, participants' reflective journals, and researcher's journal reflections to further triangulate the data.
13. All participants were given a pseudonym. Their personal identifiable information was kept separate from all coded data throughout and following the research outcomes.
14. All research-related data will remain securely stored for five years, as directed by the Institutional Review Board (IRB) guidelines.

Human Rights Protection

Numerous times throughout history, researchers have demonstrated a propensity toward unethical procedures in human research (Creswell, 2007). The balance between ethical human research and the protection of the research population is critical to uncovering the human condition and educational relevance (Creswell, 2007; Merriam, 1998). This study adhered strictly to the ethics of human research outlined in the policies of the IRB of Kansas State University. All participants were given a pseudonym.

Data collection began once IRB approval was obtained. The researcher ensured an ethically sound setting for interviews. Interviews were conducted in common areas, participant was notified the interview was being recorded and a copy was made available to the participant. Strict protocols of transparency of questions, pseudonyms assigned to participants and availability to interview procedures, observation procedures, and deliberate security of coding methodology were used to ensure the protection and rights of the study participants. Prior to

conducting the research, each participant completed the informed consent form (see Appendix A). Participants had the right to withdraw from the study at any time.

The transcriptionist was from another town and not associated in any way with the participants. For the interviews, the transcriptionist was given pseudonyms for the participants, so their identity was hidden.

Data Collection Method

“Qualitative researchers are interested in understanding the meaning people have constructed...how they make sense of their world and the experience they have” (Merriam, 1998, p. 6). This study attempted to capture learners’ transfer of learning from the 18 credit hours core curriculum in Adult and Continuing Education using the primary data collection sources of in-depth semi-structured iterative interviews, supported by participant observations, participant background information forms, instructor web pages (when available) and an analysis of participants’ reflective journals. A document review of the Adult and Continuing Education degree syllabi, program outcomes, and learning objectives were used to further the connection between classroom learning and practice, and the potential origin of these practices. Additionally, the researcher kept field notes, reviewed participant course material, and maintained a research journal to triangulate the data.

Population

A list of graduates between 2010 and 2015 of the Adult and Continuing Education degree program were obtained from the institution. An email was sent introducing the study and inquiring whether the graduates were currently teaching adult learners at a higher education institution and had completed at least one year teaching adults in a higher education setting.

Respondents who were willing to participate in the research study were given a \$25 Starbucks gift card for their time and input after they agreed to the study. Additionally, each was provided a journal notebook to record reflective thoughts during the study.

Semi-structured Interview

Yin (2013) asserts that interviews are the most important source of evidence in a case study. As the most important source, the advantages of including interviews as the qualitative means of data collection are: (a) the ease in evaluation, (b) little variation in a single interviewer, (c) interviews are short and concise, and (d) analysis is simple (Patton, 2002). “Interviewing is necessary when we cannot observe behavior, feelings or how people interpret the world around them... interviewing is also the best technique to use when conducting intensive case study of a few selected individuals” (Merriam, 1998, p.72). The purpose of conducting an interview is to obtain a rich and descriptive view of another person’s perspective and to uncover aspects of the study which otherwise cannot be observed (Kvale & Brinkmann, 2009; Patton, 2002).

According to Kvale and Brinkmann (2009) one of the metaphors of interviewer is the research as traveler. Much like a traveler to a distant land, a researcher must gain an understanding of his or her surroundings, communicate with participants, and become familiar with how all the aspects of the study are intertwined to create understanding specific to the journey. Interviewer-as-traveler was particularly relevant to this study as the research intent was knowledge construction. The interview process in this study was unlike past transfer research, since the intent was to determine the existence of transfer as a PFL, which is individual to each learner.

The semi-structured interview began with an open-ended, leading question and allowed the interviewer to develop the emerging views of the respondent (Merriam, 1998). Both the

researcher and participant determined each interview session to ensure the following interview was scheduled after the next observation. The location of each interview was at the convenience of the participant. During the conduct of the interview, the participant was notified of the recording device, the anticipated length of the interview and that questions specific only to the study would be asked.

Prior to each interview, a detailed rendering of the interview site was added to the researcher journal. An interview procedure was designed to record interview room or environment, questions, and non-audio communications; copies of Appendix C form were used with each interview. The procedure was vetted by the major professor and validated during the pilot study. Prior to the first interview a participant background information form was completed by the participants and collected during the initial meeting with each participant (see Appendix B). The interviews were conducted at a location convenient for the research participants. All interviews were conducted in locations with minimal interruptions or distractions such as classrooms, faculty lounges or conference rooms. In an attempt to reduce interview variance to the greatest extent possible, each subsequent interview was conducted at the same location as the previous interview.

Redundant methods of recording the interview were used to ensure every word was recorded. A system of double recordings was used to capture the nuances of each interview. The primary method of data recording was a Sony digital recorder. An iPhone voice memos application with external microphone was used as the secondary recording device. Each initial interview session was approximately one hour in length.

Each interview session had a different set of questions. Questions for session one were based on the participant background information form completed by the participant (see

Appendix B). These questions provided the researcher insight into the participant's teaching philosophy, classroom methods, as well as degree program and teaching background. Questions for the second session were primarily formulated from the observation that preceded the interview, questions from the participant's reflective journal, as well as any areas of clarification from the interview one transcripts. The third and final interview followed the second observation and included questions similar to interview two but focused on the second observation and reflective journal. The three interviews framed the two observations to allow the researcher to develop a deep rich narrative for each of the case studies.

Observations

Merriam (1998) stated that observations are an equally important primary source of data collection for a case study. Patton (2002) stated interviews and observations are separated in three distinct ways. First, through direct observation the recorder is better able to understand and capture context of the situation. Second, firsthand experience with the setting allows for an open and inductive inquiry. Third, the observation allows the observer to see things that are routinely missed by just using an interview setting. In a case study, the observation and interview are interwoven as equally important parts of data collection. The pilot study and major professor validated the observation protocol. Researcher observation notes and reflections provided a descriptive record of the physical setting, integration of participant interview comments, and participant's non-verbal responses (Merriam, 1998).

An observational protocol was designed to record instructional methods, classroom setup, material being covered and the general student population information, copies of observation protocol from where used with each observation (see Appendix D). The process of observation began with scheduling dates with the participants. Dates were selected based on available time,

sequence of interviews, and class periods that involved teaching practices and not test periods. Once observation times were selected, the participant provided the researcher a copy of the syllabus and a short introduction to the class topics and class outcomes. This information was included in the research journal and added to the observation field notes. Prior to the observation, the researcher and the purpose of the observation were introduced to the students. Students were informed that their methods of learning, actions and personal activities, and learning outcomes were not the focus of this study.

At the conclusion of each observation, the researcher reviewed notes and researcher reflections before departing. The observation notes provided a descriptive record of the observation and included the formulation of interview questions as part of the next interview. The researcher recorded pertinent administrative data of the observation, student numbers, gender, seating, class start and finish time, transition times from lecture to activity, and other instructor movements during the class session as means of ensuring all salient points were captured and included in the following interview round. The field notes or reflections were collected for coding and subsequent interview questions. All information, data, and findings associated with the observation process of this study were coded, color-coded for the participant, converted to digital data files, stored, and secured for a period of five years.

Participant Reflective Journal

“Reflection and introspection are important parts of field research” (Patton, 2002, p.264). Participant reflective journals provide an additional perspective that is otherwise lost when observations and interviews alone are used. A journal was delivered to each participant during the initial meeting. In each journal, the following reflective focus areas were written.

1. What types of techniques, tools, check-on-learning, etc. do you typically use? Where did you get the idea these would improve learning in your classroom?
2. Talk about class preparation, how the class session went, and your techniques used for a class.
3. How do you teach adults and why? What do you contemplate as a teacher of adults? Explain how each has impacted your classroom presence and teacher-student interaction?
4. During your preparation for class, reflect on how you will teach the class, what activities you will use, and how you will engage the students.
5. After this class session reflect on your teacher-student interaction. How did it go? What would you change if teaching this class again? What method did you use to check on learning?

The journal provided insight into the participants and their experiences between each interview and observation. The reflective journal allowed the participants to collect thoughts and practices when the researcher was not present. The reflective journal reflections were added to subsequent interview sessions as a form of reintroduction to the study and as a means of facilitating a more in-depth discussion into the participants teaching practices.

Participants retained the journals and continued to take notes, make reflections, record thoughts, and write down questions throughout the study. However, at each interview, the participant provided a copy of the contents of the reflective journal, which was added since the previous interview. The researcher would review the update and use it to inform future interview questions. At the conclusion of the interviews, the researcher collected the reflective journals. Clarifying questions and themes were incorporated in the final interview. All field notes taken

from reflective journals and journal discussions were categorized and coded separately from interview field notes and coding. At the conclusion of the study, the reflective journals were classified by participant, retained, and secured for a period of five years.

Researcher Journal and Field Notes

Patton (2002) stated the researcher is an instrument of qualitative methods. In qualitative research methods, the instrument is a real, live person who makes observations, takes field notes, asks interview questions, and interprets responses. “Self-awareness, then, can be an asset in both fieldwork and analysis” (Patton, 2002, p. 64). Field notes record questions, secondary questions, conversational notes, and potential themes as they emerge during the interview. The researcher’s journal is an extension of the researcher detailing each step of the data collection and analysis process. It is a notebook allowing the researcher to capture nuances of the research study throughout data collection and analysis. Specifically, the researcher journal was designed to collect personal thoughts and ideas specific to the research, modifications of the process, and ideas for questions or observation notes. The value in the research journal and field notes is that the journal provides the researcher a method of capturing modifications, additions and corrections to the research study, and ensures that changes are captured and annotated. It also provides the necessary documentation to make changes to specific portions of the research study. At the conclusion of the study the researcher journal and field notes were classified, retained, and secured for a period of five years.

Pilot Study

A pilot study is a mini version of the full-scale the study and helps the researcher refine the data collection procedures (Merriam, 1998; Yin, 2013). A pilot study was conducted with two participants drawn from the same population as those in the study. The pilot study

participants were interviewed and observed in the same manner planned for the major research participants. The initial pilot meeting took place in order to familiarize the participants with the study. A post interview and observation meeting took place to solicit feedback on the protocol and procedures of the research. The pilot study consisted of a presentation of the study procedures and protocol, participant background information forms, IRB consent forms, and a semi-structured interview. A session of each pilot participant's classroom practices was included in the pilot to validate observation procedures and protocols. The results of the pilot were compiled. Interview questions and observation administration data in the study reflected suggestions and modifications from the pilot participants. Major modifications to the study included; collection of the reflective journal at each interview instead of at the end. The other modification was the broadening of questions in the semi-structured interviews to allow more latitude for the participants to answer more openly.

Data Analysis

The metaphor used by Kval and Brinkmann (2009), interviewer as traveler, describes the process of arriving at knowledge-construction. Researcher as traveler is useful for data analysis, as the researcher must figuratively retrace his steps in the process of uncovering the study's phenomenon. The construction of research findings is the process of data analysis. This is done through the process of deconstructing interview transcripts, researcher field notes, participant reflective journals, researcher journal, and any participant course material collected to assist in understanding the phenomenon transfer of learning as a PFL. A document review of the Adult and Continuing Education degree syllabi, program outcomes, and learning objectives was used to further the connection between the data collected and proof of transfer of learning.

An outside transcriptionist transcribed the interview recordings within 24 to 36 hours after completion of each interview. The researcher reviewed, read, and listened to the transcriptions prior to member checking. Each interview recording was transcribed verbatim; all inaudible sounds and pauses were annotated using a transcription coding system. The researcher reviewed the transcripts and compared secondary recordings against the primary to ensure accuracy. After validating the transcripts' accuracy, each transcript was converted into a Word draft format that numbers each line of the text. Participants were given the transcripts to review for corrections and feedback. Participant feedback and adjustments were made using the strikethrough feature and red font color. The researcher reviewed the transcripts, observation notes, participant reflective journal, as well as researcher journal and field notes to determine potential themes and subsequent questions for follow-on interview sessions. Copies of each interview were transcribed and securely stored as a historical reference.

Determine Codes and Themes

The thematic analysis approach was used in this study to answer the research questions. This study extended across four and half months using four participants, each with three interviews and two classroom observations, a participant reflective journal, and a participant background information form. Because of this iterative approach, determining codes and themes requires continual reflection and readjustment. This process required the researcher to review each transcript and recording of interviews to determine themes. The emerging interview themes along with data extracted from participant background information form established the focus areas for the observation. After the observation, the data were again reviewed for further emerging themes and codes. This process of theme adjustment continued following each interview or observation throughout the study. The final aspect of determining codes and themes

was the participant reflective journal. Copies of journaling were provided to the researcher at the beginning of each interview session. The original journal was collected at the last interview and secured with all research data. The researcher distilled themes from both the emerging theme analysis and participant journal and used these as focus areas for the final interview.

The themes were compiled from the iterative process mentioned above and developed into categories as part of the master-coding list. The master-coding list was maintained in Excel and on white boards, each data collection method (interviews, observations, participant background information form, and reflective journal) has an individual coding sheet as a workbook spreadsheet for continuity and ease of manipulation during analysis. This process led to a set of common themes compiled from three interviews, two classroom observations, a participant reflective journal, and participant background information form. These were grouped together according to codings and aligned against the study's conceptual framework. Over 16 hours of classroom observation, 84 pages of reflective journal pages, and 5,830 lines of transcription lines of text accounted for the data collected from the participants.

Issues of Trustworthiness

“Assessing the validity and reliability of a qualitative study involves examining its component parts” (Merriam, 1998, p. 199). One of the most difficult participant biases to account for in qualitative research is the Hawthorne effect (Shuttleworth, 2009). Before discussing the specifics of trustworthiness, it is important to mention how this study accounted for the potential occurrences of the Hawthorne effect. The Hawthorne effect describes how a participant's natural behaviors are incongruent to their observable behaviors while participating in a study. This study attempted to account for the Hawthorne effect in its research design. The research design was structured so participants were interviewed before, between each observation, and after for a

total of three interviews. Participant reflective journals were copied at each interview. Interviews followed observations only after field notes, transcripts, and reflective journals were reviewed. The methodology of multiple touch points with the participant with three different data collection methods provided a strong trustworthy factor regarding the Hawthorne effect. The data collection method of an interview before, between and after each observations provided the researcher multiple opportunities to compare participant perceived teaching practices and actual teaching practices, gaining a thorough picture of each participant's true practices.

Guba and Lincoln (1994) suggested that trustworthiness of a research study is core to evaluating its worth to the field of study. Guba and Lincoln noted that trustworthiness is established using four tenants:

- **Credibility:** Confidence in the 'truth' of the findings.
- **Transferability:** Showing that the findings have applicability in other contexts.
- **Dependability:** Showing that the findings are consistent and could be repeated.
- **Confirmability:** A degree of neutrality or the extent to which the findings of a study are shaped by the respondents and not researcher bias, motivation, or interest.

The following paragraphs outline the strategies used in this study to address the four tenants of trustworthiness.

Credibility

According to Merriam (1998), qualitative researchers deal with the question of credibility by asking the question, "How congruent are the findings with reality?" (p. 201). According to Lincoln and Guba (1985), there are seven distinct methods of ensuring credibility in qualitative research: (a) prolonged engagement, (b) persistent observation, (c) triangulation, (d) peer

debriefing, (e) negative case analysis, (f) referential adequacy, and (g) member-checking. This study used three: triangulation, peer debriefing, and member checking.

Triangulation is the use of different methods of data collection to compensate for the limitation of each individual method used to ensure credible research (Creswell, 2007). Particular to this study are interviews, observations, participant reflective journals, and participant course material reviews. After obtaining consent from participants, the researcher observed and recorded activities during the instructional periods to determine transfer in action. A document review of the Adult and Continuing Education degree syllabi, program outcomes, and learning objectives was used to further the connection between participants stated words and observed practices, and the potential origin of these practices. To deepen the connection between the participant's classroom teaching methods, the Adult and Continuing Education degree program, and transfer of learning, the researcher used the participant background information forms and participant reflective journals during the final interview along with observation notes to extract deep rich results.

Peer debriefing provides an external set of eyes as a check of the quality of the research process (Creswell, 2007). Throughout the study, the researcher remained engaged with his major professor for continual feedback and discussion of program materials. This process provided a thorough external check of data collection and analysis during the research analysis phase.

Member-checking is considered by Creswell (2007) and Lincoln and Guba (1985) to be the single most important method of ensuring research credibility. During each interview, field notes were taken, the interviews were recorded, and then transcribed. Each participant had an opportunity to review the transcriptions for correctness and accuracy prior to the follow-on interview.

Transferability

According to Merriam (1998), the issue of transferability is directly tied to external validity, or finding meaning in one study and applying it to another situation. Yin (2013) addressed the common concern of case study generalization in this matter. Case studies are generalizable not to a population but to a theoretical proposition. “In doing a case study, your goal will be to expand and generalize theories” (Yin, 2013, p. 15). Bloomberg and Volpe (2012) stated the goal of a case study is not generalizability, but rather transferability. That is to say, “how and in what ways understating and knowledge can be applied in similar contexts and settings” (Bloomberg & Volpe, 2012, p.31). Toward this end, this multi-case study afforded a description of transfer of learning from the participants’ perspective, providing the basis for future discussions of graduate transfer of learning in other disciplines.

Dependability

Dependability is intricately linked to credibility. Lincoln and Guba (1985) argued that a demonstration of credibility aids in achieving dependability. In this study, the researcher adhered to a deliberate research methodology of data collection and data analysis to achieve dependable results. A further demonstration of dependability was achieved by reporting detailed accounts of all aspects of the research, chiefly; interview settings, observational site, transcripts, field notes, and researcher’s journal.

Confirmability

Patton (1990) described confirmability as the researcher’s balance between the study and their objectivity. Objectivity may be the most difficult to account for in qualitative research. In this study, the researcher was close to the subject of the study, having been an instructor at a

graduate level institution and a graduate of the Adult and Continuing Education master's degree program.

Critical to confirmability in this study was the researcher's reflective journal. A researcher journal is a diary of sorts where the researcher makes frequent and regular entries throughout the research process (Guba & Lincoln, 1994). This researcher maintained a detailed log of participant course material, each moment of data collection, raw interview notes, field notes, research reflections, and interview questions.

Researcher Background

Creswell (2007) advocated, "researchers' interpretation cannot be separated from their own background, history, context, and prior understandings" (p.39). This researchers' background, familiarity with the degree program and prior experiences may have influenced the interpretation of case study. The researcher began instructing graduate level courses in 2005 as a major in the US Army at the United States Army Command and General Staff College (CGSC). He finished his master's degree in Adult and Continuing Education in December of 2006. As a tactics instructor at CGSC, he struggled with the connection between assessments and deep learning. Learning is necessary in the workforce of leading soldiers and that learning was more than a singular assessment of memory. Using evaluations, modifying courseware, adding discourse, and leading changes to curriculum, he began to design more appropriate adult learning experiences for his students. The interest in individual learning that involved meaning-making drove his desire to investigate transfer of learning from the perspective of student deep learning. As a researcher trained in adult education principles, the researcher desired to understand the perceptions of the learner from the classroom to the workforce.

The researcher plays a critical role in both the success and potential failure of qualitative research. There is a significant responsibility afforded the researcher, who must take precautions to minimize making mistakes and missing opportunities (Merriam, 1998; Yin, 2013). While the background of the researcher allowed him to access the population, it also had the potential to introduce researcher bias. Selecting participants who taught at different institutions of higher education than the researcher minimized this concern.

In qualitative studies the researcher is the key instrument of data collection; therefore, knowing the position of the researcher in the study is important (Creswell, 2007). Field notes, participant course material, interviews, reflective journals, and clarifications to observations assist in reducing researcher biases and presumptions regarding the data (Merriam, 1998). The researcher in this study had been an instructor of adult learners for many years at a higher education institution. In a qualitative study, the researcher was part of the process and the researcher could not divorce himself from his experiences (Creswell, 2007). The researcher leveraged his instructor background and understanding of the Adult and Continuing Education degree program to interpret the data collected.

It is certain that the researcher was vested in this study. However, using a purposeful, intentionally-selected population with a very particular set of qualifications legitimized the sample population. The outcomes of the findings had no bearing on the employment or tenure of the researcher. The journey to determine the aggregate value of graduate education may have begun some years ago in personal interest. It manifests today as the potential for graduate level education to verify transfer of learning. This research was not an investigation of the value of a certain graduate program, but rather the phenomenon of transfer of learning.

Summary

This chapter provided an overview of this study's research design, data collection methods, procedures, research population, and data analysis. As initial research into the dynamic individualized transfer for future learning, the intent of this study was to determine how an individual student expresses aspects of classroom learning into classroom practices. The data collection process intended to provide greater understanding and clarification to transfer of learning research.

Chapter 4 - Analysis of the Data

The purpose of this qualitative multiple-case study was to investigate explicitly how graduates' past experiences and completion of the 18 credit hours of core curriculum in this Adult and Continuing Education degree program and the activation of coursework learning created new meaning and influenced current practices in an educational workplace environment. This study examined the application of knowledge and meaning making of four higher education instructors in their respective classrooms.

This chapter contains the analysis of each case study including the data collected from each participant's interviews, observations, instructor web pages, and reflective journals. It also provides a description of each participant's descriptive demographic information indicating teaching experience, classroom demographics, and institutional type. Using the themes from the case analysis, the cross-case analysis was completed using inductive analysis.

Overview of Research

The conceptual framework for this study was based on Bransford and Schwartz's (1999) PFL, which is a learner-centric approach to transfer of learning that focuses on the learner's ability to learn, to explore new information, and to relate new information to previous experiences. Traditional methods of measuring transfer of learning involve the researcher determining what will transfer and designing a method to test for the occurrence of that specific transfer (Rebello et al., 2007). On the other hand, PFL is the application, influence, and extension of a person's learning from their perspective. Thus, this study approached transfer as more than a test of student recall; PFL transfer is rooted in the notion that learning is internal to each individual (Bransford & Schwartz, 1999; Hager & Hodkinson, 2009).

This study was guided by a primary research question and two secondary questions designed to clearly understand how graduates perceive their ability to transfer learning into the education workforce. The research questions were:

Primary Research Question: What are graduates' perceptions of their ability to transfer their learning to a teaching environment with adult learners after completing 18 credit hours of core curriculum in this Adult and Continuing Education degree program at a midwest university?

Secondary Research Questions:

1. What are graduates' current educational workforce practices?
2. What did graduates report having learned from their program that influenced their instructional practices?

The participants of the study were adult educators in the midwest part of the US. Four participants met the population criteria and volunteered for the study. Data were collected using a participant background information form, three individual interviews, two observations of classroom instruction, and participants' reflective journal and, when available, the instructor's web page. A participant background information form was used to gather additional data from the participants to establish their experience in the field, gather information about their teaching methods, learning style, and courses currently instructing and determine a bases for their responses relative to transfer of learning by describing a memorable experience in the degree program. The interview questions pertained specifically to the graduate program, methodologies, memorable classroom experiences, and techniques used by their previous professors. The interview further explored the participants' approach to teaching, their own teaching methodologies, and their teaching techniques. The observations provided the opportunity to verify the interview statements and potential future interview topics. The reflective journal

further verified the participant's practices and reasons for practices as well as thoughts and emotions about facilitating an adult learner classroom. The instructor's web page provided another means of substantiating the instructor's practices and interview statements.

Participant Demographics

There were four participants, three female and one male, in the study. The participants' experiences ranged from three to six years in a higher education classroom after completing the 18 credit hour required core curriculum of the Adult and Continuing Education degree program. The work places represented were two community colleges, a research school of medicine technology, and a university. The composition of the participants was not intentional, rather a result of convenience sampling; these participants responded to an email request and agreed to subsequent interviews and observations.

The findings are presented as four case studies and a cross-case analysis. Data from the participant background information form, interviews, reflective journals, and observations were incorporated to address the two secondary research questions. Following the four cases, a cross-case analysis is included.

Ava

Ava graduated with an MS in Adult and Continuing Education in 2009. At the beginning of this study, Ava was entering her 11th year as an associate professor at a local community college. Her 11 years of teaching experience could be divided into three phases; prior to entering into the Adult and Continuing Education degree program—three years; enrollment period—two years; and post-graduation—six years. She was one of four faculty members in a two-year interior design degree program. Her courses varied from knowledge-level instruction in interior

design I to a studio capstone for interior design. The age of her students ranged from 16 to 60. Course enrollment varied from eight to 20 students.

Conducting the observations between interviews served a two-fold purpose. The primary purpose was to substantiate that Ava's responses in the interview were consistent with her teaching style, approach, and methodology in the classroom. The second was to triangulate the research data.

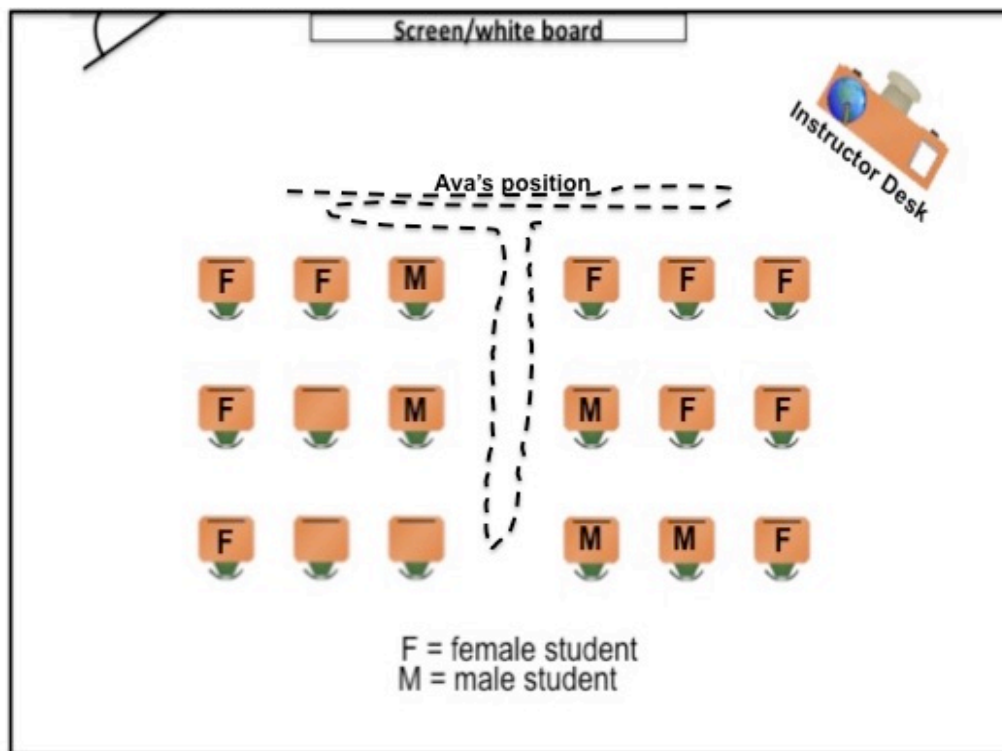


Figure 3. Ava's observation #1

Ava's two observations were conducted within a three-week span and two different courses. The second interview was conducted between the two observations. In the first observation Ava's class consisted of 15 students—five male and 10 female. The classroom was a traditional style of desks in rows and columns (see Figure 3). The class lasted two and one-half hours.

During the observation of Ava's first course, a base knowledge class in the program, she moved around the classroom in a "T" pattern, balancing her attention to students seated on both sides of the central aisle. She frequently approached and stood near students who asked questions, opening individual questions to the class for participation and fellow-student responses. Based on the researcher's experience with the Adult and Continuing Education program, the techniques used by Ava during the first observation were teaching techniques commonly used by professors in the Adult and Continuing Education degree program, verified by Ava's comments, the researcher's experience in these courses, and instructors of the courses at the time Ava was in the program. Engaging with students at the beginning of a class to energize student participation, think-pair-share, small groups, and pairs researching a class topic and presenting findings to the class were a few of the techniques modeled by professors in the Adult and Continuing Education degree program and used by Ava.

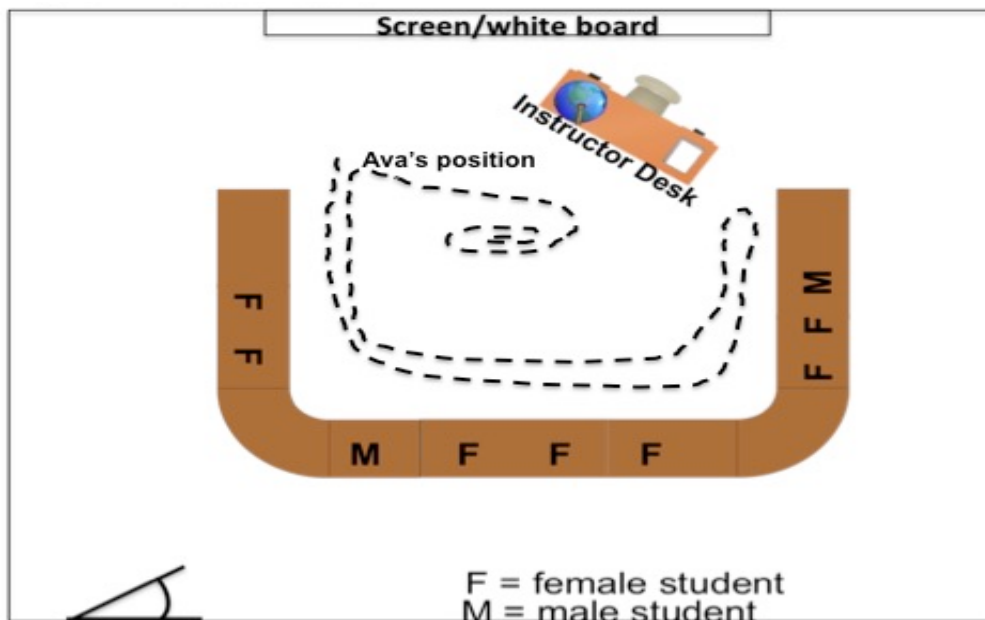


Figure 4. Ava's observation #2

For the second observation, the classroom was configured differently. In classroom two the room was setup in a u-shaped configuration (see Figure 4).

The student composition was two males and seven females. The class was a three and one-half hour class. This course was an upper level studio class. Students in this course were in their third or later semester of the Interior Design Associate of Applied Science program. The teaching style used by Ava was different than she used in the first observation with her base of knowledge course. Again, Ava moved around the classroom mirroring the desks configuration. When she made a teaching point for the class, she would step back to avoid excluding any student sitting behind her. This class contained less than 10% lecture, some discussion of their projects, and linkages of the material to other courses. The majority of the teaching style consisted of Ava interacting on an individual level with each student and discussing the details of his/her project. When she recognized a teaching point, she included all the students in the discussion.

Ava demonstrated a wide spectrum of teaching techniques during both observations. In both Introduction to Adult Education and Adult Learning and Motivation teaching techniques demonstrated by Ava are discussed later in the participant narrative. During observations, techniques used by Ava included accounting for adult learner barriers such as family issues (dropping of children at daycare or leaving class early to make it to work), allowing intellectual discourse within the class period, and providing a secure space in learning to grow students' knowledge (e.g. safe space for discourse). Ava used all these techniques during observations. Based on the researcher's knowledge of the Adult and Continuing Education degree program these techniques were modeled by professors in the Adult and Continuing Education courses.

Instructional Practices

Learning Style/Teaching Style

Ava demonstrated several other adult learning principles. She tried to understand each individual student. Ava arrived about 15 minutes early to both of her classrooms. She mentioned that she normally arrives early so she is available to welcome the students and be engaged with their lives. During the observations, the researcher witnessed her engaging five to seven students each observation. This is a method commonly used when teaching adult learners as a means of understanding each individual student. Ava helped the students to engage in discussion and created a safe trusting atmosphere by celebrating each students' successes and not highlighting low points of the students' work.

During the first interview, Ava stated how important it is for her students to understand how she thinks and how it impacts how she teaches, and how they learn.

My learning style is abstract random and then one point below that is concrete sequential. I asked the professor [in the Adult and Continuing Education program] why would I have two polar opposite so high. She said, well abstract random is probably your go to and you probably had to learn to be... I said, yeah, that is true, working in construction; I was all about the schedule and used to beat people up over the schedule. We had to make this deadline. I had to be a little bit more organized. Now that I am in teaching, I am a little bit messy... That is why when I am teaching and all of a sudden I go, oh, I got this funny story, and I interrupt myself... I will get that train back on track and we will get back to the concrete sequential eventually. But I am going to derail that train and if that is bothersome to you, I apologize, but I will tell you that is really my style. I felt like it was necessary for them to

understand, here is my teaching style, so if you do not get it, this is why.

The learning style inventory Ava referenced was the Gregorc style indicator, which was administered in the Introduction to Adult Education course in which Ava participated.

Philosophy

Ava described her instructional practices starting with a quote from Merriam and Brockett (2007), “*one might operate from an eclectic position, choosing compatible aspects of different theories to explain and guide practice*” (p. 273). She further wrote on the participant background information form, “*This eclectic position is important to me because my views are not static.*”

Understanding the link between a teaching philosophy and practice, Ava expressed that her teaching philosophy was blended into her teaching style. Ava asserted her philosophy is nonconforming and continuously evolving.

My continuously evolving philosophy style does not conform to the given structured philosophies, but is able to morph into a relevant model for my particular situation. Although Zinn (1990) might see my philosophy as contrasting and incompatible, I see my philosophy as continually growing, developing, and working with circumstances.

Zinn’s (1990) philosophy of adult education inventory is an additional instrument included in the Introduction to Adult Education course in which Ava participated.

During the second interview and verified during the second observation, Ava discussed and illustrated her teaching philosophy and style. As part of her explanation she shared her instructor web page available to students, which included her philosophy. An important aspect of her instructor homepage was Ava’s open disclosure of a philosophy grounded in a singular

understanding that student learning is not measured by an assessment or test, but through continued growth beyond the classroom.

So teaching is a process of change that is never fully completed by the teacher and learner in the classroom. This is the hardest part of teaching, as we as educators rarely see our finished masterpiece.

Throughout the interviews, Ava validated her teaching philosophy, “*educators rarely see our finished masterpiece*” when discussing the feeling a teacher gets when realizing when he/she made a difference in a student’s learning.

I had a student who stopped by to drop off a sample that was discontinued to add to our lab, ...the class that we were in at the time, was working on commercial bathroom design, which is so boring, right... She goes, oh my gosh, I’m working on those right now, and thank you for teaching them this, because I wish I would have had more experience in this... So, you know, you don’t always get to see how they’re applying their new knowledge and what they’re doing with it. And you don’t get to see those moments where they go, oh my gosh, I totally get it now.

Ava noted that learning or use of learning is not necessarily found in grade achievement. She remarked about a comment she heard from a speaker at a teaching conference: poor grades do not equal workplace success or failure. She did not think her professors from the Adult and Continuing Education program saw their masterpiece. “*I don’t think that my professors got to see the finished product, because they don’t see me every day.*”

Students First

As data collection progressed, Ava expanded on her teaching methods specifically addressing content (material) and students:

...[If] I were to rank it, I would say my students first, and then the material second... material is important, but the student is more important. I'm last... that's why I'm willing to go ahead and be uncomfortable because I think there's two other things that are more important than me.

In the Introduction to Adult Education course in the Adult and Continuing Education degree program, one of the techniques discussed is how to align the instructor's teaching approach to the student's learning level. Ava shared that she needed to align the students' learning level and learning method with the material. When needing to give a base of knowledge with other groups of students, she could use a lecture format. However, with this group of millennial students she needed a different approach to build a foundation for future learning. "... *it is a base of knowledge class, a lot of memorization, and I tell them this is a great flash card class... it does help me because now I have told them, here is what I expect.*"

Ava recognized not all teachers embody the characteristics of an adult educator and that her students may someday encounter a teacher who is not focused on student learning. She explained why learning to take notes goes beyond her course.

They need to learn the skill of taking notes because they are going to go to other classes and the instructor is not going to do this. There is going to be some business class where they are like, well this is it and they are going to do poorly. I hate to see that happen. Hopefully, I am teaching them something besides interior design, another skill...that has always been my thing. I want the students to do well no matter where they are. I will do whatever I can to make them learn even if they do not want to.

Another technique she mentioned is contracting. This technique was taught in the adult education degree program in the Adult Learning and Motivation course and addresses the

motivation of the learner. In Ava's course, she offered students the opportunity to take open book quizzes and added more hands-on activities. This was another strategy she used to motivate students to take notes.

When we got to the first exam, it was very apparent that they weren't getting the material with the grades that were received. So, at that moment, I kind of had that, okay, so, we need to maybe rethink my plan of attack, and go at this in a different manner... they all tend to have that same type of learning style where they want more hands on ... I do open note quizzes, and I thought, well, that's a fantastic idea. Now I can get them to take notes... Okay, I'm going to try this. It's uncomfortable for me, but I'm going to do it because it's probably the best thing for the student. That's my whole objective is that the student get the information that they need.

Later Ava described, in her reflective journal, how the class went after making this agreement with the students.

... wow, it was a different dynamic in that class. It was so much better than it had been before. Students were talking amongst themselves about their particular little minor fiber report that they were going to give, and I gave them like 20 or 30 minutes to work on that. Then when we started discussing them, it was more question-led than it was lecture-led... Now this week, I did a small activity at the beginning, smaller than that, so it was about 15 minutes. Last week was the first week that I got them to talk and we were all over the board. This week we did a lot more focusing, but the questions were on point and about the subject matter, and we didn't really get off topic as much this week. So, I think we finally found a happy medium as to where this class is going to go. So, hindsight, I'm glad I didn't just keep pushing.

Ava believed it was her responsibility to do whatever it takes to help the students learn, which are concepts addressed in three of the core 18 credit hours: Introduction to Adult Education, characteristics of the adult learner, and Adult Learning and Motivation courses with the degree program. In another of her reflections, she blamed the students' poor performance on her teaching style.

Just finished grading the exams-WOW we didn't get the material. The class average for the T/F, matching and multiple-choice part of the exam was about 82%— this is good. For the critical thinking part (short answer and essay questions) of the exam our class average was (almost 60%). Not sure how I will proceed just yet but know something will need to change.

Two days later Ava's journal entry stated a change to how she might approach the class with low-test scores.

It is an hour before my class will start and I received an email from a colleague that has given me inspiration for the class!! ... It [the article] explains how the coaching staff had to adapt to the players' way of learning. Therefore, I must too. I know this from my schooling [MS, Adult and Continuing Education] – but sometimes forget and a reminder now and again can be helpful.

In an attempt to increase note taking and learning, Ava included an activity that involved the students getting in groups of two and researching facts about selected fabrics. She handed out fabric samples and told the students to get into pairs and use any source available to them to find out about their fabric. She gave them 30 minutes to research and then each group presented the fabric to the class. When Ava was handing out the fabric, she was not directly handing the next fabric on the pile to the next student. She was selecting a fabric for each pair of students. Once every group of students had a fabric swatch, Ava began to move around the classroom, looking

in on all the groups. During this time, she did not ask questions or start conversations with the students. Some of the groups did engage her about the fabric, mostly to inform her of their discoveries. She acknowledged their findings and encouraged them to share those facts with the class. The researcher observed that she spent more time with those students on left side of her class than the right.

Student engagement is a big part of adult education. Ava demonstrated an incorporation of student engagement techniques taught and demonstrated during her time in the master's degree program. During the first observation, the teaching methods Ava used were consistent with her responses in the interview. Ava relied on activities, student engagement techniques, and lecture methods in class. Lecture constituted approximately 20 minutes of a two-and-a-half-hour class period. Her lecture during the first observation had 27 slides. Most of the slides had only pictures and captions of fabric types. The slides were used as a visual reference for the fabric swatches the students discussed after the exercise. During the class period, Ava never sat down. She reviewed the previous class material with the students and made connections to the material covered in an earlier class session observed by the researcher. When a student would ask a question, she moved closer and focused her attention on the student. After the question was asked she would step back and open the question for other students to answer. If an answer was not offered, she would respond. Once all questions were answered, the students were put into pairs to research fabric types and report their findings to the class.

Throughout the interviews and observations, Ava demonstrated her philosophy in practice. She focused her methods on teaching students how to learn.

So, what if they don't get all the information they needed when they're in school? Do they get enough information that they can make some connections when they get out and figure that out?... if

I can teach them to learn, like I'm trying to do in that class, they'll learn it without me. My intent is to change the way they think so that they can learn to how learn from anybody.

Ava went on to describe how she intends to adjust her teaching technique to accommodate the learning of this group of students. She devised a three-part plan consisting of (a) opening the class with a review of the last class period, (b) offering open note quizzes to force note taking, which will improve retention, and (c) chunk the class time into think-pair-share with a shorter lecture period to tie the concepts together. Her journal entry on September 22, 2016 stated the following outcomes of Ava's applied pedagogical practices.

22 September, after class. This was fantastic!! Students worked together to find the information...and reported back to class. Students were asking questions and making connections that I didn't see in Unit one. [Students shared personal experiences]. This was a great connect! ...They were asking each other and looking up information while the discussion was occurring so that they could participate in the discussion....Okay so I may have to give up some content because the students were so engaged and talkative that we did not get through all the topic. That is right – after the exercise students stayed engaged during my lecture (and were asking questions and taking notes)!

Ava mentioned that she had used a small group research activity in two separate classes to increase student interaction. Small groups are an activity commonly used by professors in the Adult and Continuing Education graduate degree program. Ava wrote that she put students in groups and gave them 30 minutes to research and report findings.

... students really got into it. It was great to see they were finding conflicting information...They were asking question and engaged. Again, when I started lecture the students stayed engaged...I also

noticed some of the terms we had covered in unit one – students were asking questions about: such as, embodied energy and hygroscopic. These were covered in the first unit but they didn't get it. I am going to try and fit into lectures more of the terms and definitions from unit one so maybe they will pick up that information along the way. I do see that I will DEFINITELY be giving up content.

When Ava reflected back on the semester's teaching experiences, she was pleased with the outcome of allowing the students to take open note quizzes. She further noted that she felt like additional changes were necessary to further the learning of her students, implementing practices like checks on learning such as muddiest point, flashcard reviews, and oral group quizzes.

I think there are some things that I need to do, and maybe it needs to be at the end of every lecture, just a couple questions or something, so that they know what the big ticket items were for that lecture. That's what I think I might do this time. So it's a weekly event instead of once every unit.

During one of her entries she talked about blending lecture and small group exercises.

I started with lecture this week and then put them in groups. We were discussing how man-made fibers are generated and it seemed more logical to give them some basic information and ask them to discuss that information in regards to sustainability. I had them move about the room this time – it was successful.

As we were talking about her most memorable teaching moment, Ava described using scaffolding in a studio class. In her description, Ava could describe the how and why scaffolding is used, but did not use the term. She mentioned that during Adult Characteristics her professors used scaffolding and she also recalled the technique from a textbook.

Student Generational Characteristic

Ava described her students as millennials, students who learn differently, which required her to adjust her teaching. She recognized these groups of students were not note takers. Because if they do not take notes, they perform poorly on tests. After grading the exam, she shared the following:

We just took our first exam and it was very apparent that this is not their learning style. As I was thinking about, okay what am I going to do about that... how am I going to handle that. I look at it as I kind of need to change how I'm going to teach that information, but also I'm going to have to change how they're accepting the information as well. What I've done, is after the exam, I went in and I said okay here is what we are going to do. Okay, I realize this is not your strong suit in the learning department and I will adjust my lectures from now on. I am going to try to get some more activities in here so that these [textiles] make a little bit more sense.

Specific Techniques

Ava mentioned specific teaching techniques she remembered from many of her courses. She used think-pair-share to increase student retention and to breakup lecture periods.

I give them an activity, here work with the person there that is next to you, there is the assignment, I want you to look at these things and I want you to evaluate them based on this information. Use your resources and the person sitting there. Then I go around to each group, are you getting this, do you understand, answer any questions that they are working on, instead of just lecturing.

Ava liked to use formative assessments as a means of measuring student learning before a major exam.

I like small assessments along the way. That is kind of one of the things I like to do I like to try to incorporate quizzes into what I call our book learning classes. I like to do them right before the exams so that they [students] get an idea of what might be on the exam too. It tells me what I need to go over again. For example, in the one class, the textiles class where I have got all these millennials, I am okay, I gave them the quiz they tanked the quiz, so it let me go over some of the information... in a different way.

As reported in the first interview, Ava wanted to increase the number of activities in her class to increase student participation and learning. Once class started, she used a technique known as muddiest point. Students write down the concept that is most clear and two that are the muddiest. This information is submitted to the instructor anonymously. Educators use this technique as a quick assessment of learning. If more than one student reports something from the previous class as muddiest, then Ava knows she must cover it again. She also uses it to check on learning and notes which students were mastering the topic and which were struggling.

A learner's paradigms are the way he/she view an environment, which includes their beliefs. Ava recognized paradigms influence learners and recalled an instance from her master's program classes that demonstrated her understanding of paradigms and their impact on learning.

Ava recounted an interaction with a student in one of her master's program classes. The interaction vividly described how she feels about teaching and what she wants to impart to her students. To provide background to her story, it is important to understand that Ava participated in several adult education courses taught on a military post. As a result, many of her classmates were senior officers in the Army and demonstrated strong type A personality tendencies. Ava's recollection of the following event provides a unique perspective on paradigm.

...when I was going to classes up there [referencing the military post], once I started in the program and had been around awhile

and got to know them, I was like, okay, this is going to be fun. So I distinctly remember one gentleman sort of standing there looking at me. I am like, yep, can I help you? He said, you are in my seat. I am like; I did not think we had assigned seats. So, I think it is kind of getting people out of their routine and it's not a bad thing to give them a different perspective even though they may not want it. That's what I hope to do with this class.

Later in the interview, Ava mentioned that she recognized her quiet students were sitting together while the more vocal students were forming their own groups. She felt like she needed to move the students around to change the dynamics of the learning environment.

Just because I could see such a big difference in the two sides of the classroom, I know that I need more of a mix. I think it will help both sides of the classroom because the stronger, more vocal people need to understand how to work with the people that are not, because it doesn't mean that they're not doing well... they are not as vocal.

Relevance of classroom learning to life experiences is an important principle of teaching adults. They need to make connections between what they are learning and their profession or their life. Ava described how she could demonstrate to the students the relevance of the material and the necessity to learn. She accomplished this by a fieldtrip and outside of class readings.

... the field trips are going to be valuable. It's an opportunity to meet potential employers, learn more about the industry as it works in local metropolitan site.

Adult's Commitment

Ava demonstrated that she understood adults have multiple commitments and school is not always their priority, *"I would say, probably 95% of my students have either a job, a family,*

something outside of class that's, their focus isn't just school. So I realize that there are times when things are going to happen."

During the first observation, a student informed Ava that she would arrive late at the next class session due to an issue with the baby sitter. Based on that observation, the researcher asked Ava, "How much does working with adult learners influenced preparation or delivery of the content?" She replied, "*I don't know that it influences my preparation. Teaching adult learners does influence my delivery.*" Ava went on to describe how she would adjust her delivery of material in this specific case.

[the student stated that], she needed to drop her kids off at school; her husband leaves earlier than she does. She was going to be running to class to get there... [Ava stated] I understand. So I will do something at the beginning of class for that first 15 minutes, just to keep them busy, so that everyone can actually get there and then we can start on information. So it [teaching adults learners] has influenced my preparation, too. So I have changed because of that as well.

Motivation

During the first observation, it was noted that Ava selected activities that influenced student motivation. The techniques were noted and during the second interview she was asked specifics regarding her selection of task specific to her understanding of student capabilities. Ava stated.

I want all those students to be successful in the class. So I chose those certain fibers that that group would either be successful at finding information on, because it was easy, or successful at finding information because it was hard... I know that those students on the other side of the classroom needed a fiber that

would be easier to find information on. So I chose certain ones for each of the groups.

Program Influences

The Adult and Continuing Education degree program not only provided resources for Ava, it also afforded exposure to a wide variety of teaching methods and techniques. One of the teaching methods Ava was exposed to was being a reflective teacher. Professors modeled effective reflection-on-action and reflection-in-action. Reflection-on-action was modeled by professors who adapted courses from year to year based on student composition and learning style. Reflection-in-action was modeled by professors who modified individual class periods based on students' ability to understand material.

During the first interview Ava was asked about reflection-on-action specific to classes sessions being observed. Ava gave the question some thoughtful consideration before responding. Responding with a chuckle she said,

I change my class every semester. Not because I get bored, I change it because the way I taught this [class] last year was not effective.... Like I said, in teaching, you at least have that second chance. You can go back the next week, and go, let's review, let's look it over so that they're hearing the information again and in a different way.

Her response highlighted that in the previous year her approach was not as effective as she desired. Being introspective, Ava demonstrated the modeling of reflection-on-action in her teaching practices.

Ava then linked this back to a program professor who made a philosophical teaching point about content and deep learning. Ava reflected on a professor who said, "...sometimes you have to give up content to get quality [learning] from students." That was an a-ha! moment for

Ava. “*Oh my gosh, the light bulb, I was like wow.*” That moment in Adult Learning and Motivation she realized she was not a slave to content if she elected to focus on student learning. Content would come through a sound foundation of learning. In Ava’s own words she related how she could confidently readdress material or poor student test performance.

I know I’m held to these objectives, but if I’m in class and they are not getting it, I should [can] take the time to go back and make sure they get it because most of our classes build on the first couple of weeks, You get your foundation and then you build your tree.

When reflecting on what was the most impactful course in the program, Ava recalled a course called Social Foundations of Adult Education.

I think it was social issues [Social Foundations of Adult Education]. She, [Professor] used a game called Star Power, assigned us each a social [social economic] class and assigned how much money we [each] had... I happened to be put in the upper class and I had quite a bit of money... Oh my gosh, that social issues class, which everyone hated at the beginning, and I don’t know how many people like it at the end, but I did. At the end I remember going, okay, now I see the value of this class. I hated going through it. I didn’t want to talk about some of the things that we talked about, but it made me aware of things that I wasn’t aware of.

The impact of that particular exercise is reflected in her discussion of how she now has a better understanding of students in her class.

When I’m in the classroom and I have four gentlemen, one of those gentlemen is African American, I’m aware of that now. I try to be respectful. That’s an easy one. Ethnicities are harder to see and those kinds of things, but I’m aware that I have a certain

perspective and that someone else might have one that's not the same. I think that has made me a better teacher and more sensitive, maybe is the word, to maybe where a student is coming from. It was very, very impactful.

The impact of Ava's Adult and Continuing Education degree program was deeper than a Social Issues course. During the interview she mentioned how all of her books have a resting place in her office and that she reflects and re-reads past papers she read while in the program.

I would say, I don't think there was a class in the adult ed [Adult and Continuing Education] arena that wasn't impactful to me... I still access all of my papers. I just gave you part of one of mine because I still use them. I still go back to them and go, okay, what was it that I was thinking then? Sometimes I go, oh, that was way off. Some of them, I go, yeah, that's right, okay, I can do that.

Ava's reflections of her graduate program experiences were not all addressing books and papers. She also noted that while she may not use all the techniques she learned in classes, modeled by professors or described in textbooks, the techniques were filed away...waiting for that group of students who could benefit from a specific technique.

So that's the whole gist of it. I know I have probably in the back of my mind some adult ed technique that I learned that is a good thing to do, subconsciously floating in there. It's in one of those file drawers that doesn't come open.

You know, we kind of went over different types of teaching in one of the courses, and I'm not exactly sure which one, and I know a couple of things that I try and implement, which is the scaffolding technique, I forget what, I call it the cheerleader, showing that they're successful in the classroom. So those are my two probably go to situations. I really don't like to be on the negative side of teaching. So that's, like I said, those are my two go to.

One of the ones that I still have from my motivation and learning textbook was actual phrases that can help foster a little bit more discussion and thought. So those are the ones that I think that I do still like to look at, is just different things that I can implement quickly in the classroom.

I think I've mentioned several of them, and I continually use them, and it's just kind of been an, in fact today, I had my program planning book out, because we are talking about these academic spaces and we need some research information on academic spaces. I know Planning Programs for Adult Learners, (Caffarella, 2002) has got a whole chapter on that. So I got the book out right before I came, and I'm like, okay, I've got to copy these tomorrow morning, and I'm marking the pages so that I can upload them to our little group. So I mean that's on a weekly basis I'm using those books. I use the motivation book [Enhancing Adult Motivation to Learn] (Wlodkowski, 2008), the adult learning book [Adult learning Methods: A guide for Effective Instruction] (Galbraith, 2004), and the program planning book (Caffarella, 2002). Those are my three go to books. If I have a problem with a student, I will go and look in the books and go, okay, what am doing wrong, because usually I can find something that will help me get over the hump with those students. So it has affected, the adult education program has affected my everyday life when I teach.

As people grow older and reflect back on decisions and themselves, they often wish they could write themselves a letter or tell themselves something important that assists them in their later life. In response to what she would you tell a student in the Adult and Continuing Education program today in preparation for the workforce, she stated:

I would tell them, put your books on your shelf in a spot where you can reach them, because you're going to need them weekly.

I would say that, maybe attempt to use some of their [professors] techniques. I, I think [A professor from the program] did a great job of allowing discussions and helping the discussion by speaking to certain people. That's something that I'm not comfortable with is, drawing people out. And I need to get better at that. And I do recall being a bit in awe of when she would do that, and going, I've got to figure out how to do this better. And so, those are things that I think I have used, that technique I've used, but kind of in my own way, because I knew I needed to get better.

Her interview reply to the above question generated a follow-up question to verify how she used her textbooks and program material.

... oh my gosh, the program planning book [Planning Programs for Adult Learners] (Caffarella, 2002)... Since I'm the division curriculum committee chair, that book has been invaluable. I mean, I have it marked up so many places. And I'll go back to it and go, oh yeah, I remember when we did this project and we had to set up this whole, you know, program. And I'll remember things that we did in the program, and I'll apply them differently, or even the same in the setting that I'm in. In the classroom, like I said, it was more of a validation of what I was doing was okay. But some of those other techniques that we learned and things that I learned, have been so valuable in this setting too.

At a later interview, Ava was asked how and if she taught introduction type courses where students must learn basic knowledge any differently than a more advanced course. As she reflected on how she instructs a course with basic/technical information and a studio class, she determined that the material does influence how she instructs. She said that students' level of understanding and knowledge are influencers to the instruction.

I don't know if it affects the way I teach. Yes, yes it does, yeah it does. If I look at my higher-level students in the second year and capstone class, I do teach them differently than I teach this class. So the material does affect... I think it also affects, I think also my teaching is affected by their level of what they've learned too. So, yeah because I think it's important that they kind of have a base of knowledge and they have to have the information. So, yeah I guess it probably would.

Other Themes

The methodology of resulted in emerging themes that did not directly relate either of the secondary research questions, but presented valuable insight to the study and pertinent to the participants approach to the education workforce. Some additional categories revealed were a propensity toward lifelong learning, a general lack of faculty development programs in educational institutions, and becoming a resource for faculty members on how to teach adult learners.

Lifelong Learner

Throughout our interviews and in conversations before or after observations, Ava demonstrated a continual desire to grow both professionally and personally as a lifelong learner. The first mention of being a lifelong learner was when she mentioned articles she had read or professional discussions she had with fellow professors. In every instance, she viewed these encounters all as learning activities. Speaking about an email a fellow instructor sent her because of a passing conversation regarding the challenges of teaching millennials, Ava stated:

I opened it [email message] up and it's about the Rams [National Football League team]. I don't know if you know anything about the Rams. I at the time didn't. I mean, they're a football team. Apparently, the average age is twenty-four on their team. I mean

that's really young. They were talking about how they [coaching staff] had to change their style of teaching to their players because they [players] were not getting it. Instead of having them sit in the three-hour long meeting and take notes, they would do twenty-minute meetings and then go out and do an activity. I said, well that's a good answer. I need to do some little, different activities with each one of my lectures. I can do that.

During the first interview, the researcher asked Ava if her institution had a faculty development program. She said,

"Yes. However, it was not a structured program as much as a random collection of presentation. While the program does not have an adult learner focus, it does have interesting and professionally development opportunities.

I think it's also interesting to see what other faculty are interested in and how they present their information. If they're passionate about something and they're going to sign up to do this, it's going to come through. You can learn some techniques from their presentation to use in your classroom. I think I'm always trying to get that nugget of information and okay, oh, I really like the way he presented that. I'm going to break that down and remember that for my class.

Faculty Development

While the faculty development program at Ava's college may not be focused on adult learners or adult learning techniques, it has a unique system of blending new faculty members into a coherent group of collaborative instructors across disciplines. The college's method of developing its new faculty is to put all new faculty through a college level orientation regardless of discipline. This group stays together throughout the first year at the college, meeting monthly to discuss different topics. In Ava's case, she was one of 28 faculty members. Additionally, the

new faculty members are not assigned offices departmentally but randomly across campus. This unique arrangement placed Ava's office in a short hallway as one of five offices, occupied by faculty members from three different departments. Faculty from her department occupied none of the offices in her hallway. Since the end of the first year, Ava has retained a close relationship with members from different departments.

I know 27 other people from different disciplines because we met once a month for a year, and you get to know people in that arena. It's kind of one of the best things about (college) because now I have connections with other departments. If they sit close, it's relatively easy for me to speak with them, or if they're in a similar discipline. The gentleman who gave me the idea about the open note quizzes, he's actually in the construction science department... I think it's something that [college] tries to set you up with from the beginning is to be able to go to other people in other disciplines. I have learned a lot from these people that I sit around that are not in my discipline. It's been great when you go to somebody who's a lawyer and you say, there's this contractual thing, oh here, do this. Well, that's brilliant.

I'm on Linked In with the adult education group. I forget what the official name is. Interestingly enough, [college] puts out on their, what we call List Serve. So all the faculty get information from it's a Magnum Publication, I forget which one they do, and it's all on different teaching techniques. I love those and some of them I have tacked up in my office, different techniques and such so that I don't forget them.

Students often write papers based on limited understanding of how theory translates into practice. One who may not be a lifelong learner won't recognize his/her views in an assignment are incorrect. Those papers are written, graded, and filed. To a lifelong learner those papers are

reflections of previously held beliefs and assumptions reflected upon as one grows in their journey. Reflecting back on some of the papers she wrote in her graduate program, Ava had this to say regarding being a lifelong learner.

Some of those things that I thought were correct, maybe I've changed my idea about that, and I do remember a class that we were talking about. Growth is change. You've got to do that.

Yeah, it's amazing. I mean, just to read something and go, oh my gosh, like, I should have had a V-8 moment.

Resource for Teachers

During the interview process, an interesting theme developed regarding Ava having earned a master degree in Adult and Continuing Education. As her achievement became public knowledge on campus, she became the subject matter expert on teaching adults. This was not an outcome of years of teaching or presenting papers on teaching adults, but a result of her obtaining a masters degree in the subject.

For one of the interviews we meet at the coffee shop on campus. While we were walking to her office, a colleague from the mathematics department approached Ava. He was interested in adding group learning to his basic algebra class and asked her if she could share some ideas on teaching techniques that might work for his type of class. Another colleague, who shared the office hallway with Ava, was struggling with an early morning class.

... just being able to help other professors with their learners. You got to meet Adam, and one of the problems Adam was having was, he had a 9:00 a.m. Monday, Wednesday, Friday class. And he said, they just come in, and I said, take a coffee pot and some coffee. He did it, then he started, he's doing it all the time now. He goes, oh my gosh, it was so valuable. They have coffee and now they're awake and now they're more relaxed, and they're, you

know, they have to get up to get the coffee. And so he goes, it just changed the whole dynamic of the class. So just suggesting one of those things. One of the things that we talked about early in the master's program was food and fellowship, right. And so that was, try taking them coffee, it's 9:00 in the morning. He looked at me, I say, it's cheap, and buy all the coffee for them. And that's what he did, and it worked great. So when those kinds of things that you would think, and maybe I don't know, maybe when [professor's name] and [professor's name] and those people were talking about these kinds of things, I don't know if they know how valuable they have become. So, I think it's just helped me in a lot of different areas. Not just in the classroom.

In another instance, Ava's degree benefited a colleague from the business law department is described as:

Well, she used to sit in my hallway. So we became friends, and we would share a lot of our different ideas about teaching. So it was not uncommon for us to trade information. She was in my [orientation] group. So she started at [college] when I did... She teaches business law, which is so much different than my discipline, but it's interesting to see some of the things that work for me and that I do that work for her.

Ava is a professional educator and it is important to her that her teaching remains focused on what benefits student learning. As stated earlier, Ava had taught for six years before entering the Adult and Continuing Education degree program. She was not pursuing the degree to learn to teach but to grow as an educator. In the following excerpts from interviews taken during the study, she related how the degree confirmed her practices and how important it is for a teacher, who is just an expert in their discipline, to also focus on student learning.

My biggest problem with higher education is that a lot of these people that are in education only have credits in their discipline. They have never been taught how to teach. They do everything the exact same way every semester and every semester it's not good.

Ava is happy to serve her colleagues as a resource on how to teach because of what she learned in the adult and continuity education program.

Summary

The data collected from Ava were collected over three months. Over the course of this time, Ava demonstrated an incorporation of program materials both in her classroom and in committees outside of class. She modeled some of the interactive, adult-focused teaching practices of her Adult and Continuing Education degree program professors, as well as connected with many experiences from multiple professors and courses in the program. Further, for her colleagues, Ava took on the role as the adult learner expert and resource regarding how to teach. There was reasonable evidence from the interviews, observations, and reflective journal that Ava demonstrated transfer of learning in the context of PFL.

Joanne

Joanne graduated with an MS in Adult and Continuing Education in 2010. At the beginning of this study, Joanne was entering her 14th year as an instructor at a local school of nuclear medicine. Her 14 years of teaching could be divided into three phases: (a) prior to entering the Adult and Continuing Education degree program—four years, (b) enrollment period—five years, and (c) post-graduation—five years. She was one of two instructors in a 12-month, 40-hour-per-week certificate-granting program. As the clinical coordinator, she taught two days per week and supervised nuclear medicine clinical on the third day. The age of her

students ranged from 22 to 28 years old. Course enrollment during this research was three students.

Joanne's two observations were conducted within a three-week span and in the same classroom with the same students. The second interview was conducted between the two-programmed observations. In both observations, Joanne's class consisted of three students, one male and two females. The classroom was set up in an "L" shape (see Figure 5). Each observed class lasted two and one-half hours.

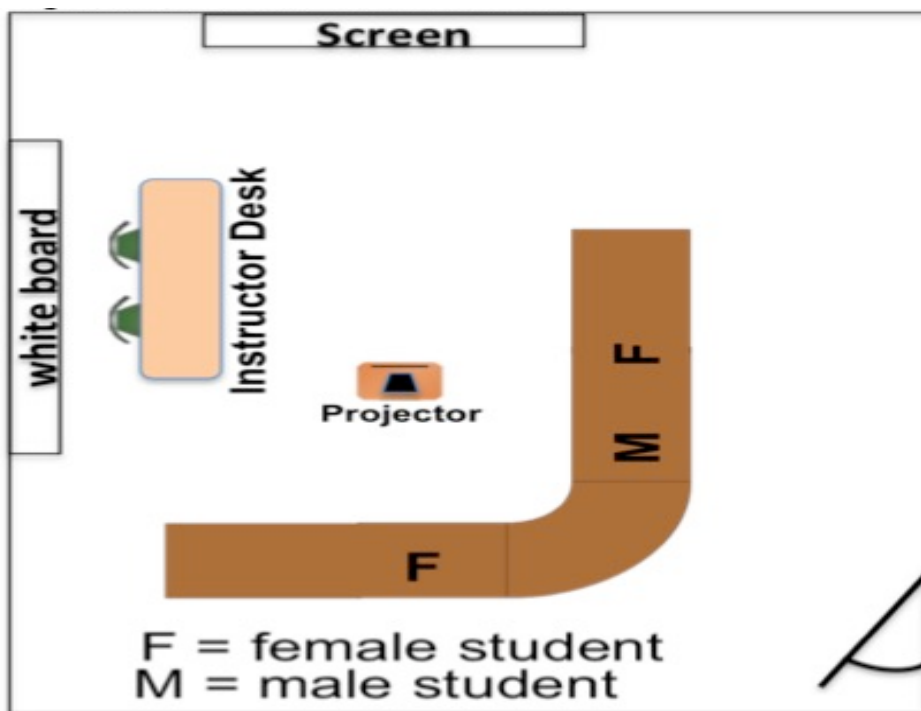


Figure 5. Joanne's observations #1 and #2

The classroom was small. With the projector in the middle of the room Joanne had little space within which to move around the classroom. She started the class sitting at the instructor's desk with her teaching partner (supervisor). Even though the classroom was small, she demonstrated many teaching techniques without moving around the classroom. Some of those techniques were ideal for small classrooms and getting students involved in learning. As the

class progressed, and the activities became more hands-on, Joanne spent time with each individual student as the class worked on activities. Professors in the Adult and Continuing Education degree program modeled other techniques used by Joanne.

Instructional Practices

Learning Style/Teaching Style

Joanne described herself as a random person. Reflecting back, she said that she learned this during her degree program. In our first interview, Joanne described how she approached teaching adults before entering the Adult and Continuing Education degree program and after she started taking courses.

Organization of thought processes does not ring naturally to me. It's more circular than it is linear, but I understand that others need the linear presentation. That was probably one of the first things I learned in school [Adult and Continuing Education degree program], how to take my circles and makes lines, and it may take me writing to do that, and then to appreciate.

Joanne's teaching style is based on a student-centric learning model, which is a teaching style that gives some of the control for student learning to the students, while holding them accountable for their learning. She does this by giving her students some control over the learning process.

I'm really a patient person. So I can just sit back and let them struggle a little to get through it, versus going directly to the book. My goal is for them to learn it, not to get it done. That's always been the way because my theory is, if I teach them how to do it, they'll go on and do it themselves, and I don't have to do it again. And if I don't, if I don't let them learn, then I'm going to have to back them up their whole career, and I can't do that.

During the first observation, Joanne actively demonstrated her teaching style using the student-centric teaching model. At some time during the observation she determined the students were not ready for a test stating, “*the practical application is very important to relate to what we do in class. So we’re going to put your test off until after you finish this lab. We will talk, then we’ll review and test, because it all relates.*”

One of the greatest challenges of teaching is how to determine true learning. Since completing her Adult and Continuing Education degree program, Joanne has recognized the difference between long term, deep learning and memorization. She reflected during the third interview how she accessed learning before the program and after completing the program.

You know, it’s funny, some of the test questions are still the same, because they were good questions. I understand better now what and how to asking and how to teach a question. Previously, I would have just quoted verbatim, $a = x$. Now, I can show them, this is a , this is x , and this is how they’re similar, but this is how they’re different. And I can build the picture and help them build the picture. So, that, knowing the content better has helped me keep some of those test questions, because you have to have a way to evaluate the students and their knowledge. For me, nuclear medicine is completely mechanism of localization. You know how this drug goes in your body. If it goes to the liver because of the cells in the liver, you know, whatever mechanism makes it go where it goes, if you know that, you can figure everything else out. As long as you know that mechanism, which is different than how I originally taught.

Philosophy

Hmm, how...because my belief is, if they learn the content, they will be able to do the procedure. It is my absolute true belief, nuclear medicine works on physiology.

One of the first courses Joanne took in the Adult and Continuing Education degree program was Adult Learning and Motivation. In this class, students learn about different learning theories, and begin the journey of understanding their personal approach to learning. Joanne shared this when asked about the learning theory that best described her approach in the classroom. *“I thought of that yesterday, constructivism. I’m like yeah, that’s what I do.”* She demonstrated her understanding and practice of constructivism in the following interview passage as she described the difference between how she approaches nuclear medicine versus how Joanne was taught nuclear medicine.

So, one of the things I wanted to do was link what they learned in clinicals to what they learned in the classroom, because I felt that’s what I was lacking in my educational program (her nuclear medicine program). I spent all this time in class and then I went to the clinic, and it was like this whole foreign beast and I didn’t understand anything. And I could technically do all the steps, but it was years later when I was making those bridging connections. My goal is to help them construct the understanding as we are going through it. And sometimes, it’s going to be uncomfortable. And sometimes you’re not going to know the answers, but I’m going to teach you how to think about it so that no matter what you run into, you know where to go to your resources, how to find the answers, and to understand that not everyone knows everything, and that this body of knowledge keeps growing, and that it’s up to them to stay on top of it.

Joanne told her students why her teaching is different than other programs their friends might be attending.

This is what’s different about my program and any other program, is that I marry what you do in the clinic and what you learn in class, and I make you tell me, and it’s that culmination. We have

this oral exam, and it has a 30 percent bearing on their clinical grade. So they can do everything right in clinicals and still flunk the clinicals if they're not careful. I really believe that makes them more well-rounded because, when I went through school, you know, one of those, typically teach how you were taught. Mine, we did classes for the fall semester, and then I started clinicals January 2nd, and I graduated in August. And I really didn't step back in the classroom. So, I was supposed to remember everything I had learned here. To me, it was two different worlds. That this had no bearing on this. And that's just the way I worked. And I didn't have anybody push me to put them together. And I remember going in for a final exam, like an oral exam, and I had no idea. I still got confused whether kidneys were gall bladders or gall bladders were kidneys. And those are the two big studies we do. So I was, and my teacher made me go home and study and come back and try it again. And I thought it was a good thing.

Students First

Joanne recognized that not all students learn at the same rate or come to her program with the same skill set. As data collection progressed, the researcher noted that Joanne's approach to linking her classroom work to clinical experiences also accounted for student preparation to learn and experience. During the second observation, the researcher listened to an exchange between Joanne and a student regarding a clinical. Joanne's handling of the situation, using her understanding of adult motivation, is described in the following passage.

... her clinical site, it's interesting because she [Joanne's student] doesn't have computer access, which is a barrier to her, but it is one we have to live with, because it's just the way that site is. They don't grant access to students. So, my job is to help her deal with that frustration, and to understand that I don't expect her to put it in there, but I will expect her to learn to do it somewhere else. At

some point, she may get to a place where they're comfortable letting her, but it may be awhile, because they're looking for efficiency.

Joanne's knowledge of this site limitation of student's procedural access and her understanding of students' strengths and weaknesses coupled with her appreciation of how adult learner enhanced the learning experience for all her students. One of her student's, Cathy, site was more restrictive on when the nuclear medicine technician allowed the students to enter medical information. So Joanne arranged the clinics so students who needed more applied application were assigned accordingly.

I handpicked Cathy to go to that clinical site first because, not because I wanted Cathy there, but because I wanted the other two at the other sites. I thought Cathy had the most experience in clinicals and would be able to adapt to their system and the other two needed maybe a little more hand holding. Or I wanted them to be pushed to do more.

In the Characteristics of Adult Education course, a major aspect of teaching and motivating adult learners is aligning student-learning outcomes with academic assessment requirements. Joanne discussed how she takes a non-standard approach to achieving outcomes and assessments without teaching to the test. She uses experiential learning, a method of teaching made popular by Kolb (1984) and widely discussed in the Adult and Continuing Education degree program.

There is a bucket of information that they must know before they can graduate, and that bucket is defined by the certification exam. It's defined by the skill to practice. Their objectives and learning outcomes are tied to that bucket. So everything we do is in an effort to obtain what's in that bucket, but our process is not as delineated as a traditional school. We're much more experiential, which is

one of the things I really like about our program. I think, pretty much any student can do well in this type of program.

Student Generational Characteristics

Facilitating learning at all levels requires a certain degree of understanding about the student population you are instructing. Joanne recognized an immutable fact about teaching millennials—they are different and require a wider array of teaching practices and techniques. In this one encounter, she discussed how each student is responsible for his/her knowledge of the material. A student asked, “*How do you expect us to know this?*” Joanne responded with, “*You have a book, and it’s called reading. Then you can come back to class and we can talk about it. You have to be engage in your learning, this is your career.*”

During the first observation Joanne used a workbook on nuclear half-life. The book contained colored pictures, charts, and formulas for computing a radioactive material’s half-life. The researcher found the practice of using a workbook odd when many students, especially millennials, use computers and digital devices that have apps for computing such things. So, during the interview she was asked why she elected to use a workbook to convey radioactive half-life instead of an app.

The book we have from '79 is the best example. It is the best way for me to present that class. I found that book online. I looked through some resources, because you know, when you're asked a question and you don't know the answer, you tend to research it. The online version is interactive, it's clickable, and you can click here and go to that one, but it's not as easy to read, and it's not as easy to understand, and it's not as easily visually to interpret. By making my students work through that worksheet, the problems that we present, deepens their understanding of the basics of radioactivity, and its half-life.

Joanne considers herself a dual-professional; she is a professional adult educator and a professional in nuclear medicine. Identifying herself as a dual-professional, we discussed how one profession influenced the other. *“A careerist may not be an educator. And not being an educator makes it harder for you to see them as adult learners and not just as a nuclear med tech.”* The example Joanne provided demonstrates how being knowledgeable about adult learners influenced her response to this exchange with a new group of students.

This year, one of my millennial students asked if they could rent books. I said, well here’s the thing, our semesters don’t align with regular college semesters. Therefore, your timing is going to be off. Secondly, when you get out, your books may be a resource you want forever. These are important to your career, and you may not have had classes like that yet, but these will be resources. You will see other technologists pull out their books and look things up when they don’t remember them and how to do them.

At some point during our second interview, we began talking about how an instructor balances the assessment requirement of adult education and learning required of a professional course. The conversation led us to discuss how Joanne’s teaching techniques approach assessments and true learning. She specifically addressed the requirement of longer periods of contact time being a requirement of making connections with millennials versus other categories of learners. Joanne referred to assessments as gates that are required for navigating future career requirements.

Oh, I hope they go well past it [gate], my approach is to teach them for life. I think sometimes it is not that evident to my students, because to them, this is a step to the test. To me, this is a step to your career. The test is just the starting point of your career. It’s interesting though, the younger they are, the harder it is to make that connection, because they don’t have as many life experiences,

but sometimes, age is not the barrier. Sometimes, the young are so thirsty for knowledge and haven't been soured by previous experiences, that they can look at it with a more open mind. So, it is interesting.

Specific Techniques

Joanne remarked that the program changed the way she thought about teaching and her practices of teaching.

... first time teachers tend to teach how they learn... Because that's all you know. So, I only knew how to present information in one way. I was not as familiar with the content; the better you know the content, the more ways you can present the information. So, initially, I was just presenting information, it was a rough year that first year.

Before entering the program, she did not feel she had control over the course or the content. After starting the program, she realized how much she controlled the pace and content of each class.

... initially I thought my job was to teach procedures, and I've always been one that wants to know why and how and what and love detecting models, murder mysteries, you know, just like to know those things... my role is to teach problem solving, critical thinking, and not just step A to step B to step C.

It took me awhile to realize: a) I had control over what content I taught; I didn't have to follow exactly what the book said; and b) the rate at which it was delivered. And, actually, once I realized it my classes improved... a lot.

One of the assumptions of andragogy is that adults need to take responsibility for their own learning (Merriam & Brockett, 2011). Joanne shares a part of that belief that encompasses

student responsibility for learning by starting classes with a question to assess where they are in their individual learning journeys.

Questioning is my go to. I think it's pulling out what they know to correlate with what I'm trying to get them to know. I'll assess what they know, and I'll tell them when they're right, or redirect them a little bit. I encourage them to find their resources. Like something I made them look up yesterday. I said, you guys can look this up because for me it's not what you know, but if you know where to find it.

The following passage describes an approach Joanne uses to a start of class as a trial and error approach to students' readiness to learn. This highlights her understanding that adult learning is a messy process and learning is the association of student readiness to learn blended with a general understanding of the material.

That is, you are in the class and they have the blank look, you stop and you go, okay. So, let's try this a different way, and I'll back up and either try to give a different example, try to tie it to something else that they've seen or known before, or try to give them another resource to look at.

Joanne points out that it is not only the start of classes that require an instructor to assess learning. It is also important to know what knowledge they leave your classroom with and how it impacts their future learning.

And a lot of times, at the end of class, I'll assess the students with either written questions or verbal questions. You can't put a time limit on it [learning]. So if we go over by a few minutes, or go under by a few minutes, and we kind of keep that relationship because sometimes it takes them a little bit longer to get the concept than you anticipate, and we're more tied to getting the concept than we are to the time.

During the interview, Joanne mentioned another author from her degree program and how she uses techniques described in *Collaborative Learning Techniques* (Barkley, Cross, & Major, 2005). Joanne stated that every day is a different day when you teach adults and often requires different approaches to the same problem.

I have other things in my pocket. You know, sometimes I bring in ping-pong balls, or blocks, or you know, kinesthetic things to build things with or bounce off each other to talk about reactions and things because it helps them visualize what's happening on a microscopic level.

During the second observation, the researcher noticed that Joanne interacted differently with each individual student. Depending on the student, she would open a student's question up for the group to answer and in other instances she would answer the question directly. We discussed this technique during the third interview. She responded with, "*We feel like we need to categorize people. We put them into groups like millennials, Gen X, and others. But you can't assume they have that group's characteristics.*" An example she shared.

Last year I had [student], she was my youngest, but she was an old soul. She liked to be prepared, and she liked to be early. She will make someone a really great technologist. [Another student] is coming along, but she's a little weak in her degree and preparation. But not as advanced as I hoped she would be. They are about the same age but have different skills that prepare them for the course.

Joanne's acknowledgement of student preparedness and her reference to "old soul" are two areas discussed in the adult characteristics course in the Adult and Continuing Education degree program. An "old soul" is referencing a student's emotional and intellectual maturity

being beyond the person's physical age. The topic covered in the course is called life-span generation's characteristics.

Every adult learning environment is different and teaching techniques are not universally effective. Joanne pointed out that she has a small class and that many popular teaching techniques are not viable teaching options in her class she often modifies her classes using teaching techniques she picked up in Advanced Teaching Techniques.

I pulled out that one from [professor's] class, that games book [Collaborative Learning Techniques] (Barkley et al., 2005). I was looking for different ways to engage my students with each other. But the problem I ran into, is I only have three students. So there are some things you cannot do because I don't have a bigger group. But it gave me some jumping points, have cards, things like that, where they could write down questions and what lingering questions. We did that one quite a few times. I also did something on a test, where I said, what was the one question that I didn't ask that you studied for, you felt totally prepared for, write the question, write your answer. I'll consider it. How many more questions for my next test?

Collaborative Learning Techniques (Barkley et al., 2005) was used in the advanced teaching methods for adults course. A common practice used by professors in the Adult and Continuing Education degree program is reflections. Prior to her enrolling in the degree program, Joanne mentioned she did not ask students to journal. However, she eventually recognized the value journaling provided to student learning, which she described:

Gosh, journaling reflecting gives me the connection I need between the classroom and the clinicals... Let me think. I probably started it five years ago, but the problem was, the paper chase. It was a single piece of paper and they were supposed to write down what

they did and what level they did it at for the week, and they were supposed to have the technologist that they worked with sign off on it. Sounds great in theory. I got about 50% of them all. Two years ago I started doing it on the computer and making them clock in and out on that same program and making them document on the same program, last year my response rate was about 75%, but I wasn't on top of it. I didn't push them to do it. And therefore, they live up to your expectations. You expect 75%, they'll give you 75%. This year, because we've changed our schedule, so they have full days in clinicals Monday, Wednesday, Friday. They have full days in class Tuesday, Thursday. I can look on Tuesday to see did they journal on Monday. I can look on Thursday to see if they journaled. I can keep track of them.

Questioning is another widely used teaching technique in adult education. Joanne stated it was her go-to method. She went on to discuss how an effective educator does not just ask questions, but knows what and how to ask questions that lead a discussion in class.

I use questioning a lot. That's my go to if I don't, but I think it's that pulling out what they know to correlate with what I'm trying to get them to know. So yeah, I use, that's probably the technique I use the most. I start every class with an assessment on the spot of what they currently know of the subject. And it can be, you know, go around and tell me something, or it can be, do you have any examples of a study like this, or whatever. I try to always start from where they are there, and not make any assumptions on what they know or don't know already.

During the third interview the researcher asked her if questioning was a technique she used before enrolling in the degree program. Joanne responded,

Oh, no. No, then I would just walk in and be like, okay, we're going to talk about this. And I'd throw it up, and half the time, I didn't know what the heck I was talking about. I'd be like, I can tell you what the book says.

In addition to using journaling as a form of helping create the connective tissue between classroom and clinical for the students, Joanne uses a tracking system that helps her know what students have covered in clinicals that is useful in the classroom.

It may have been something I read, because they track in their online tracking system the studies they've seen... and you know, clinical stuff. They grade themselves on how well they did it. So sometimes I take that as a clue, if they've seen something, or if they've not seen something, to kind of give us a branching point, a connector between the clinic and the classroom, because what I'm trying to achieve, I want them to see, but they don't have that knowledge yet, but they have this little bit of knowledge over here.

Joanne was heavily impacted by a course she took her third year in the program called Advanced Teaching methods for Adults. The following dialogue demonstrates how many different techniques she uses from advanced methods. She validated her connection to advanced teaching methods for adults during both observations, where the researcher recognized the used of worksheets, group work, and active association.

Okay, I go back to that class [Advanced Methods] and I try to come up with something, something that is different than what we did before, but yet related. I have implemented worksheets, I mean, it's like, sometimes it's like going backwards instead of forwards, but for that group, they need to do this whole manual writing. I've implemented charts, like fill in the blank charts. And then sometimes we use Jeopardy. I don't always pull it out unless they need it kind of thing.

Adult Learner Commitment

Adult learners are different than traditional students. Joanne explained how she recognizes the difference between adult and traditional student learners.

A traditional student...there's a mismatch sometimes in commitment and expectations, a lot of kids today expect to get all A's. They just do, and they assume that if they do, dot, dot, dot, dot, they'll get an A... Where as an adult learner sometimes it's a dot to dot to dot to dot to dot to get that A, which may not be immediately identifiable at first, but when you're in the situation, if you give more, you get more. So, I think sometimes that makes them uncomfortable, just that it's a different learning.

Based on Joanne's explanation of identifying her understanding of the two different types of learners, the researcher asked Joanne how much working with adult learners has influenced her preparation or delivery of material, to which she answered:

... my preparation and their learning, yes? I find that they're able to make sense of their clinical environment sooner than I was when I went through a different type [non-adult learning environment] of program. So I think it's a real strength of our program, and I think it shows in our test scores and the ability of our students... I go out in the clinicals with them sometimes and I will, I observe, so I'm not the lead teacher in that case, but I am able to stand back, they do, they do the tasks, and then I can pull them aside and say, do you know what that was, do you know how that relates to what we talked about, and did you know that that relates to this, and kind of help show them the ways.

Joanne went on to explain that not only does an instructor need to recognize adult learners learn differently, an instructor also must recognize the barriers to student learning, and

account for those barriers. In one such example she recalled a student who worked a full-time evening job around Joanne's extensive program.

I had one student in that class, and he's only been one of two students that I've had that worked full-time, 3:30 – 11:00 pm, the entire time they went through school. And that's really hard because our program is 48 hours a week, plus homework. So I mean, they're there, it's class days are 8:00-3:30. Clinical days are 8:00-4:30. So Monday, Wednesday, Friday you're working a full eight-hour day and you get an hour off on Tuesday, Thursday. That's a lot... sometimes he slept in class a lot because he was tired. Not because he didn't want to learn it, but... He was also one to check the box, and I wished I could have helped him more get what he needed and not expected so much outside of class because he just really didn't have the time. It took both of us to get him through the program.

Motivation

A couple of years ago, but after she completed her program of study, Joanne opened her classroom to a returning student who was pursuing his master's degree. As part of his program of study he was required to complete a practicum. As such, Joanne let him teach a class. Joanne responded to this student's practicum and the impact on her students' motivation.

... he was very regimented with objectives and assessments and tests. He gave my students a test that he himself had not taken. So when you do that, and you sit down to take it, and you can't complete the test, it kind of sets your whole class up for an impossible expectation. So we felt like he learned a lot, but he had not done much teaching to that point, and I felt like I had to teach him a lot about motivation, and how to be motivating... Come back and talk to me about it. Read this. You need to know about adult motivation. You need to understand that these people come with all

different experiences and that you can turn off their learning or you can turn on their learning by one act.

Joanne went on to explain that she had to change her perception of one of her students after a few class sessions. Her initial expectation was “[student A] would require more push in the motivation department.” After a few class sessions, she revised her perception regarding [student A’s] motivation.

[student A] has completely surprised me because he is one, I expected him to be a little more timid, but he is one that as soon as you tell him, alright, here’s what I want you to do, it’s like giving him permission. He jumps in with both feet, full force, and acts like he’s done it forever. And it’s amazing because I’ve not had a student like that in a while, come from that educational background versus the people who were hands on. So, it’s very exciting... it [motivation] impacts how they are perceived in the clinic. The technologist will perceive him as being more competent, because he’s more willing, and that helps him tremendously through his learning.

In our second interview, Joanne described her excitement about how [student B], a motivated, but quiet, student would perform in clinicals.

So, I’m excited now to go see [student B] and see how she’s doing, because I could see her being a little more timid in the clinic, and maybe not as hands on. My [expectation] clues are, their self-reflections, the journaling they do after the studies they’re doing, and how they rate themselves. I’m seeing them increase their ratings of themselves from a one, to a two, to a three, to a four, to a five. Five is clinical practitioner, four is with minimum assistance, three is with assistance, two is helping and observing, and one is just observer. She’s progressed from a one, to a two, to

a three. She has some fives in there. So, I'm excited to go see her work to see if it matches what my perception is.

Joanne's selective questioning and activities influenced student motivation at an individual student level. This technique was present during both observations. The researcher noted Joanne's selective questioning during the second observation. During interview three, Joanne was asked specifics regarding her selection of task specific to her understanding of student capabilities. Joanne stated:

... yeah, it's on a per student basis. How uncomfortable can they stand to be and learn? [student C] the quiet one, is not very comfortable with learning discomfort. She feels like she doesn't know anything. So when she struggles, she just shuts off. She kind of needs a little boost, or space, I have to reassure her, you're on the right track, keep trucking. [student D], very comfortable with being uncomfortable and challenging and questioning. And that's why [student E] got into that situation with him, because that's how he learns. He is verbal by challenging what he knows with what you're presenting him. And he's trying to reconcile it out loud. So it is very interesting.

When Joanne was asked specifically how she manages or influences motivation in her classroom post degree program and pre-degree program, she responded:

It's that I can analyze what happened in that classroom and sometimes prevent the demotivators, sometimes enhance motivation. I can look around and analyze exactly how that class is going right then, and shift gears if I need to, have more discussion, have less discussion. I have a much better classroom management I think, which doesn't necessarily scream adult learning, but I did everything by happenstance before. And this was much more purposeful. I think that's, the planning, the program planning, the

knowing where we're going with this, having the outcomes, and being able to show them, you know, give them the big picture.

Program Influences

Throughout the data collection process with Joanne, she mentioned on several occasions classes, courses, and teaching methods used by professors that influence her approach to instructing adults. The Adult and Continuing Education degree program provided Joanne a considerable wealth of resources. “*Oh, yeah, oh, how did I evolve ...Oh, completely.*”

As the interview progressed, I asked her to expound on how the program influenced her as an educator. Joanne said,

Being pushed to analyze myself in school [degree program] certainly made the evolution way more fast. The transformation that occurred in those five years was huge. It was physical, and it was mental. I mean, you could see I looked like a different person, and I talked like a different person, and I acted in class like a different person. I mean I was just a better person. I continue to analyze and try to get better, but it's not the same rate as then, it makes me want to go back to school.

In a previous section, Joanne discussed an encounter she had with students wanting to rent textbooks. Asked a follow-on question the researcher asked if she had her textbooks and if she used them. With a chuckle, Joanne said:

Books I used in program, Characteristics of Adult Learners, Adult Learning and Motivation, Enhancing Adult Motivation to Learn (Wlodkowski, 2008), whatever that is... I have all of the books. I have them on my bookshelf, but I had not looked at them since [intern] did his practicum class. I pulled them out, and I probably looked at them a half dozen times since, but it's one of those, you

think you know it, but there is things you forget. It is knowing you have a resource, that you can flip to, does that make sense?

The researcher asked Joanne if her program of study impacted her teaching. Joanne felt she had always known how to teach, the program showed her she could teach. Responding to the question, she said,

... you know, it's funny, I've always done it. I just didn't realize it. So when I was in school, 2005-2010, each class, I would come home and I would apply it to whatever I was teaching and to my kids and my husband.

Reflecting back, Joanne recalled her final presentation in the program. Her reflection informed her that she was already doing some things, but the program allowed her to put a name to it. So, the researcher asked, "What did you learn?" She stated she learned a lot about techniques and expectations of adult learners.

... they were things I already did intuitively, but I could put a name to it and I could think more and plan more in how I used those techniques... You set the expectations. If you expect a lot of them, they're going to live up to it. And if you treat them like a grown up, then they're going to become the grownups.

While Joanne reflected on those things she already did, she was also able to discuss those things the program taught her, especially, aspects of program planning.

... it is the basics. I didn't know what an objective was. I didn't know how to write an objective. I knew what I wanted them to get out of it. I didn't understand how it related to the big picture yet. So if I, and I really wasn't a subject matter expert because I hadn't done program planning for so long that it limited my exposure to this other entire world. So I had to relearn all of that, and it had

changed in eight years. And I had to relearn, and it took me a couple years to figure out that it had changed.

In response to a question concerning the most impactful course in the program, Joanne thought for a minute and after a brief reflection she recalled a course called Introduction to Adult Education. Joanne articulated how this one course deepened her understanding of students in her class. This deepened understanding was not only as an instructor, but also as a student.

... Intro to Adult Education course... It was a very rowdy cohort. They were super fun, but in that class, I was trying to grasp context. Why are all these people taking the same thing I'm taking? And why are they doing it in a year or whatever, two years... it's so funny, but I was trying to learn context even while I was trying to learn content. And [professor] would use a pause after a question, and then I would talk to [professor] about it. And she would say, well you have to allow them time to think, because you've already thought about it. They haven't. And you have to allow them time to put that together. And if, you know, kind of, if you always pour it in, you're only going to get back what you pour in, and they're not really going to make strides in what they know. So it was kind of that, so that started it all, but it's, a lot of it was influence, but a lot of it was the principles of adult learners that they started with right then.

Later in the interview Joanne began again to reflect on her journey as an educator and the influences the program and professors had on her as an educator.

... I remember a lot, but it's been six years now. I started in 2005, graduated in 2010. So, it's been six years that I've been out, okay. That games class with [professor], and the one activity: think, pair, share. That question technique, I think that's because I could apply it immediately. And I still use it to this day. That was probably my most useful class, and it was early in my adult

education process, but it was very valuable. Now, secondarily, I remember my last class. I can't remember the name of it, don't remember the instructor, but I was in a group, made lifelong friends with these two Navy guys... we did an activity on Abu Ghraib and what happened in the military jail, a leadership thing. For me, this was all new content, because I didn't, I was completely unaware of the entire situation. So then, I had to do this whole research myself. So I convinced our group to take it from the perspective of the psychology experiment from Berkeley of the people being put in jail and becoming like jailers to compare to this. And the male/female dichotomy and all of that... So we went way, way deep.

Other Themes

Lifelong Learner

From the very first interview and throughout the research, Joanne continually demonstrated desires as a lifelong learner. During the first interview we talked about school, our families, and ourselves. At some point, she chuckled and had this to say about being a lifelong learner, *"My supervisor and I laughed about it [participating in this research] because we're like, you know you're a lifelong learner when you're excited by a research study."*

Joanne best described herself as a lifelong learner professionally as a diligent researcher of material for her course content.

I'm always searching recent journals for updates, new ways of doing it, research that supports or denies what we're currently doing in practice, diagnostic value as well as prognostic value... So, I read those daily and then if it's something that interests me, I'll click on it. And then, when I go through and prepare like, I'm doing the GI section now, I will also search for specific content there.

To quantify Joanne's statement, a follow up question was asked, "How frequently do you find, look at, or search, and educate yourself about your profession or course content?"

Daily. Shoot, I was doing it this morning. There was an article on radioactive waste in St. Louis, and Meloncraft Institute is in St. Louis, and they were one of the big starters around the Manhattan Project. They were our first suppliers of radioactive materials for use clinically.

Joanne's lifelong learning is not limited to her profession; it also extends to aspects of her degree program. She attended a conference called *Teaching Tips* that connected her degree to her profession.

I went to a conference. It was called Teaching Tips. And it was clinical a based conference, Friday, Saturday, Sunday, up in Omaha. And it was a hospital-based conference for clinical teachers. So it taught me how to critique someone. It taught me how to write an objective and learning how to evaluate whether they've met that objective or not... I could go back and look, some adult learning principles applied in the clinical. So it wasn't really how to teach in the classroom. But you know me; I'm going to try to relate everything because I don't know how to teach. So yeah, that all kind of contributed.

Faculty Development

Joanne's discussion of their morning ritual brings to light the importance of an effective teaching partnership when teaching adults in a student-centric environment.

We [Joanne and her supervisor] have conversations every morning. We go up and we have coffee and we talk about our weekend or our health. We talk about what we're going to do in class that day. And we kind of make a tentative plan and we kind of discuss what's going to be our challenges and what we assume will

be our easy successes that day. And then a lot of times we'll even revisit what we did the day before and then also long-term plans, kind of, I'm building towards this, you know, timeline wise, how does that look? Yeah, we talk a lot.

The relationship with her supervisor begins outside of class and pairs teaching proficiencies and areas of expertise with the course of instruction. The development of an effective partnership is discussed throughout the degree program as an effective method of teaching adults. During our second interview, Joanne mentioned that their partnership began about a year after she began taking courses in the degree program and represented an informal aspect of faculty development.

Oh yeah, I go back in her office, and we talk about it. Yeah, almost every day. I come in and, you know, it will start out that like, what do we have to do for the next class, and then we'll talk about what worked well, what we need to cover, what didn't work well, how much time we need. Our class times are not set. We pretty much take, we try to aim for an hour, but if you're on a roll, and the class is on a roll, we'll continue it for another 15 minutes and then take a break. And then the other one will give up 15 minutes of their class time to accommodate that shift. And we just do that, because, that's the way classes work. Sometimes you're going and it's really building, and like, the other day she walked in, I'm like okay guys, we are done with it, we're just calling it, because we're not going to finish the topic today, and we need to have a starting point for next time.

During the third interview, Joanne further discussed the importance of having morning coffee with her supervisor before class to discuss the day's activities.

Over 15 years, we have to meet almost every morning. It's crazy, but if we don't have our coffee and discuss the day, the day does

not go well. But if we sit down and we have our coffee and we talk about our weekend, or we talk about the day off, and then we hit on what classes we're teaching and sometimes we need each other in the class to facilitate, and sometimes we don't... yesterday was a prime example of what happens if we don't... We had to do an activity before class started. I got distracted by a patient and an allergic reaction that I thought was happening... then I forgot that I had to do this other thing... I'm not doing what I'm supposed to be doing... we were off kilter all day.

Resource for Teachers

Joanne noted during one of the interviews that her supervisor did not have any type of education degree, instead her degrees centered on nuclear medicine. As Joanne progressed through the Adult and Continuing Education program, an interesting dynamic began to develop between her and her supervisor. Joanne was becoming the subject matter expert in the classroom. Her supervisor began watching her teach and incorporate techniques, such as muddiest point, questioning, one-minute paper, into her own classes. Her supervisor also began to bring questions to Joanne, asking her opinion.

So we have a list serve where other program directors pose questions. So the question the other day, my supervisor brings it into my office. And she's like, what do you think about this? And the question was, in what order do you present procedures? And it's like, cardiac has five procedures, endocrine has four procedures. And I'm reading it and I'm like, supervisor, that's not how we teach... I get what they're saying... they're not teaching systems like we teach, but they're taking the individual procedure and giving it to them a, b, c recipe. And they're asking, should they rearrange the recipes. My supervisor said, not sure what to say to them... So we just let it go.

Reflective Teaching

Like Ava, Joanne was exposed to a wide variety of teaching methods and techniques. One of the teaching methods Joanne discussed often throughout this research was being a reflective teacher. Professors in the Adult and Continuing Education degree program modeled effective reflection-on-action and reflection-in-action. Reflection-on-action was modeled by professors who adapted courses from year to year based on classroom demographics and learning type. Reflection-in-action was modeled by professors who adjusted class activities in response to how the students responded. Joanne discussed the use of both types of reflection during all interviews and demonstrated both during observations. She shared this about her own use of reflection-on-action:

I like to look at what worked and what didn't work, and I do something different every year, and also, I'll take notes on my lectures, and sometimes years, what I use that year works great, and doesn't work great on the next year, and then also, my supervisor and I, when we sit for coffee, it's what we talk about.

Joanne noted that change was difficult in the nuclear medicine community. However, she knows there is a constant requirement to update methods, techniques, and course content in the ever-changing world of nuclear medicine.

Change is hard. We all agree. Change is hard, but in the medical community, if I'm your patient, I want you to do whatever is best for me, which is my goal of teaching. I want you to do whatever is best for me, and I want to build my students such that they kind of realize what's best and not just take that what this old technologist says is best.

Regarding reflection-in-action Joanne added,

Sometimes it's that rehearsing we do, that mental rehearsing before you walk in. And you've got, okay, I'm going to do these slides, and I'm going to do this. And then you think about your students and how they're just going to go to sleep. And you think, okay, how else can I get this information across, because last year this worked fine.

Joanne also reflected on how she has grown as an instructor—growing from one who teaches processes and procedures, to one who focuses learning on content. She noted that being a graduate of a nuclear medicine program gave her the procedures, but she lacked the content knowledge to be a good instructor.

... when I first taught, I had to do process [steps by step process], because I didn't have any content. And I only do a, b, c, d. I didn't know there were objectives, but I knew kind of where I was going, I hoped, because I had test questions over that. And now I think, being in a classroom, once you've reached that level of comfort with the content [understanding how nuclear medicine interacts with the body], and the stuff I learned in school (degree program) you can do anything, anything with that class that day and make it productive, and students learn.

Summary

The data collected from Joanne were collected over three months. Over the course of this time, Joanne demonstrated an incorporation of program materials in her classroom. She modeled some of the interactive, adult-focused teaching practices of her Adult and Continuing Education degree program professors as well as connected to many experiences from multiple professors and courses in the program. While a formal faculty development program did not exist in her school, Joanne was considered the program's adult learner expert regarding how to teach adults.

There is reasonable evidence from the interviews, observations, and reflective journal that Joanne demonstrated transfer of learning in the context of PFL.

Kenny

Kenny graduated with a PhD in Adult and Continuing Education in 2010. Kenny was unique from the other participants in that he was a graduate of the doctoral program rather than the master's program. He met the criteria for this research study by completing the 18 credit hours required core courses. At the beginning of this study, Kenny had 12 years of experience as an instructor teaching graduate level courses at his primary institutions [adjunct at two others], eight of which were prior to completing the 18 credit hours core curriculum in Adult and Continuing Education. At the time of this study, he was in his third year as an adjunct faculty member at a midwest university. Previously, he had taught undergraduate business courses on a part-time basis. Kenny's teaching can be divided into three phases: (a) prior to entering the Adult and Continuing Education degree program—three years; during the program—five years; and (c) post-graduation—five years. At a military institution, he was a member of a 12-person teaching team where he was responsible for two classes every week, instructing those two classes to four different small group classes. The students in these classes were, for the most part, majors in the US military. As an adjunct faculty member at the midwest university, he taught when he was needed for courses. These courses were taught in the evenings, and student ages were 25 and older. The researcher only observed a leadership course, the adjunct class sessions with eight students. However, Kenny's comments during interviews discuss his teaching at both settings.

The two sessions were observed for an eight-week course that met once a week in the evening for three and one-half hours. The two observations were conducted at two consecutive class sessions. The second interview was conducted between the two-programmed observations.

In the first observation, Kenny's class was moved to an alternate classroom by the university's classroom coordinator. The set-up of the class was non-traditional (see Figure 6).

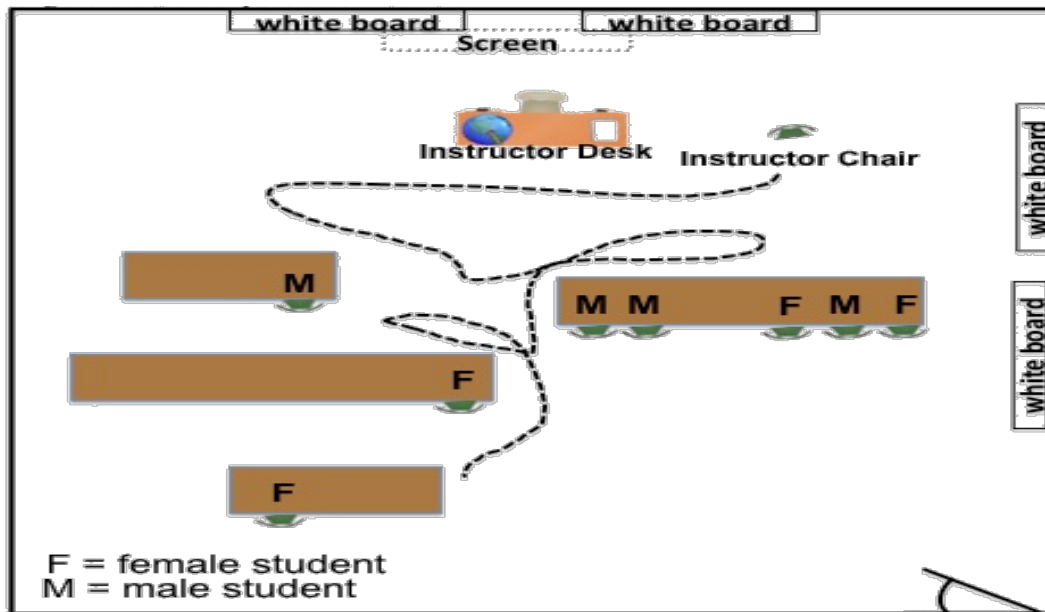


Figure 6. Kenny's observation #1

The unique classroom setup and Kenny's adaptation to the new classroom are captured in his narrative. The second observation was conducted in his regular classroom. The setup was consistent with a U shape, interactive classroom (see Figure 7). Both classes observed consisted of eight students, four males and four females. Each class lasted three to three and one-half hours.

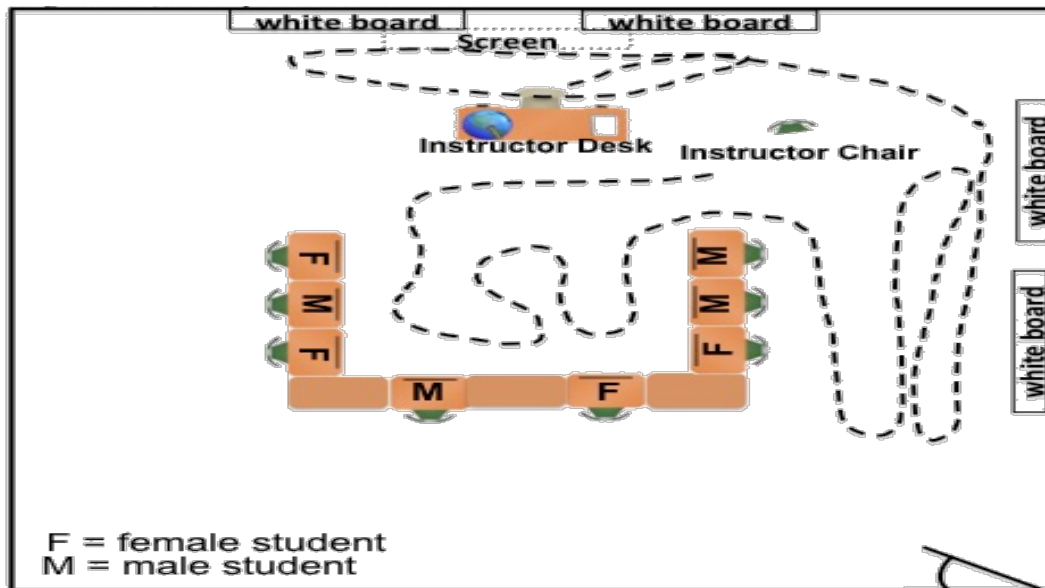


Figure 7. Kenny' observation #2

The classrooms for both observations were the same size classroom with a backlit screen-projector, an instructor's workstation, and multiple whiteboards. Kenny started the class sitting in the instructor's chair. He did not use the instructor's workstation beyond opening and closing the class presentation. The classroom setup during the first observation forced Kenny into a more dynamic teaching/interactive approach than that during the second observation. He used his chair and class material as a mobile desk during the first observation, as he moved from student desk to student desk.

Kenny used a similar approach in the second observation as in the first observation, starting the class sitting in the instructor's chair and did not use the instructor's workstation beyond opening and closing the class presentation. Kenny walked from student seat to student seat, involving all students in a question and answer session. As the class progressed, it became more "*out of your seat*" activities, then a lecture. He did conclude the second observation with a few slides to highlight a point and to prepare the students for the following session. Kenny

demonstrated a variety of teaching techniques during the two observations. Many of those techniques were small group activities that involved students involved in their learning.

Instructional Practices

Teaching Style

Kenny's teaching style was interwoven with his teaching philosophy. To Kenny, a well-defined and simple teaching philosophy embedded into a teacher's style and approach in the classroom. Simply stated, Kenny refers to his teaching style as E4AC (energy, effort, enthusiasm, empathy, authenticity, and credibility). When he talked about it, he wrote each letter down, stopping to discuss what each meant before proceeding to the next letter and how his philosophy informed his teaching style.

This is my teaching philosophy... energy, effort, enthusiasm, empathy, authenticity, credibility. And I'm teaching today for next week... You have to be excited about what you teach... you have to bring the energy that excites the students...I teach with effort and enthusiasm and I want the students to accept me with enthusiasm. You know, I want them to look forward to me coming into their classroom no matter what I'm teaching... another E is experience. And I try to share that [my experience] with students so that they look forward to my classes... As I told you I have taught undergrad classes, these classes are adults so I have to have some empathy, you know what I mean?... but I've got to be credible to do that... And to be credible I have to be authentic. I have an obligation if I am teaching for next week.

Later, in the third interview, Kenny expounded on his teaching style and how it impacted student preparation.

It's [teaching style] tied a little bit to what I said my philosophy was, E4AC... And that translates then to preparation on their part.

Oh, we [students] have [class] with [Kenny] next week. I better do the reading.

On the day of the first observation, Kenny was moved from his normal class location to an alternate location by the university class coordinator minutes before class began. The new classroom had a different classroom setup. The first few minutes of this observation provided insight into Kenny's teaching style that would not be available had the classroom change not occurred. Kenny used experience, enthusiasm, and authenticity as aspects of his teaching style. During the classroom switch, he demonstrated his teaching style by not rearranging the desks or directing student seating. As an observer, it was difficult to tell this was not his normal classroom.

Yeah, I decided I wasn't going to say to them, hey, come on and move forward. They made a choice, you know, based on the room. And you know, sometimes it's, I don't want to be close to the teacher. I want to be close to my friends. There could be something else. You know what I mean? So, I just, I decided to respect that and just leave it... I didn't want them to think, you can't sit back here and hide... So, I came around and got closer to them, really, in a couple of cases, then, if they had sat in the front seats... I saw the configuration and placed some seats across the front. I thought they would use them, actually there were 8 seats, and I thought they were all going to move up. And then I realized I had tier seating, so I just moved the other way, I went with where the students elected to sit.

Kenny responded that he allowed the students to sit as they did and adjusted his classroom activities, “ *Well, they weren't going to come forward, so I went to them.* ”

Additionally, Kenny's teaching style included the integration of white board work. Based on the two observations, Kenny extensively used white board instruction. During the second interview, he explained why white board use is a large part of his instruction.

...I try to do more white board, because, if I do that, I think they're more likely to take notes. You know, here, you put slides up and sit back, and they're kind of entertained. And they don't all get it.

Philosophy

On the participant background information form, Kenny noted that a significant part of his teaching philosophy was the belief that student learning is more than just an academic endeavor.

... so what I try to do is, give them something that they can use tomorrow...what I decided is that, you know, my job is to make their experience valuable so that they can apply something the next day.

During the first interview, Kenny was asked to further develop the idea that learning was more than an academic endeavor. He stated that he approaches every class session with the philosophy that he must give the students something they can take away and apply immediately. Using an example of a student's reflection he responded.

... she said, I've never read anything like that... just having to search for article, and then come in and we can discuss them and listen to others...I have a subscription to the Wall Street Journal online now. I'm making her a better employee tomorrow for her employer by doing that...That's what I try to do.... That's what you're going to get for take aways from me... And this is not just an academic endeavor. The idea is, your value added is an employee tomorrow. I'm going to give you things that will make you more valuable.

Kenny explained he has always used the E4 components of his philosophy, further noting that the AC components were added after reading *A Skillful Teacher* (Brookfield, 2006).

... the AC, I really kind of borrow liberally from Steven D. Brookfield (2006); Authenticity and credibility... Now, I have my own interpretation of it. But you know, if you're look at A Skillful Teacher, you would find authenticity, credibility in there. And it was just in doing that, kind of as I read that and I thought about how I teach and what I attempt to do, it kind of codified it.

During the final interview, Kenny addressed the statement: Teaching is a process of change that is never fully completed by the teacher and learner in the classroom. This is the hardest part of teaching because educators rarely see the finished masterpiece. "That's true. I believe that."

We see a little of it... you can tell you're making a difference by looking in students' eyes. When they hang around to talk a little bit... people say, this is my favorite class so far. And so I know I'm making a difference there. And then some people are... are going to continue, you've gotten them excited about education, not necessarily education, but learning. And that's why I [student] do this piece. And then, I [student] didn't know that, now I'm [student] reading this. Oh, wow. And you make a difference that way.

... if you teach adults it becomes a liberal arts thing, you know, you look at that Lorraine Zinn thing, progressive radical, liberal arts, humanism, behavioralism, okay. Well, you know what, at the adult level, or the graduate level, I think it's about humanism. But I've got to establish some liberal arts credibility that I'm an expert about a few things, you know. And I'm the doctor in the room.

Zinn's (1990) philosophy of adult education inventory was used in Introduction to Adult Education.

Engaging Learners

Kenny believed in *meaningful learning* and connected it back to his time in the program. Meaningful learning refers to an individual connecting that knowledge with other related knowledge stored, as an active constructive process (Jonassen & Land, 2012). Kenny referred to his approach as “... *to connect the dots.*” He also stated later in the interview, “*And you’re making it relevant to them through the methods that you’re applying in the classroom.*”

The following excerpt describes Kenny’s use of teaching techniques to encourage meaningful learning.

... if I put it up on the white board, they think it’s coming right out of my head. And because I’m drawing them [slide concepts], they know I’m going to erase it at some point. You better take a note... Engaging them, mentally, yeah, and cognitively. Making them, kind of, try to help them make a connection to give, truly, if you’re going to use it tomorrow, you got to take a note tonight to take it away baby.

Adult Comments

Adult learners have multiple commitments and life experiences (Merriam & Brockett, 2007). Kenny’s class was made up of eight students from a variety of disciplines.

... one is the IT director at an area hospital, one owns a little shop here in town, one is a recently retired Army officer, one owns his own company-a collision repair, one works for a non-profit, one actually is an active duty guy, and the last one is a lady who works for the culinary institute. And now she’s with, a state Department of Nutrition or something like that.

The students' experiences were very important to Kenny; their active participation in the discussion was important. He wanted every student to share his/her experiences or contribute to the class.

I need to hear their voice. I need to have them talk, because often times with adults, particularly at night, they're tired... And one guy or gal answers, and that's it. And the rest go, that's a good answer... And you're looking for a little more. You're looking for some additional clarification. You're looking for additional points of view. You're looking for other perspectives. And they're comfortable with what John just said. And I'm not. I want to hear your voice. So, I force that. I force that with those articles. I make them talk. And if I make them talk at 6:30 at night, they're more likely to offer me something at 8:30.

Kenny further amplified the importance of voice during the third interview, recognizing that past teacher or fellow student may have taken a student's voice. Kenny was determined to provide an environment that encouraged students to regain their voice. His enthusiasm and effort in preparation and presentation were his catalysts to providing an opportunity for his students to have a voice in his classroom.

... here we go, let's, this is, and then they in turn will perhaps be excited about it or participate you know. Because, not only do I want to hear the extroverts, I need to hear the voices of the introverts occasionally. I'm going to try to encourage that as much as I can. I mean, I notice people who are certainly more loquacious or trend to that, while other people may be reticent to speak. And that may be due to a previous experience or a bad experience or things like that. But particularly in the military environment, when I teach here, it's like, I want to hear the voice of the female logistician, who's maybe an introvert. When we're

doing exercises, if we haven't primed the pump with her, she's not going to play well, or participate with her peers. And then we don't get collaboration. You know, you need a level of collaboration in the classroom in a cohort environment. And so I try to encourage that by doing exactly what I said. I'm setting conditions today for next week.

Teaching Techniques

During the first observation, after starting class Kenny recognized that the students were struggling with a concept he discussed the previous class period. Instead of pushing through the class, he fell back on the muddiest point technique to determine the point of confusion. Once the students picked up the concept, Kenny worked his way back to that night's intended content. What was interesting about his use of the technique was he did not jump directly back to the programmed class material, but worked back using different methods and techniques such as asking questions, having the students discuss a clear point from the previous class until all the students understood the content.

A consistent theme in both the interviews and observations of Kenny's teachings was his use of a variety of teaching techniques. The different techniques used by Kenny included, but were not limited to, small group activities. Additionally, Kenny used a jigsaw technique by providing different books on which students provided a short reflection to the class. He provided the students with different sources. The students were responsible for facilitating an 8- to-10-minute class discussion.

... they all focused on different process improvement things that are tied to quality. Juran Pareto's 80/20 [principal], Edward Deming's 14 points, Ishikawa's fishbone diagram or a cause and effect, in addition to process improvement, history grams, fishbone diagrams, and all that sort of stuff.

However, *all students benefited from the activity because they could compare*. During the second observation, the researcher noted that a student had missed the last class period. Kenny used the jigsaw activity used by professors in the Adult and Continuing Education degree program to assist the student with material.

... John is back. He missed last week. Here's what I want you to do. I want everyone to look at your notes from last week, and I want you to teach him. What one thing stands out from our discussion? Try to teach him one thing.

Kenny went on to talk about why he believed that technique is effective and why he chooses to use it during his eight-week class.

... the other thing is, it's only eight weeks [the course], and it's over. The other thing is, they missed that. I'm not going to recover that. I don't have time. We've gone through it. So, the only way they get the benefit of it, is if we discuss it in class.

A theme discussed by all the participants, and also used by Kenny, was understanding that adult learners are unique and require a different approach than traditional students. With most traditional students, there is an expectation that information is provided to the student and assessment determines learning. Kenny noted that with adult learners, there is a need for some discussion, interaction, and activities to involve their different learning styles. Part of that, Kenny said, was “... *knowing they [adult learners] need to know what you are providing them is worthwhile.*”

Probably for 4 hours, you need 5 to 7, or 6 to 7 topics. You might get to them, you might not. But you need to have that and an activity or two to try to make it worthwhile.

Motivation

With experience of teaching at three different institutions, Kenny provided a distinctively thoughtful look at motivation of the adult learner. He asserted that some learners are goal-oriented (Houle, 1961):

... the undergrad guys, when you talk to them and ask why did you come back to school? You know, I started at KU, and then I got married, or dah, dah, dah dah. And now, I'm kind of stuck. If I don't, the only way up at my company, is I got to get a degree... so, the only way to continue the discussion, is you just, you got to keep asking questions.

Kenny went on to discuss how it takes a great deal more questioning from the instructor to enrich the teaching and learning environment for all students.

Reflection

Reflection enables deeper, more thoughtful learning for adults, which was demonstrated in at least two courses of the Adult and Continuing Education degree program: Adult Learning and Motivation and Characteristics of Adult Education. Kenny discussed his use of reflection during the first interview and demonstrated how he used reflection during the first observation.

... I want you to write down what your thoughts are at this point. I said, I'm giving you reflection time... We covered some of that material, did we not? Before you get up, couple thoughts, little reflection. And I said, I'm going to be quite and leave, or whatever. You see what I'm saying? So that's how I handle that.

Kenny modeled his use of reflection during the first observation. During the class period, he seemed to notice the students were confused by the discussion. He projected a slide that portrayed what he was attempting to convey to the students. Once he explained the slide, he asked the students to reflect on the slide and accompanying discussion, and in their own words

write a paragraph about the concept and how it correlated to the readings. When asked in the following interview to describe this event, he responded.

I find that, if I do that a couple times, then students start doing it on their own. And that's what you also saw, because I've primed that pump in previous weeks. So, now they're making the connections. And they're making the connections to the readings they brought in in some cases. And that's the part of it. So, they get excited about learning then. And they realize it's not just every week. This is, adult learning is about taking tonight and applying it tomorrow.

Adult Learner Commitment

Kenny stated a large part of teaching adults is understanding that there are competing aspects of an adult learner's life and that life, at times, take precedence over class. He categorized the latitude that he gives students within his E4AC philosophy under empathy.

It comes to empathy. So, yes... They're adults. They have another life. They got other things going on and I don't know, I don't know everything outside. So, if, I'm going to trust you if you ask me something, or if you say something's late, or you didn't print it, or, or whatever... A late paper would have a point deduction... Am I going to give him a zero? I don't think so. I'm teaching him the rest of the year, too.

Program Influences

As was discussed in the introduction of Kenny, he came to the Adult and Continuing Education degree program with experience and degrees. When the researcher asked him if his method of teaching had changed post-doctorate or remained the same, Kenny responded:

... I'm probably a little more confident, but that's age and experience. And I realize I'm more of an actor. ...I have a good attitude, and I was going to learn something new every day.

Kenny's initial impression was the degree program did not provide him with knowledge that would directly transfer to the classroom or to future learning or applications. However, as we continued the interviews and observations, a different sense of connection developed in Kenny's responses to the researcher's questions. This excerpt demonstrates that while Kenny was in classes in the Adult and Continuing Education core courses, he was, in fact, using his learning in an educational venue at one of his graduate level instructional positions.

... so what happened is, that I took things, you know, too, as I saw things here, and was exposed to things, I just transferred that right down to [a university]. And it worked real well. You know what I mean? So, I think I do the same, you know. But the other thing is, when you're teaching at night, you have to be prepared to entertain people. But you have to bring a little energy.

When asked about his Adult Education textbooks, if and how often he used them or referenced them, Kenny responded:

... very rarely. I mean, I have them, and I'm not sure what I'm going to do with them in a couple years... I used the methodology books in in mentoring thesis students. I use these all the time. I've used Adult Learning, Learning and Adulthood, and the Philosophers, and the Five Perspectives. I mean, I've pulled them out. There here[on a bookshelf in his office], so I will look at them. Every now and then... I think I have, inculcated it, I suppose, or kind of synthesized it.

During the second interview, we discussed the classroom change. He spoke about how every session is different and required a different set of skills and attention. As he was talking about these skills, he recalled a phrase from one of the most notable adult educators.

... much like my friend Brookfield says, you know, he said, be comfortable with ambiguity. And I don't know if I used the term last week, but I talk about operating without a net. And occasionally, I'll say, just go teach it. I mean, I taught the same lesson twice this morning, and it was, the delivery and the receiving of it, I'm sure, was completely different with two different staff groups.

Earlier we discussed Kenny's philosophy of experience, enthusiasm, effort, and empathy. During the third interview, Kenny mentioned where the authenticity and credibility components of his philosophy originated:

And the AC, I really kind of borrow, liberally from Steven D. Brookfield (2006); Authenticity and credibility.... Now, I have my own interpretation of it. But you know, if you're look at A Skillful Teacher [Steven D Brookfield's book], you would find authenticity, credibility in there. And it was just in doing that, kind of as I read that and I thought about how I teach and what I attempt to do, I kind of codified it.

As we continued to discuss the implications of the degree program core courses on his instructional practices, the researcher asked Kenny if any of the classes or books directly influenced, developed, or modified his teaching practices. Kenny stated:

Oh, that's a good one. I think, and I'm not sure where they were [walking over to his office bookcase], okay. But I would say that reading Brookfield's book [Skillful Teacher] and then Cafferella's book [Program Planning for Adult Learners] (Caffarella, 2002) and I don't have, where is, Adult Motivation [Enhance Adult

Motivation to Learn, by Wlodkowski]. I think those courses that had us read these two books were, you know, helped in the classroom. I enjoyed philosophy of education and philosophers and that.

As he talked about the influence of books and courses, the researcher asked if there were any activities or techniques that translated to one of his classes.

Yes. Well, yes. I have... one-minute papers are brutal because it takes five minutes to do it. But it gets students' attention. So usually about the third or fourth lesson, I'm going to tell you where I've seen some other things... then, the muddiest point, [Professor #1] uses this. But you know, when she did it... And the idea is that you hand out a 3x5 card and you go, tell me what you didn't hear. And I do that down at [a university] and other places. If you look at my, well, my bag's in the car, 3x5 and other cards in there. And the idea is to hand it out. At some point, I'll go, alright, what's not clear to you? What did you, what are you disappointed we haven't spoken about in here yet? And then I look at it. It gets me a feel for what they've learned, haven't learned, or if I've really missed something.

Other Themes

Resources for Others

At Kenny's primary teaching institution, military institution, he is one of 12 instructors on a multi-disciplinary teaching team. He is the lead instructor and often teaches the same class more than once a day to different groups of students. As he follows or is followed by other instructors, he understands the importance of state-of-mind of the students as his classes end:

I've got to help set conditions so I don't do this. So when [the team history instructor] walks in for history, they're going... He can't teach under those conditions, if I fire them up, because I'm a jerk.

I'm teaching for four other people, and I'm teaching for next week. And I don't think a lot of people in this building understand that or teach that way, personally.

Using his understanding for adult learners and as the lead instructor, he helps guide the other instructors in how best to approach an adult learner.

And so, that's why I say to new instructors here, I say, you just got to go teach it. Trust yourself, have some confidence. Go in there and teach with some enthusiasm, and people are operating without a net.

Kenny's influence stretches beyond his team as he is often used as a resource for other teachers at the military institution and others for his knowledge of adult learners. He recounted how he at times goes back to his office, refers to a text book, and provides other instructors valuable insights into teaching adult learners:

...Somebody will say something, and I'll come back here [his office] and I go, I said, I don't think so. And I'll come back here and quote somebody and send an email back to kind of, you know. Every now and then I hear something, and you kind of go, wow, where did he get that from? So, I'll come back and pour through one of these [textbooks], you know.

Summary

The data collected from Kenny's case study was collected over about one and one-half months. Over the course of this time, Kenny's responses did not always indicate that transfer occurred. He modeled interactive, adult-focused teaching practices and activities from his Adult and Continuing Education degree program's 18-core course hours, as well as connecting with many experiences from professors and courses in the program. While Kenny did not articulate significant influences from his Adult and Continuing Education degree, there was reasonable

evidence from the interviews, observations, and reflective journal that Kenny demonstrated transfer of learning in the context of PFL.

Aynsley

Aynsley teaches in a physical therapist assistant program at a local community college. The college at which she teaches is classified as an urban community college, meaning it serves an underserved population. Aynsley has an associate's degree in physical therapy and a master's degree in wellness education. She took a semester off after completing her master's degree and enrolled in the Adult and Continuing Education doctoral program. Her qualifications for this study included the Adult and Continuing Education degree program core courses, which were the same for both the master and doctoral programs.

At the start of this research, Aynsley was in her fourth year as an instructor in the physical therapist assistance program, which means she began teaching courses before she completed her master's degree. Aynsley completed the Adult and Continuing Education core courses in 2015. By her own admission, Aynsley's master's degree in Wellness Education provided her the skills and knowledge as a subject matter expert but little in preparation for teaching in an adult learner setting. *“I felt my master's degree in wellness education did not, barely touched on education.”*

Aynsley's teaching career can be divided into three phases: (a) teaching while completing her master's degree—one year, (b) period between completing masters and starting doctorate—six to eight months, and (c) completion of Adult and Continuing Education core courses—two years. Aynsley was one of four instructors in the program. Her course load included three major courses: fundamental treatment procedures, musculoskeletal II—upper extremity, and clinical skills II. The program required students to complete prerequisites of a bachelors degree or

equivalent, and health or math courses, so students ranged in age from mid- to late-20s up to their mid-40s. She estimated the average age of students enrolled in physical therapist program as 31 years old.

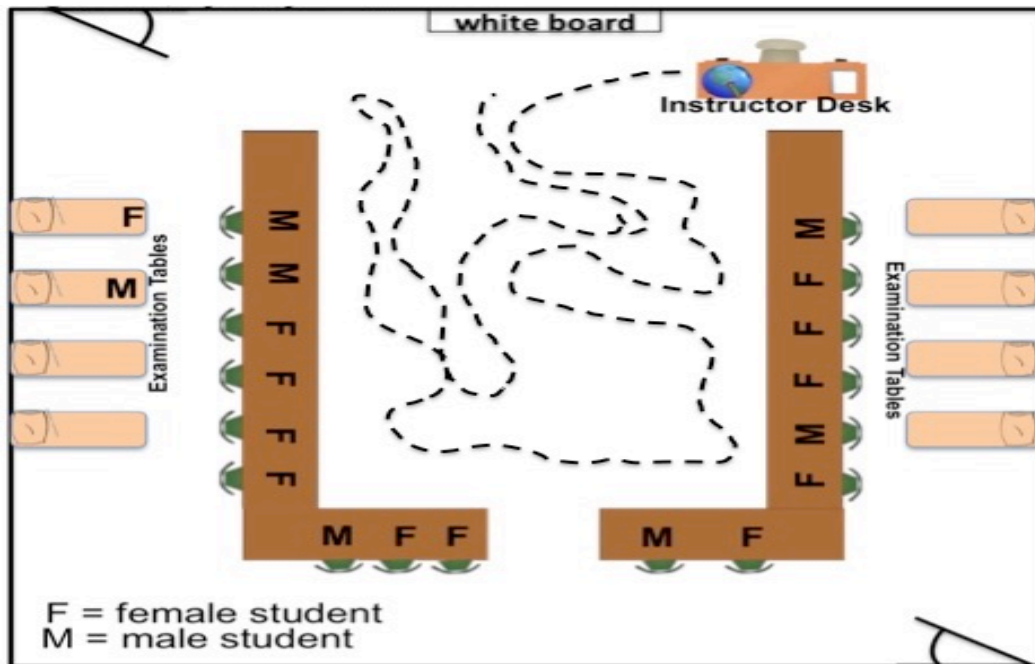


Figure 8. Aynsely's observation #1 and #2

The two observations of Aynsely were conducted within a one-month span and in the same classroom with the same students. In both observations, Aynsley's class consisted of eight males and 12 females. The classroom was set up in a large "U" shape with examination tables across the wall behind the legs of the "U" (see Figure 8). Throughout lecture and discussion periods Aynsley moved around the inner portion of the "U", stopping in front of desks to engage students.

During the hands-on portion of her class students, self-selected small groups moved to examination tables along the walls (see Figure 9). When the students were conducting the hands-on portion of class, Aynsley provided instructions while in the middle of the "U". As students

asked questions, she moved from examination table to examination table. At times during hands-on instruction, when she found a point valuable to all students, the students converged at the examination table where Aynsley was located.

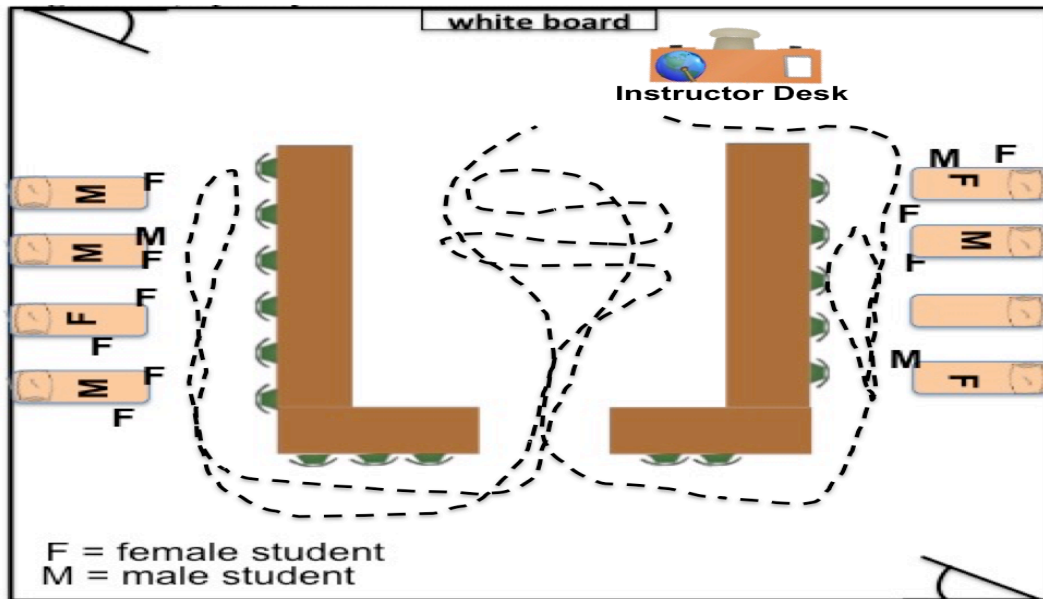


Figure 9. Aynsley's observations #1 and #2

Instructional Practices

Learning Style/Teaching Style

Throughout the data collection process of this case study, Aynsley described her learning style as linear:

... linear is a kind of, I think along things fairly straight lined. That this leads to this, that leads to this, that leads to this, that leads to this. I like to know that, or I like to know the concept and then I like to know what steps it took to get to the concept. So that's what I kind of classify as more linear. I'm not very abstract. I'm kind of, this is what it is, pretty concrete. I'll listen. I like to know.

During both observations, Aynsley demonstrated how her teaching style was a blend between apprenticeship and developmental (Pratt, 1998). She first mentioned her combination of apprenticeship and developmental on the participant background information form and expanded her explanation during the first interview as follows:

...apprenticeship and developmental as a teaching method... Well, in the field that I teach [physical therapist assistant], apprenticeship is very important because you have to learn what you're doing. You learn how to manipulate someone's body by putting your hands on someone's body and manipulating it. You have to understand where the pieces are and what it's going to be doing. So students, work through a lot of practical tests, there's practical application and there's a lab every day. So I will demonstrate the skill and then I might do part of the skill and let the student complete it. I'll let the student do the skill and then I'll give them feedback. I'll have their fellow students give them feedback. Then we do case studies where they get to make a lot of decisions as they move on through where they make some more of the decision making, the critical thinking. When they leave my classroom, my job is to have them prepared for their apprenticeship, their internship in a clinical. ... in the development... is to me, the learning is more important than the teaching.

Later in the interview, Aynsley added some insight to the developmental aspect of her teaching style, which she described as more of a mantra than a style. Aynsley clarified her use of mantra, adding:

Oh, because I, yeah, a lot of it came back. I did learn some of it in school. I mean, I learned it, I knew it before, but like I said, it was validated by some of my classes, that this is truly a philosophy. So it was what I knew and so that strengthened it. If someone just tells

me what I know, then they're just memorizing it for the test. They're just memorizing it to get by, and especially if they're using my same words, then that doesn't feel like they're doing any thinking. There's no thought process. They're not digesting. There's no application. It's just spitting it out. So I know what I know. I don't know what you know though. So tell me what's in there. That's kind of how it is.

One of the facets of the Adult and Continuing Education degree core courses is gaining some insight into the learning styles of the students. The professors in the degree program demonstrate different ways to engage students with different learning styles. Part of the initial interview included questions about learning styles and how, or if at all, the participants had accounted for their student learning styles. Aynsley discussed how she accounted or attempted to account for the different learning style of her students.

Yes I do, but I modify it a bit. I do apply some, it is impossible for me to reach each individual's learning style. So I try to present the material in a variety of ways. I'll present the same concept in a variety of ways, but I always say it's your job to put this in the way that makes sense to you.

Teachers bring to their individual teaching style some amount of previous experience accumulated as a student. Aynsley shared some of her acquired experience that influenced how she approaches teaching, the responsibility of students, and, more importantly, her responsibility as a fellow learner and instructor. From the respect of her teaching style, the most important thing is learning for life, not for a test.

My goal is that you [students] learn it... The worse that I hate to hear is, is that going to be on that test, do we need to know that for the test? Seriously, I don't get angry very much, but I want to throw a book across the room when I have a student ask me that,

because first of all, if I didn't think it wasn't important, I wouldn't have spent my time telling you about it. Secondly, I don't care if you know it for the test, I want you to know it for your life. So that bothers me. So that's why I said, to me, the learning is more important. I tell them, kind of I had a mantra, that would be my plaque over my room, would be, don't tell me what I know, tell me what you know.

Using a program-testing scenario, Aynsley described how she practices her mantra. In her therapist program, students answer sets of computerized multiple-choice questions that help put them in a therapy situation. The students do not always do well on the computerized questions. Aynsley uses the aggregated results to assess whether she has successfully communicated the material to the students and if she needs to cover the material again:

After every test I give, I open up the test and I see the percentage of who got which question right, and which answers they selected and stuff. If I find a question where I notice that more than 60% of my class got the question wrong, and especially if they all were just totally off on the concept, I take that, and my first reaction is, okay, where did I fail to teach this concept to them. What was wrong in my delivery, did I forget it, did I misspeak? So it's always like, I take my students' tests as an assessment of my skills and my work as well as an assessment of their skills.

Throughout this case study, the discussion of outcomes, objectives, and content versus student deep learning continued to surface.

I don't look at it from what do I want to teach my students. I always look at what is it important for my students to learn. Not only today, but at the end of the semester, and at the end of this program. That's much more important, and that guides me more than what do I need to teach. So if the teaching is the chicken, and

the learning or the student is the egg, then the egg is more important because that's what it's all going to come down to is, what they're learning.

Brookfield (2006) stated, "To be effective as a teacher you have to be comfortable with ambiguity" (p. 121). When Aynsley was asked about being comfortable with ambiguity she replied:

... I can be very ambiguous. I know the goals I need to meet and I know an overall timeframe that I hope to meet those in, but I, from the very first class time I meet them, I say, I reserve the right to change the schedule any time I feel like it, for a good reason, or for no reason besides except it suits my purpose. They look at my like, oh...truth. So with that, I can really say, okay, we're not ready today, and I changed that, actually I had to change that last week. It's like, I wanted to get all this, these certain tasks done in a certain time, but I could just see by their faces that they weren't ready for that. So I just totally walked in the class and I saw the night before, and so I kind of changed my whole plan. I said, okay, this is your class and we're going to start from the beginning, and you come at me and tell me what you want. We just let them totally lead the class until they got comfortable. You know it's funny that when I go in and if I take an hour or a half an hour to do something like that, I end up getting back on track quicker than if I try to force it, because the questions that they think they have are usually very easily answered, but they're so stuck on it that they can't accept anything else until they get it answered. So if we address their concerns up front, then they're ready for more.

Aynsley used a variety of teaching techniques; early on she demonstrated her ability to use the white board effectively, as well as some lecture and classroom assessment techniques.

Philosophy

Many times during the study, Aynsley mentioned how instructors in her field tended to take a more behaviorist approach to teaching and learning. She talked particularly about the assessments as the punishment part of being behaviorist. Her teaching philosophy was rooted in the constructionist theory. A sign with a quote she made best described how she reconciles her philosophy with program requirements.

... my biggest problem with testing in general, is that you have to do it, especially in the health care field. To me, it's very behaviorist and I don't like that punishment part of it. I have a sign up in my room that says "if you and I need to take this to heart... myself, but if you just focus on the grade, you'll always be disappointed, but if you focus on the knowledge, you'll always be surprised." I made that, and I'll tell my students in the mid-term meetings, I know you're not real happy with these 78s on your tests, but I don't worry about you, because I can see that you're demonstrating the knowledge. Maybe you just need to learn how to take a test better.

At the base of Aynsley's philosophy is trust, both in her students and in herself, which allows her to be an actively constructionist educator. A constructionist educator provides the students with all the necessary knowledge and permits them to construct their own understanding and meaning (Merriam, Caffarella, & Baumgartner, 2012). Aynsley feels learning must be uncomfortable at times in order for students to construct meaning.

I think again, it goes back to a trust situation. I think my students trust that I'm not just going to throw something out there and leave them hanging, what they can't find. Then when I, and when I feel like they've had enough [discomfort able learning], I can say, okay, we're going to do this now, and they're like, okay, I'm good

with that. Plus they also know that I'm going to give them enough time to explore on their own later. So it's a trust both ways. I have to trust my students though, as well as they have to trust me.

During the second interview, Aynsley described how her philosophy married the necessity for assessments and her mantra “*Don't tell me what I know, tell me what you know.*” As part of that discussion she made mention that she recognized her use of behaviorist methods, while having constructionist traits:

... my content is always pretty much set. I have my content set, because I have massaged it enough, and moved it around enough to know how one flows to the next to have the best absorption [student absorption] I can have. I hate to be behaviorist like this, but we do have assessments that we come into, and, well there's a couple things. When my students come into my class, I've always met them all before once in the interview process, but I purposely, after I interview them, after, I mean it's a group interview, all four of us interview. I purposely put them out of my mind. I don't want to remember them, because I don't want to have any preconceived ideas of what they're going to do.

Aynsley mentioned earlier that trust was a large part of her philosophy. Her trust extends to include an adult-friendly learning environment. All students were responsible for class material and balancing out-of-class requirements and therapist assistance program requirements.

I don't worry about, if my students want to look on their cell phone, they can look on their cell phone, I don't care as long as it's not disruptive, because they know what they need to get [class material]. As long as it's not disruptive to the class, I don't take offense to that. I know a lot of people, a lot of instructors do, but I don't. It's kind of funny. Since I kind of make it very clear at the front [beginning of the course] that I don't mind those things, very

rarely do I have those things. They don't sneak. If they have something [to do], they'll do it, or they'll say, oh, by the way, my kid's sick and the babysitter might call, can I leave my phone here. I'm like, sure, no problem.

In the Introduction to Adult Education course, students learn about behaviorist and constructionist philosophical approaches. Aynsley demonstrated in both the interviews and during the observations that she tends to practice a constructionist approach to teaching and student expectations.

Students First

At the beginning of the first observation, Aynsley started the class in a way often used by professors in the adult education program. She engaged the students in small talk and asked about current events in students' lives. The technique is used to invite students to contribute in a safe non-threatening environment, which in turn leaves the student feeling safe to contribute during class discussions. Aynsley described why she does this and the advantages it provides the class as a whole:

I like to kind of break the ice. I don't like to just jump in real serious. If somebody has something that I think is good going on, I like the whole class to kind of be able to celebrate it and support them, and if somebody is kind of like, every once in a while I have somebody kind of share that they are having a struggle of some kind. Oh, I didn't get any sleep last night, the baby was up. It kind of helps me and the other classmates know what's going on and kind of help us be more sensitive to them or pull them along if they're having some trouble... It gives us a chance to kind of connect as a group. I really do believe that when you look at group dynamics and how groups are, and who's a leader. Sometimes as a leader you have to remember that you're also a group member.

Sometimes I think that really gets lost when you're a teacher and you're leading. So it kind of gives me a chance to be part of that group. There's times that I'll share something that's silly that happens, or something, to kind of get to be a validated member of the group, not just the leader of the group.

Students are the focus of Aynsley's teaching. Over the course of the interviews, she mentioned a young man who embodied her student-first approach to teaching. She shared a part of her experience with this young man in the following excerpt:

I had a young man, we've spoken of him before, but I had a young man who was really struggling, and we met, I helped him, and we would meet, and we would go over the information, and we would talk about the knowledge. I just knew this kid had what he needed to succeed, he was younger, he was in his early 20s, and he had had a really bad hand in life... adults in his life, when he was a teenager made bad choices that impacted his life. That bothered me, but he was a nice kid. He was on the brink of failing out of the program. He was out of chances, and we struggled to get through this one test. He had failed it once, and he had one more chance to take a different version of the test. I gave him the test, and we were sitting there, and when he pressed the button and he passed it, and he just cried and came over and hugged me and thanked me. I still get kind of emotional about it. It was unbelievable, and you know, not only did it help him finish what he was doing, but he had another semester of classes he had to do... it gave him the confidence to know that he could work hard and complete those classes. It also gave him the security to know that there were people older than him who said, I have you, I am behind you, that they really were when he turned around, because before he never had that.

After a touching story of commitment, the researcher asked Aynsley, “What in your teaching experiences said, ‘This student is worth saving?’”

His attitude. He was literally spent half his time trying to keep from drowning, but he would always be the first one, when someone would come to interview, or to ask about the program, who would sing its praises, and he just had a passion for the profession, and he was so positive about the education and the opportunity. It was his attitude... The process to come out, right. You know, and I kind of think that if I was able to give him a test that he just had to replicate knowledge from the very beginning, he probably would have never struggled, because that’s how he had learned how to take tests before. I don’t, it seemed like no one had ever, from his schooling ever before, had ever really dug in and said, no, you kind of got to think about this stuff.

As part of Aynsley’s students-first strategy, she discussed how she can identify students who may be struggling or might struggle and place them with a student mentor, who may have struggled in the past.

I’m in a very fortunate position. I’m also able to identify students who are going to have some struggles first, or see that they may have some struggles with some of the content. I require it at first, it starts the habit. They have a required peer mentoring where I have upper class students who are tutors, and those students who score below certain points, either have to spend three hours a week or two hours a week with the peer tutors for the first four weeks of the class until their grade, until they feel comfortable. Usually by then, if I have a four-week required time with the tutor, they’ve gotten into the habit and they’ve started using the peers.

An interesting facet of this peer mentor program is the selection of the mentors. Aynsley stated:

We ask. We, as faculty, we identify strong students, and we don't always go to the ones who are necessarily getting all straight As. We go to ones who have maybe started out struggling and have now learned how to manage it. So we look for different strengths, and we look for different personalities and different learning styles, because there's so much to meet. We give them the opportunity. Through our program, they're required to have so many community service hours, and being a peer tutor does apply toward some of their community service hours.

Another extension of Aynsley's student-first strategy was expanding a department-encouraged program of meeting with students one-on-one around the student's mid-term. The idea was to provide support, encouragement, and notification of unsatisfactory work to students who may not have a clear path to graduation. Aynsley took it a few steps further:

I take it further; I try to show them the path they've been on. Then I also take the time, instead of just saying, this is what you're doing, you need to do this, you're not doing this. I always take the time to ask them, what can I do to help you learn? What, is there anything that you need that I'm not providing? I like to be able to, I take it was a time not to just tell them the assessment of their skills, but I take it as a time for them to assessment my teaching, to tell me what is working and what's not working. Hopefully, they feel comfortable doing that.

Aynsley worked hard to help all students be successful.

Responsive to Student Learning Needs

As Aynsley discussed the use of this technique, she also touched on the importance of teachers who expose their vulnerabilities as a means to connect with adult learners.

I think it helps my students trust me a little bit more, trust that I really am there for their growth, and that I'm there for them, that

I'm not here as a job as much as, even though it's part of my job, and I joke around about that sometimes, but that my main focus is them and their learning and their understanding. So when I can still be the leader and still have the respect, but also have the inclusion as a member, it allows them to open up a little more and to accept kind of what I have to say, even if it's not what they want to hear. Or if I say, you know, I know this is really hard, that that comes from a position of a member, not a teacher saying, I know this is hard, but you can get it. That's a member saying, I know it's hard, I've been there.

From the observations and interviews, Aynsley was very responsive to her students and their learning needs. She identified a greater requirement for developing younger students than the older mature student:

My younger students need to be kind of encouraged because they don't have a lot of life skills to apply. So sometimes I have to give more explanation or kind of lead them to that path, is a little bit harder because they don't have anything to rely on. The program where I teach is a very competitive program to get into.

It was mentioned earlier how Aynsley took additional steps to encourage student learning. Understanding that many students learn differently, she asked students who might not be doing well in class if there was anything she could do differently or improve upon the opportunities for them to learn. Based on this observation, Aynsley was asked if she had ever modified her teaching based on student suggestions, to which she replied,

Yes. It was suggested by a few students, not a majority, but a few students that I do more drawing, more writing on the board, and actually doing like a visual map of what's going on. So I started taking a lot more time. Even though they might have a handout that has a chart on it, or a diagram of electrical wave forms, I'll

still go to the board and I'll draw it out. They seem to, that helps them a lot. I've also used it as a time to tell if a student says, oh I need it given to me this way.

Aynsley learned many ways to adapt to students learning through her experience with the adult education curriculum. She listened to each student's and responded to his/her needs.

I had a student who had a stroke as a 20-year-old, in her 20s, and she was like two years past stroke. She told me, she goes, it really confuses me when you go off note, when you add things to the notes. She goes, I feel like I can't, like I've lost. I feel like I've become lost. I don't know what you've done. So if you could just give me a cue that you're going off note. So now it's just kind of made me be a little bit more aware that if I am going to go on a tangent or something, I will say, you know this isn't really in your notes, but this is just going to deepen your understanding of the topic. So her advice really changed my style in lecture.

Specific Techniques

Aynsley discussed not using a great deal of PowerPoint slides and lecturing, but she provided them to students as a resource.

I have a lot of PowerPoint slides, I don't often use them... my students have accessed the PowerPoint on those topics on Blackboard. So if they want to reach out for themselves and look at a PowerPoint on something that I've lectured on, they can. Actually, some of the times, some of my topics I even have gone so far as I've done audio PowerPoint for them as well. So I lecture over the PowerPoint so they can review it if they want. I find that when I try to use a PowerPoint too much in class, since I don't go super scripted, my students get very frustrated because I might be talking about something that was two slides ahead, or three slides

behind. They're like, where are we, you know. So it's more my disorganization that leads to my students' confusion.

Adult Learner Commitment

It was widely discussed in the course included in the degree program, that adult learners are different; they acquire knowledge differently and face barriers to their learning. Aynsley discussed adult learners and how she came to recognize adult learners by being one herself. She also articulated how knowing this impacted how she engaged students in an adult learning environment:

What I said about [professor], I had a few times... It's overall kind of the overarching idea, is the idea that adults are so complex and individuals, and their reason for being in the classroom is so different. And you have to respect that. I think that comes a lot from my fellow students in the program [Adult and Continuing Education degree program] and my instructors in the program. And just when you start reading about how, and what motivates a person to learn that just comes to shows it.

During the first interview, Aynsley added some additional thoughts on understanding some of the barriers to teaching adults. She acknowledged adults who were returning to school after a career or building a family.

... I have a lot of returning students. I have a lot of people who have kids who have just gotten to high school so the mom can go back to school. I have the dads that are changing careers, so they're having young babies, and I know that they have the baby who cries at 6:00 in the morning or 5:30 or 4:00 or whatever. I tell them the same thing. I say, learn your time management skills, but sometimes I can understand this is the best that you can do, and it's not a reflection on who you are. It's a reflection of what your life is today.

The therapist program requires students to take an anatomy and physiology test as part of orientation. By looking at question performance, Aynsley was able to determine the knowledge level of the group of students and gauge the intensity of the first few class sessions.

That will kind of let me know how much detail I can really, or how intense I can start the class with. Plus we start with a lot of very easy professional behavior. We start with a lot of hands-on professional behavior stuff so I can try to establish the feel of the class environment before, the class culture if you will, before we really start putting any heavy content into it... what I do is some of my classes just kind of almost, they want me to start where I just have to pour the information into their head, which is not a strategy that I'm comfortable with. It's not a strategy that I believe in, but I have to kind of again, gain their trust and pour a little things, few things in their head that they can spit out to me, and then, I kind of start pouring less in and making them discover more to eat before they give it out.

Using a pre-assessment to understand students, knowledge level is a practice demonstrated by the professors in the Adult and Continuing Education degree program. Aynsley's reference to pouring information into a student is a reference to Grow's (1991) staged self-directed learning model. When students are dependent learners, the instructor must give informational lectures and overcome deficiencies in the student's knowledge.

Aynsley further discussed the application of the Knowles' (1975) andragogical assumptions of adult learning, punishment and penalties used in pedagogy, and how they do not work with adult learners.

It was validated that I think people do not respond to pressure and punishment and penalties. I think that especially adults, they respond to encouragement, and they're there for their reason and

they just need to be encouraged and they need to be taught how to. Maybe their mind needs to be opened on how to think. I just don't need to open up their head and pour a bunch of facts in and have them spit it out. I need to teach them to open up their head and learn how to think about something, and say, well I know about, I know how this works, I know how a bicycle works, so maybe I can take the information I know from a bicycle and I can apply it over here to a motorcycle, because they're similar, but one has a motor and one doesn't, but there's a lot of similarities.

During the opening moments of the first observation, Aynsley reviewed the agenda for the class period. After approximately 20 minutes of class discussion/lecture on electro-stimulation students showed signs of confusion, “*They were very frustrated.*” Aynsley assessed the situation and departed from the agenda and moved right into hands-on work with voltage and demonstrations of voltages in electro-stimulation. During the second interview, Aynsley described why she changed her approach and how she mentally selected the teaching technique she used during that class. Aynsley responded.

Thinking back on that class. I remember that, I was getting these feelings. It was almost kind of like a real time critical incident questionnaire type. I could almost see that they were saying, I'm not getting this, you have lost me. I was seeing it happen in real time, and I kind of felt that if I just kept going... there was just going to be so much internal dialogue in their head that they couldn't accept anything, and it would be, make e-stim [electro-stimulation] become something very scary, the whole concept. It would have probably haunted them for a long time. So by seeing that and seeing what the, knowing the topic well enough, I knew what their concerns were, and it's a hard topic to kind of teach because you have to come from so many different directions for such a simple thing.

Aynsley further elaborated how her experiences in the Adult and Continuing Education degree program influenced her actions.

Then I do know that I have gotten much, much more comfortable because of being introduced to groups and working in the small group setting with breaking into groups and trusting that groups work. I use to not really trust that groups work, and I used to be very, teach that, those lab classes used to be very prescribed. Okay, I want you guys to do this now. I want you to do this now, and now do this. Now I kind of give them some guidance on where to go, but I really let them work around because I trust that process a little bit better.

Andragogy

Recognizing that her students were struggling and adjusting how she presented the information to the students allowed Aynsley to remain involved with their learning and to circle back around to the topic of the day. Later in the third interview, she provided further insight into her approach to teaching adults.

It's made me become much more, take much more time to explain why we do things and to really let my students know that I consider them adults, and I want them to be responsible for what they need to learn, and I'm not going to treat them like children. But to explain, this is why we do this. This is how you learn. I understand that, but I don't have, I will be sensitive to that if you bring it to my attention, but it's your responsibility to take the information I provide you and turn it into the way that you can use it best.

Motivation

One of the topics discussed in the Adult and Continuing Education degree program was motivation and how it is a key element to learning in adulthood. Unlike the extrinsic motivation

of praise, punishment, and penalty of traditional learning, motivation in adult learning is intrinsic. Aynsley spent a little time during the second interview discussing motivation of adult learners. During this conversation, the researcher asked her specifically what she felt she had to trust the students to be able to do. Her response to motivation and trust was as follows:

To take responsibility for their learning, and I think you [students] find it difficult, and I will tie this back to the adult ed. I treat my students as adults, and some of my students that may be just out of college, or some of those students, even if they're older, have never been, in my opinion, treated as adults in a learning situation. So I have to trust that they will act as adults in a learning situation, and that is kind of, it's pretty much a leap of faith the first couple weeks in the class. Like I said, I think most people are never taught like an adult should be taught. Even through college, they're still taught in a very pedagogical way... because you turned it in today, instead of, you know you're going to have to do this... I don't care if you do it or not. It's up to you... I try to tell them it's not my responsibility to make you pass this stuff or make you learn this stuff. It's my responsibility to give you every opportunity to do that. It's your responsibility to get it done.

Program Influences

Aynsley discussed the Adult and Continuing Education degree program gave her a breadth of knowledge not only philosophical but also included instructional practices. She also discussed some specific classroom assessment techniques and theories. Some of these techniques included muddiest point, critical question incident. Aynsley talked about her master's degree in wellness education as providing her the necessary skills and traits to be the subject matter expert, while her Adult and Continuing Education core courses provided her with a breath of knowledge in teaching and adult learners.

To be brutally honest, We [Wellness Education] touched, we did a lot more on physiology and some on coaching, some on training because of the college it was in. We didn't do a lot of work on philosophy of education. We did more on assessments, this is how you assess your students, this is why you assess them, this is a psychomotor assessment, and this is a cognitive assessment. No philosophy at all really. Whereas in the classes I've taken at [Midwest university], the core classes I've taken, we really talked a lot more about the philosophy of the instructor and what their responsibility and their role is to the students. Not a lot about assessments of student performance.

As discussed earlier in this case study, Aynsley started teaching before completing her master's degree; she has been teaching since beginning her doctorate. It was important to the study to understand if she, as an instructor, had evolved over this time:

Yes, it's strengthened. I think I was drawn to an idea [how to teach], but I didn't have a word for it. I didn't have any validation for what I believe or what I felt was right in my interactions with my students. So I was kind of tentative on really being strong in that feeling. Since kind of having more opportunity to kind of look at the different philosophies and have them explained to me and the positives and the negatives of different philosophies, different theories; it's made me very comfortable in saying, I was on the right track.

Early in the case study data collection process, Aynsley indicated that she used her textbooks as either references for class or referred to the textbooks for techniques or ideas in dealing with adult learners. When asked specifically about using her textbooks, she responded:

I always like to go to the one, and I don't know if it's Intro to Adult Ed, or Foundations [Principles of Teaching Adults], or whatever it is, but it was when you talk about what an adult learner is [Adult

Learning Methods, by Galbraith], and you finally go, there I am defined. Yes! Someone put down, and so I kind of remember those, and I think about those. I think, you know, and that kind of leads me, you know, my students need to know why. I can't just say, because I said so. That's not good enough. They need to know why, and I already know that they're motivated to be here. So I've got that. So I pull on a lot of that from those classes... Then the electives I've taken on group dynamics and motivation have really kind of opened my eyes to see some character traits that are present, and to kind of, remember [professor] really stressing the point that, just because you have a tendency to be some way, that doesn't mean you have to be that way. So I will use that same advice, or suggestion. I don't go in as much depth as she did, obviously, with my students, but I will use that same. Just because you have a tendency to be defensive, doesn't mean you have to be. It's just your tendency.

The use of textbooks and reference material from the Adult and Continuing Education degree program is a strong indicator that Aynsley relies on her degree program to inform her teaching practices. She noted that she kept the books in her home office and used them to return to topics.

... it goes so fast that you're just trying to keep up. So there's times, like I can say, oh when I have time, I want to go back and dig deeper into this, and I'll ready something else and go a bit deeper into this, because it's kind of fun to...you just get more knowledge.

She further discussed some specific courses and books.

Then there's one on motivation, I can't remember the title, but it was in one of [professor A's] classes, and it actually has strategies that you can use as a teacher. I remember the first class I ever took

out there was with [professor B], and it was on, it wasn't program planning, but it was curriculum development. She said, oh, here's a book that I like. It had a book of all these different projects you could use in your classes, and I use that book, even though it was a supplementary book that we didn't have to have, I would go back to that one frequently, like the CIQ and all that stuff.

Later in the third interview, Aynsley added some additional thoughts on her books; specifically how some of those books influenced her teaching and how the program made her a better teacher of adult learners.

*I really remember a lot of work I did with [professor] on motivation. I thought that that was very beneficial. Even going back to *The Foundations of Adult Education* [Introduction to Adult Education] when we talked about Knowles and Houles.*

I've gone back into some of my other classes, and just before this semester, actually went back to some, a book on the strategies of learning, and teaching strategies like the critical incident questionnaire, and different types of collaboration and group projects that could be used that was suggested in a curriculum development class that I took.

So, I've used a lot of, I think I've used a lot. And I would probably say that I've used things that I don't even realize I use in just my thought process... I don't feel indoctrinated, but it [program] has opened my eyes to different viewpoints, and has helped me become a broader thinker. ... And so, with those things, it's going to influence how you teach and inform how you teach, because your mind is just a little bit different.

Then when I started taking the classes at [a midwest university], the adult education classes, and learning, oh my gosh, there's this word called andragogy and it means something. Then there was a

name for it [andragogy], and there was a techniques kind of brought to my attention, or concepts that I could create a technique that met those needs.

The classroom assessment technique highlighted by Aynsley was the critical incident questionnaire developed by Brookfield (2006).

The technique that I use, and I probably wouldn't have had the courage to use it before, and every time I get ready to use it, I have to kind of steel myself for it, and that's the critical incident questionnaire. When were you engaged? When weren't you engaged? Because that is a reflection of, I'm opening myself up to criticism of my performance to my students. Or, I take it that way...I find that an assessment of my work, kind of a formative assessment of my work, not so much their work. So, I use that and I don't think I would have really had the courage to use it had I not seen instructors, multiple instructors employ that in some of the classes I was in, and realize that you can look at it honestly without taking it as an insult. And you can use that information to benefit your students.

During one of the interviews, Aynsley talked about how the stresses of being an adult impact the adult learner. She elaborated on those stresses, referring to McClusky's (1963) theory of margin, which was discussed during Introduction to Adult Education course:

And the idea, I remember there was a, I wish I could remember the exact terminology. And if I could flip back and find it, but the idea that you have so much time, or so much energy, and you have stresses. And you have time to be open, and how that balance shows how you can learn, that if the stressors [barriers] in your life, and I don't know if they used that term, are too heavy. Like, if you have to worry about feeding your family. You have to worry about picking up your kids from school. You have to worry about

this, then the ability to learn is, no matter how strong the motivation is, the ability to learn is small. But you have those stressors and that ability has to be balanced for good learning to occur.

Aynsley also gave an example of enhancing a feature in the therapist program from her course work experience. Aynsley recounted how she was influenced to recommend changes in her program that better reflected the learning of adults. Recommending moving away from a behaviorist approach to a more adult learner approach, Aynsley wanted her program to reduce punitively long observation hours and replace some observation hours with a written reflection of those observation experiences.

Not just a recounting, well, we did this and this. But I want reflection on their thoughts and their feelings, and how that would impact their future career. And that has now been included into our admission criteria. What else have we done? I've done a couple other things. I am really, again like I said before, I am very much more of a humanist in my feelings of teaching. So I still apologize to my students for the behaviorist penalty type things we have to do sometimes that I don't like.

Aynsley spoke about influences her program had on her teaching practices. She mentioned that even while she was in class, influences of the program were directly associated to her as a teacher. Aynsley also stated all influences are not necessarily tangible; some may reinforce existing beliefs:

... there are some of the instructors that I found in the program who are so good at instructing, that sometimes their goodness at instructing almost distracts from their content. Because I get so caught up in watching their technique on how they teach, and wanting to emulate that, that I have to force, kind of focus back on

their content. But that's just because I'm maybe a geek. But I think that I've transferred a lot of it. I've transferred a lot of the understanding I had, but a lot of the information was more reinforcing to something that was already deep inside me that didn't have a name or didn't have acknowledgement. It kind of was like, yeah, you're on the right track. I felt that. I don't know the word I'm looking for, but...

Other Themes

Reflection

An emerging theme for Aynsley was reflection. Individual reflection is hard for some people; it tends to highlight aspects of their day or professional selves that are not as refined as they hoped. As an instructor, she finds the start of her class, the “life stuff” as a reflective part of her class. *“I do think that that little, kind of our little routine in the morning, most mornings of chatting, is a bit reflective.”* As an individual, she finds reflection difficult and shared her thoughts on the importance of reflection from the instructor and student perspective.

I found the reflection was very useful... it surprised me. I've always been extremely resistant to journaling. I never really felt that I would get the need. I always felt like I was going to be pretending to write what I thought somebody else would want to read, instead of what I believed. So, I was resistant to journaling. However, as I was journaling, I found that, happily found, it made me much more mindful of what I was doing in my class... I've started having, reflecting on how the class went, and was able to take that time during the journaling and shortly thereafter, I could see, it helped me formulate a plan for the next class to maybe recreate what was going good, see areas that weren't, my students weren't responding to. I could write down some concerns I had about student performance, or my performance, or, and

understand that, it also made me very mindful of the stresses my students were going to be under. So I found it important. And I could see how some of the ideas I learned, like formative assessments, and make an impact. Kind of check [on learning] to see where my students were. Kind of checked me on how I thought I could help my students learn. And so, that was very important, which was stuff that we'd always learned. And it has probably, the reflective piece more than anything, and I see it starting into this semester.

Resource for Teachers

In the community college setting where Aynsley teaches, she did not feel she was hired because she was a teacher. “...*in the community college setting, we are hired because we are content experts. We're not hired because we're teachers.*” Additionally, after completing her masters degree program Aynsley was not prepared to teach adults. The Wellness Education program provided the tools necessary for the therapist assistance program, but not to teach. In completing the core courses for the Adult and Continuing Education, she found she became a resource for teaching adult learners and the go-to person in her department for questions.

... especially in my department it has on some ideas on how to, not so much teach or help our students learn the content... they [colleagues] really kind of have asked me for some more information or some more ideas. When it comes to helping our students learn some of the soft skills, the ones that you can't really put a quantitative stamp on, and how do we get those points across.

Summary

The data collected for Aynsley from the four sources were collected over four months. Over the course of this time, Aynsley demonstrated an assimilation of program materials in her

classroom. She modeled adult-focused teaching practices of her Adult and Continuing Education degree program professors, as well connecting with many experiences from multiple professors and courses in the program. Aynsley incorporated some of the methods used in adult education such as the critical incident questionnaire and tools to measure student motivation. Aynsley further took on the role as the adult learner expert in her program and served as a source for her colleagues on how to teach. There was reasonable evidence from the interviews, observations, and reflective journal that Aynsley demonstrated transfer of learning in the context of PFL.

Cross-Case Analysis

The purpose of this research was to identify the existence of transfer of learning in graduates who had entered the education workforce. The study looked at transfer of learning from the perspective of the graduate student and how he/she articulate the influence of their Adult and Continuing Education curriculum. Using Bransford and Schwartz's (1999) PFL, the researcher investigated how graduates' past coursework learning experiences were activated in an educational workplace environment. The cross-case analysis revealed some similarities:

1. All participants used techniques modeled by professors in the program.
2. All participants used techniques discussed in various textbooks from courses in the program.
3. All participates used the textbooks as reference material for methods, techniques, and activities.
4. All expressed influences from the program or professors in the program.

Educational Workforce Practices

Over the course of the research study, all four individuals used a variety of instructional practices modeled or discussed during the Adult and Continuing Education courses. The

methodology used in this research provided numerous opportunities for the researcher to observe the instructional practices used by the participants. During interviews after observations, all four individuals could recount the professor or course in which the instructional practice was modeled.

All four individuals engaged their students in active learning. Each discussed in some detail how he/she provided an experiential, mindful, and engaging learning environment for their students. The participants also described how they actively employed a student-centric approach in their classrooms, which is a foundational approach in adult education, discussed throughout the courses, and modeled in nearly every course of the Adult and Continuing Education program.

Nearly all the individuals described or mentioned the use of constructivism theory. One case directly stated “*I provide them knowledge they can use tomorrow.*” While constructivism is not the only theory discussed during core courses, students who take the core courses take Zinn’s (1990) philosophical orientation inventory and learn their own philosophical propensity. In fact, three of four individuals directly referenced Zinn’s inventory.

Additionally, all four individuals used a wide range of teaching techniques. They discussed using or referring to *Collaborative Learning Techniques* by Barkley, Cross, and Major (2005), a textbook used in the Principles of Teaching Adults (formerly Advanced Teaching Methods for Adults) course. Some of the specific teaching techniques used by each of the individuals were white-board exercises, think-pair-share, small groups, questioning, interactive note taking, reflective journaling, and jigsaw. Every technique used by the participants was modeled during the core courses of the Adult and Continuing Education program.

The last instructional practice demonstrated or discussed by the four individuals is the assumption of andragogy. One of the courses a student in the Adult and Continuing Education

degree program must complete is called Introduction to Adult Education. During this course, students are introduced to the theory of andragogy. Knowles' (1975) theory outlines the characteristics of adult learners: self-concept, adult learner, readiness to learn, and applicability of learning. All four assumptions of andragogy were discussed and demonstrated during the case study observations and interviews. It was clear during this research study that all four individuals use an andragogical approach to learning.

Program Influences

All four cases cited or demonstrated a variety of information learned during the Adult and Continuing Education core courses. While often during the interviews or observations they were unable to recall the exact title of books or exact class names, all participants knew where they obtained the knowledge and how to use it. Two of the participants had earned master's degrees in their respective fields of study. In both cases, each noted the courses in their field of study prepared them to present the content but did little to prepare them for teaching adults. Both acknowledged the self-efficacy of teaching adults came from the Adult and Continuing Education courses.

There were several specific ideas that all the participants mentioned. All remembered and applied thoughts about learning styles, teaching styles, and philosophy. All were very cognizant of the fact that adults have busy lives and there are barriers to their education journey. They all exhibited empathy toward their learners. For those who read Brookfield's (2006) book, *The Skillful Teacher*, the concepts of authenticity and credibility stayed with them and influenced their practice. Others remembered and used specific classroom assessment techniques they were exposed to by various professors including (a) one-minute paper, (b) muddiest point, and (c) critical incident questionnaires. All participants mentioned the books in the program and had

specific ones readily available to them. In addition, several mentioned that they had become a resource for how to teach adults. A few participants became resources for their peers on how to teach adults at their respective institutions. In community college, where instructors are hired more for their subject expertise, the participants noted a high reliance on their knowledge of teaching adults.

Different participants mentioned some specific theories. Topics included Knowles' (1975) andragogy, Brookfield's (2006) authenticity and credibility, and his critical incident questionnaire, Grow's (1991) staged self-directed learning model, McClusky's (1963) theory of margin, Pratt's (1998) five perspectives on teaching, and Zinn's (1990) philosophy of adult education. These theories were discussed in different courses throughout the program and different inventories taken by students to develop individual understanding.

Preparation for Future Learning

Throughout the data collection phase of this study the researcher noted numerous times when the participants reflected on how the core courses prepared or improved their ability to instruct adult learners. At least two of the individuals mentioned that the core courses "*gave them permission to teach and not just provide information*" or another individual mentioned the hardest part of teaching is educators rarely see their finished masterpiece.

This multi-case study looked at transfer of learning through the lens of PFL, guided by a learner-centric definition that transfer is the complex-dynamic individual activation of previous learning experiences. The findings in this study suggest that each of these individuals transferred experiences specific to each and knowledge as each individual teaching experience required an activation of those previous experiences. There is reasonable evidence in this cross-case analysis

that each of the cases activated aspects of their individual, complex, and dynamic previous experiences to demonstrate transfer of learning in the context of PFL.

Chapter 5 - Summary and Discussion

Introduction

The previous chapter provided an analysis of the qualitative data collected for this study. This chapter consists of a summary of the study, an analysis, interpretation, and synthesis of the findings, the implications for the practice, recommendations for further research, and conclusion. This study evaluated the transfer of learning from the perspective of the individual learners' ability to activate previous learning/knowledge in the educational workforce.

Summary of the Study

Transfer of learning has occupied the interest of education and educational psychologist since Thorndike and Woodworth (1901) first assessed transfer of learning. Although numerous quantitative studies describe a failure to transfer, findings are inadequate to understand learner activated transfer of learning (Detterman & Sternberg, 1993). Transfer of learning continues to be at the center of conversations regarding the effectiveness of education. This research addressed the gap between the quantitative transfer of learning research and the individual learner's activation of previous learning.

The purpose of this study was to investigate how graduate students transfer learning of the 18 credit hours of core curriculum in this Adult and Continuing Education degree program and the extent to which it created new meaning and influenced current practices in the educational workforce. The study's conceptual framework drew on Bransford and Schwarz's (1999) preparation for future learning paired with Dufrense's (2005) definition of transfer as: "the complex, dynamic process leading to the highly selective activation and application of knowledge in response to context" (p. 158). A qualitative bounded multi-case research design was used to capture the experiences, practices, and perceptions of the participants connecting the

existing phenomenon to real-life context (Yin, 2013). The selected design provided a venue to explore individual activation of previous learning by the participants within the prescribed conceptual framework.

The multi-case research took place in four different locations; each site represented the employment location of a case. Four participants who completed the 18 credit hours of core courses of the Adult and Continuing Education degree program were recruited from a midwest metropolitan city. Data were collected from the participant background information forms, interviews, observations, participant reflective journal, and researcher field notes. The first part of this research included an initial meeting to discuss participant commitment. At the time the participants reviewed and signed the informed consent form and completed the participant background information form (see Appendix B). The researcher scheduled and conducted three semi-structured interviews (see Appendix C) and two classroom observations (see Appendix D) of each participant. During the interview each participant responded to oral questions, with responses recorded in both written and audio form.

The participant background information form provided basic demographic information, courses instructed, teaching styles, learning styles, and graduate course information about each participant. The purpose of the information form and the initial information discussion was to provide initial data about the participant to help inform the first interview and provide comparative data when conducting the observations. The semi-structured interviews, one of the three primary data sources, were conducted at a location convenient and comfortable for the participant. Interviews tended to last 45 to 60 minutes, and explored the participants teaching methods, techniques and perceptions of the Adult and Continuing Education degree program. All interviews were audio recorded, transcribed by a third party, and reviewed by the researcher.

The observations of class sessions, second of three primary data sources, were selected based on convenience of both the researcher and participant. Observations typically lasted the entire class period and included different types of courses if the participant taught more than one group of students. The only recordings of observations were the researcher field notes; no audio or video devices were used during observation sessions.

The participants' reflective journals were the third primary data source. At the introductory interview, each participant was provided a journal in which to record his or her reflections. At each interview, a copy of the journals was provided to the researcher. The journals provided information of unobservable or often unspoken facets of transfer of learning and the activation of past experiences of each case. The journals offered additional data of with which to compare of interview transcripts and classroom observation.

A comparison and analysis of all data sources were used to identify themes and code the findings within the conceptual framework. The findings were integrated into case narratives as each case was analyzed in terms of the research questions. Once each case narrative was established, a cross-case analysis comparison was conducted to discover common themes and responses consistent across all four cases. A variety of strategies and techniques helped to ensure the quality of the study's outcomes: peer checking, member checking, and triangulation.

The guiding Primary Research Question was: What are graduates' perceptions of their ability to transfer their learning to a teaching environment with adult learners after completing 18 credit hours of core curriculum in this Adult and Continuing Education degree program at a midwest university?

Along with the primary research question were two secondary questions:

1. What are graduates' current educational workforce practices?

2. What did graduates report having learned from their program that influenced their instructional practices?

Discussion of Findings

The goal of education and learning has always been transfer of learning. Because of the low occurrence of the presence of transfer from traditional research methodologies, it has been suggested that transfer of learning is not the outcome of education. However, transfer research conducted by Laboto (1996), and Rebello et al. (2007) employed a mixed methods approach to transfer research and found that transfer was present when analyzing qualitative data. Both studies uncovered the presence of transfer during interview sessions. The research method for this study was qualitative with multiple data collection methods and numerous touch points during the study of each case. The findings in this study provide indications that far transfer of learning is present when viewing transfer using a student-centric qualitative approach.

It was stated earlier in Chapter 2 that in nearly all transfer of learning, definitions have two elements: learner past learning and application for future learning in similar situations. The issue with this definitional method is learning in nature is not as clean or direct. To test for transfer, it is imperative that the researcher's methods, as closely as possible, mirror learning in nature. Bransford and Schwartz (1999) called traditional transfer the direct application of a sequestered problem-solving task. Lobato (1999) mentioned that the traditional approach of studying transfer as the connection of event A to event B is similar to the Thorndike and Woodworth (1901) study over a century ago. Rebello (2007) stated that there are no sudden insights between the initial learning events and a transfer task. A common thread among contemporary transfer researchers is the implication that transfer is present if looking through the proper lens-learner activated transfer.

Educational Workforce Practices

What are graduates' current educational workforce practices? The findings revealed that all four participants' professional practices based on principles of andragogy. Adult learning theory-andragogy includes five assumptions of adult learners:

1. Learners are self-directed. Meaning a learner is intrinsically motivated to seek knowledge and pursues what he/she wants to learn.
2. Adult learners have experience. Each adult learner enters a learning experience with past experiences, which form and shape how he/she learns.
3. Adult learners are ready to learn. As an adult determines an intrinsic or extrinsic motivation to learn, the motivation enhances his/her desire to learn.
4. Application of knowledge. An adult learner sees the value in what he/she is learning and how it impacts his/her immediate life/application of learning.
5. Motivated learners. As a person matures the motivation to learn changes and is driven by their desires to grow and broaden themselves (Knowles, 1975).

Andragogy is a foundational building block in Adult and Continuing Education; all other principles and practices build on the principles of andragogy. The instructional practices discussed and observed center on a belief that students are the focus and the participants are taught using the assumptions of andragogy.

The specific techniques used based on these principles small group discussions, think-pair-share, jigsaw, and muddiest point- are effective application of the principles of andragogy. One of the participants stated, "*I expect my students to participate in their learning.*" Another commented, "*I'm not the sage on the stage, I'm the facilitator of learning.*" These comments

indicated that the participants practice a student centered, adult learning model in their classrooms daily.

As the Adult and Continuing Education degree program is a graduate level program, it is understood that each student entered the program with past experiences that influenced his/her. Two of the participants had completed graduate education prior to enrolling in the Adult and Continuing Education degree program. All acknowledged that their previous learning in their degree programs prepared in terms of content, but provided little to no preparation for teaching. All could relate the impact of the Adult and Continuing Education degree program as influencing their teaching practices. Most importantly, the impact came in the form of validating how they taught and improving it.

In many ways, the Adult and Continuing Education degree program impacted their educational workforce practices. Teaching is personal; authenticity and credibility are important facets of student trust and motivation to learn (Brookfield, 2006). All the participants reflected on how the program assisted in helping them realize their authenticity in the classroom. Kenny's teaching philosophy is E4AC, which encompasses energy, effort, enthusiasm, empathy, authenticity, and credibility; the authenticity and credibility were added after completing the Characteristics of Adult Education course. Prior to the degree program, his philosophy contained only the four Es. When he took Characteristics of Adult Education, one of the textbooks used was *A Skillful Teacher* by Brookfield (2006). Two points Brookfield asserted were that to be a skillful teacher a person must be authentic and credible. It was at this point that Kenny began to include authenticity and credibility as part of his teaching philosophy. Joanne recalled the impact was more profound in how she sees herself and her instructional practices. Joanne reflected back and noted her evolution as a teacher, "... *how did I evolve ...Oh, completely.*" She followed that

commenting that her authenticity and credibility in class was validated by the program, *“I always knew how to teach, it [Adult and Continuing Education degree program] confirmed by beliefs were right.”*

Know yourself first is the first key to understanding your learning style (Gregorc, 1982). Ava learned her teaching/learning style was abstract-random when she was enrolled in an Introduction to Adult Education. Knowing and understanding her teaching style allowed her to integrate Merriam and Brockett’s (2007) idea that a teacher may have to “operate from an eclectic position” (p. 273). It also enabled her to recognize why that eclectic position was important to her *“... because my views are not static.”* Ava’s reflections of herself provide insight into the why she does what she does in class. She commented the style indicator, yet she knows *“why I was interrupting myself during class.”* Ava’s most poignant point regarding instructional practices is her recognizing that students do not stop learning at the end of an hour, or session, or course...they stop when each student has achieved learning. She says it best on her webpage, *“teaching is a process of change that is never fully completed by the teacher and learner in the classroom. This is the hardest part of teaching, as we as educators rarely see our finished masterpiece.”*

The first thing you see when you walk into Aynsley’s classroom are these words written on a board in the front of the classroom, *“Don’t tell me what I know, tell me what you know.”* These few words are the embodiment of her instructional practices. Everything she does, she does for student learning, and as she says, *“don’t learn it for the test, learn it for life.”* which places the responsibility for learning on her students without setting them adrift. Her instructional practices, techniques, and methods are informed by her blended apprenticeship and

developmental teaching style, which permits her to place emphasis on learning and not on teaching (Pratt, 1998). These ideas were learned in the Adult Learning and Motivation course.

The findings also revealed other areas where transfer of learning was present beyond instructional practices. All the participants' responses and observations pointed to his or her educational theory being constructivist, which suggests that students learn by seeing, doing, and discovering. The instructor's role in a constructivist classroom is to provide the learners the opportunity to learn in real situations. Kenny commented, *"I not only teach them for class, I provide them something they can use tomorrow."* As all the participants were volunteers to the study, one can only surmise their individual desire to learn and create understanding led them to participate in this research study.

Another theme the study revealed was that the participants are lifelong learners. Lifelong learners actively seek to learn and are self-motivated. Regarding being a lifelong learner, Joanne stated, *"My supervisor and I laughed about it [participating in this research] because we're like, you know you're a lifelong learner when you're excited by a research study."*

Not only were the participants lifelong learners, in their own right, each taught to create lifelong learners of their respective students. A former student in Kenny's class sent him an email telling him how she now has a subscription to the *Wall Street Journal*, *"reading the Wall Street Journal was something I would never have been before your class."* Joanne completed the same program in which she now teaches. When she completed the program clinicals and classroom phases were separated by semesters. She wanted to connect learning and develop students into lifelong learners, so the clinicals and classroom time are now laced together. *"... it was years later when I was making those bridging connections. My goal is to help them construct the understanding as we are going through it. And sometimes, it's going to be*

uncomfortable.” Ava had a former student visit class, during a commercial bathroom discussion. The student mentioned the importance of the block, “... *oh my gosh, I’m working on those right now, and thank you for teaching them this... So, you know, you don’t always get to see how they’re applying their new knowledge.*”

Program Influences

What did graduates report having learned from their program that influenced their instructional practices? Characteristics of an adult learner, motivations, teaching techniques, methods of instruction, and how to encourage deep learning are some of the items mentioned by the participants. They discussed the influences the courses and instructors had on their instructional practices. The portion of the Adult and Continuing Education program that seemed to have the most influence on the instructional practices of the graduates were the Gregorc (1982) style inventory, Zinn’s (1990) philosophy of adult education inventory, McClusky’s theory of margin, Brookfield’s (2006) *A Skillful Teacher*, and Wlodkowski’s (2008) *Enhancing Adult Motivation to Learn*. The inventories had an impact on all the participants, each described their own teaching style or learning style. “*I’m a random-abstract, but concrete-sequential came a close second,*” one of the participants stated during interview one. She went on to describe why random-abstract was her ‘go to’ style but how certain teaching or employment environments drove her to a more concrete-sequential style. Another stated, “...*think it’s about humanism. But I’ve got to establish some liberal arts credibility.*” He recognized that his ‘go to’ was not a humanist approach but for him to be an effective teacher he needed some ‘*liberal arts credibility,*’ credibility that only came from him learning how his style was different than those of the students in his class. From a preparation for future learning perspective, the inventories planted the seeds of learning/teaching style differences that were activated in the classroom when

the participants were confronted with students who viewed learning differently. Joanne commented she was not a linear thinker; one of the first things she learned was her circular thinking was a style, but there are others; *“I learned in school [Adult and Continuing Education degree program], how to take my circles and makes lines... students need to see lines.”*

Detterman and Sternberg (1993) estimated that only about 10% of material learned in a classroom effectively transfer to the workplace. This research, a student-focused study, suggests that far more transfers into a workplace similar to that in which the learning occurred. All participants detailed how material, techniques, and methods discussed and learned in the Adult and Continuing Education classroom transferred into each classroom. Some material was learned as far back as five or more years. Aynsley made the following comment in her reflective journal, *“Today I provided the students with a 3-2-1 sheet. 3 concepts they know from class, 2 questions about the class, and one application of information. This is similar to a CIQ.”* She learned about 3-2-1 sheets and CIQ in Introduction to Adult Education. The two techniques were modeled by professors in the program, and are in Brookfield’s (2006) *A Skillful Teacher*. All the participants at one point or another during the study talked about different techniques, books, and notable authors in adult education or how they used techniques to assist students in learning a concept. This study demonstrated that the participants perceived that they positively transferred learning into a teaching environment from the Adult and Continuing Education degree program.

Implications for Practice

This research has implications for how far transfer of learning is studied in the future as well the preparation of learners for future learning. While previous research has documented a failure to transfer, perhaps, the failure is in the expectation of immediate application. This could involve a modification of teaching techniques or philosophical approaches. Perhaps, teaching

with the mindset that learning will need to be activated in the future and preparation for being a lifelong learner should be foremost in all curricula.

Higher education instructors need to prepare learners for future activation of their learning and application. The teaching philosophy in the Adult and Continuing Education was theory and application. The learners practiced how to apply their new learning. This perhaps prepared them for future transfer of learning.

Skills practiced by these participants while in the Adult and Continuing Education program included the use of reflection journals, classroom assessment techniques, and a constructivist approach to knowledge creation. Because they saw the instructors model these techniques and philosophical approach to the classroom, they could learn how to use them in their own classrooms—another technique to prepare learners for future activation of learning.

There is research on transfer of learning that demonstrated a failure to transfer (Detterman & Sternberg, 1993; Haskell, 2001; Newman, 2010). Employers lament that colleges and universities have failed to prepare students for the workforce. If a student is completing college, submitting resumes, or securing employment, then a connection can be made that those new employees have successfully navigated the path to graduation. Nevertheless, if the employers hire ill-prepared students a further connection could be investigated whether current use of tests, quizzes and mechanical repetition produces transfers of learning. However, perhaps, employers and university assessments are not giving the time needed to apply knowledge and activate previous knowledge for future learning.

Much of the previous research on transfer of learning is conducted at the secondary school level and frequently failure to transfer is the studies outcome (Haskell, 2001; Lobato et al., 2012; Newman, 2010; Rebello et al., 2007). Curriculum designed to test recall may

contribute to the low retention rates of undergraduate schools. Adult learning techniques that appear to enhance transfer of learning in a graduate degree program could be used in secondary school settings as well. The development of curriculum that integrates methods and techniques of adult learning could be explored to improve college retention.

This research study provides support for transfer of learning to be studied as preparation for future learning. It also demonstrates the possibility that previous researchers have been trying to look at rote skill or memory tactics rather than allowing learners to make their own meaning and develop the skills to be a lifelong learner.

Recommendations for Practice

This multi-case study used four self-selected participants and represent a highly functional group of instructors. This study used a small sample and cannot be generalized. The findings from the study support the occurrence of transfer of learning from the perspective of these learners. As such, the researcher makes the following recommendations for practice.

Schön (1987) distinguished reflection as reflection-in-action and reflection-on-action. One of the outcomes from this study was the use of reflection by all participants. All used reflection-on-action, the practice of thinking about actions after taken place, as a means of increasing the learning of students by next session. Some techniques such as 3-2-1, or muddiest point feed the reflective process of the participants. Effective teaching is about how we increase the meaning making of the students, not the grade. As was stated earlier, there is no corresponding relationship between a single assessment and learning. However, we can add to the volume of learning and teaching by developing teaching practices that encourage learning by the instructor's reflection-on-action.

The other type of reflection is reflection-in-action. Reflection-in-action is the practice of critically judging the success of an exercise while the exercise is being conducted (Argyris & Schon, 1974). Aynsley demonstrated reflection-in-action during the second observation when her students appeared to not understand the lecture/activity. On the fly, her reflection-in-action informed her the students were not getting the concept, so she put them in groups to physically perform electro-stimulation. Her knowledge of reflection-in-action created a learning environment that linked her Pratt's (1998) apprenticeship and developer teaching style. Reflection-in-action and reflection-on-action are methods to development teaching skills that connect with student learning and provides the teacher a means of assessing learning beyond formal assessments.

Reflection by students in the form of student portfolios, reflective papers, and their inclusion in learning are simple methods to encourage deep learning. This type of learning allows graduates to be able to access it later and apply to new situations in the workforce. Learning is individual and undetectable on a universal assessment. The development of students' reflective learning skills could produce a more prepared graduate.

Some of the most effective assessments challenge a student's paradigm or requires him or her to apply previous learning in solving a real-life problem. Examples of these types of assessments are reflective papers, book reviews, small group projects outside of students' comfort zones of learning, and reflective papers pulling together the readings and classroom discussion.

A degree in any given discipline does not equal a good educator. Of the four individuals in this study only one institution had a formalized faculty development program. The institution that has the faculty development program did not seem to spend much of the development time

on subject matter expertise. Rather the time was spent on increasing the knowledge base of the faculty around instructing adults. Formalizing an adult learning faculty development program that focuses on educating teachers to teach adults, may lead to a greater preparedness of graduates across all disciplines.

In general, the findings from this study acknowledge learning is individual and at the activation of those experiences are at the pace or need of the learner. Learners will demonstrate learning as the previous experience is needed in the current situation of the learners choosing, not as a test of recall. Educators armed with the knowledge that learning is individualized, the masterpiece you seek is not complete and will continue to grow and progress.

Recommendations for Further Study

This limited study explored the individual activation of previous learning in the context of transfer of learning from graduate level education to the education workforce. The study was limited to four volunteers who had in common the completion the 18 credit hours of core courses in the Adult and Continuing Education degree program. The researcher recommends the following topics for further study.

1. Duplication of this study among different graduate level degree programs would provide insight to commonalities or differences among other degree populations.
2. This study was limited to a non-traditional population of graduate students. A similar study conducted with traditional graduate students would be useful to determine if similar or different results occur with that population.
3. Duplication of this study among undergraduate level degree programs would provide insights to the transfer of learning at another critical level of the college graduate workforce.

4. Expanding the study to include qualitative and quantitative research results would be useful in widening the research results of individual application of learning.
5. A study that examines the learners who are products of a faculty who participate in a faculty development program that prepares educators to instruct adults or use adult learner methods to increase graduate preparedness.
6. A similar study to assess the transfer of learning of graduates from the Adult and Continuing Education degree program who did not go into the educational workforce as an instructor but in other fields of education.
7. A similar study to compare this study's results to other Adult and Continuing Education degree programs for another school.
8. A qualitative study that investigates transfer of learning as an outcome of graduate level curriculum.
9. A study that compares transfer of learning between students with or pursuing a master's degree, to those with or pursuing a bachelor's degree.

Concluding Remarks

This study attempted to address the gap between traditional transfer of learning and the alternative method of preparation of future learning and determining far transfer of learning in a graduate student sample population. Traditional transfer of learning research, which uses a researcher, specified single event assessment, and often falls short of determining transfer of learning misrepresents the existence of transfer. This study's findings support Bransford and Schwartz's (1999) belief that to examine the existence of transfer, a student-focused individualized approach provides a more natural view of transfer of learning. The findings revealed that learning is a reflective process of associating previous experiences and acquired

knowledge to unique situations only the learner can identify. The study of transfer of learning requires the researcher examines transfer in a natural environment, not in a laboratory-class setting determined by the researcher.

The implications are that the value of learning is not in a grade or assessment that tests a learner's recall. Learning is specific to each learner and what is assessed in the course may not indicate success or application of learning in a future context. Transfer of learning is likened to a planting metaphor. A farmer first prepares the field for planting, and in doing so must understand the context of the environment, the soils preparedness for the seed, the condition/age of the seed and it must be planted. The field must next be tilled, turned, fertilized, and weeded. Following the preparation of the field, the farmer can now plant the seed. Harvest is not immediate, but rather requires the germination of the seed into a plant and later into a crop. It is then that the farmer harvests a crop and sees the benefit of the journey. If the farmer were to evaluate his harvest days after planting, the findings would show a poor yield. Assessing transfer of learning requires that students internalize learning and utilize the experience at a time and place of their own choosing. The participant in this multi-case study indicated while they may not always remember the specific name or title of a book, each was able to draw on the moment, class, classmates, and circumstances that leant to the meaning-making and how they connected/used it in a present-day situation. Transfer of learning remains at the center of learning, and will for the foreseeable future in education. This exploratory study adds to the research on transfer of learning, particularly alternative approaches to transfer. The study also stresses that at a minimum future transfer of learning research should include a qualitative facet in the research design.

References

- Argyris, C., & Schon, D. A. (1974). *Theory in practice: Increasing professional effectiveness*. Jossey-Bass.
- Baldwin, T. T., & Ford, J. K. (1988). Transfer of training: A review and directions for future research. *Personnel Psychology*, 41(1), 63-105. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=6264638&site=ehost-live>
- Barkley, E. F., Cross, K. P., & Major, C. H. (2005). *Collaborative learning techniques: A handbook for college faculty*. San Francis, CA: Jossey-Bass.
- Barnett, S. M., & Ceci, S. J. (2002). When and where do we apply what we learn?: A taxonomy for far transfer. *Psychological Bulletin*, 128(4), 612-637. doi:<http://dx.doi.org.er.lib.k-state.edu/10.1037/0033-2909.128.4.612>
- Barr, R., & Tagg, J. (1995). From teaching to learning--a new paradigm for undergraduate education. *Change*, 27(6), 12. doi:10.1080/00091383.1995.10544672
- Beach, K. (1999). Consequential transitions: A sociocultural expedition beyond transfer in education. *Review of Research in Education*, 24, 101-139. Retrieved from <http://www.jstor.org/stable/1167268>
- Bloomberg, L. D., & Volpe, M. (2012). *Completing your qualitative dissertation: A road map from beginning to end*. Thousand Oaks, CA: Sage Publications.
- Bossard, C., Kermarrec, G., Buche, C., & Tisseau, J. (2008). Transfer of learning in virtual environments: A new challenge? *Virtual Reality*, 12(3), 151-161. doi:<http://dx.doi.org.er.lib.k-state.edu/10.1007/s10055-008-0093-y>
- Bransford, J., & Schwartz, D. L. (Eds.). (1999). *Rethinking transfer: A simple proposal with multiple implications*. Thousand Oaks, CA: Sage Publications.
- Bransford, J., Vye, N., Stevens, R., Kuhl, P., Schwartz, D., Bell, P., . . . Reeves, B. (2005). Learning theories and education: Toward a decade of synergy. *Handbook of Educational Psychology* (2nd Edition), , 209-304.
- Bransford, J., Brown, A. L., & Cocking, R. R. (1999). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.
- Bransford, J., Stevens, R., Schwartz, D., Meltzoff, A., Pea, R., Roschelle, J., . . . Sabelli, N. (2006). *Learning theories and education: Toward a decade of synergy*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers. Retrieved from <http://search.proquest.com.er.lib.k-state.edu/docview/621332647?accountid=11789>

- Brookfield, S. D. (2006). *The skillful teacher: On technique, trust, and responsiveness in the classroom* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Broudy, H. S. (1977). Types of knowledge and the purpose of education. In C. Anderson, R. Spiro & W. Mantague (Eds.), *Schooling and the acquisition of knowledge* (pp. 1-17). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Caffarella, R. S. (2002). *Planning programs for adult learners: A practical guide for educators, trainers, and staff developers*. (2nd ed.). San Francisco, CA: Jossey-Bass.
- Calais, G. J. (2006). Haskell's taxonomies of transfer of learning: Implications for classroom instruction. *National Forum of Applied Educational Research Journal*, 20(3), 1-8.
- Campione, J. C., Shapiro, A. M., & Brown, A. L. (1995). Forms of transfer in a community of learners: Flexible learning and understanding. In A. McKeough, J. Lupart & A. Marini (Eds.), *Teaching for transfer; fostering generalization in learning* (pp. 35-68). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Cleveland, H. (1980). Forward to basics: Education as wide as the world. *Change*, 12(4), 18-22. Retrieved from <http://www.jstor.org.er.lib.k-state.edu/stable/40109296>
- Cornford, I. R. (2002). Two models for promoting transfer: A comparison and critical analysis. *Journal of Vocational Education & Training*, 54(1), 85-102. Retrieved from <http://search.proquest.com.er.lib.k-state.edu/docview/62203749?accountid=11789>
- Council of Graduate Schools. (2011). *Finding from 2011 CGS international*. (No. 44, 2). Washington, DC:
- Cox, B. D. (1997). The rediscovery of the active learner in adaptive contexts: A developmental-historical analysis.. *Educational Psychologist*, 32(1), 41. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9712042182&site=ehost-live>
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.
- Cromier, Stephen M.& Hagman, Joseph D. (Ed.). (1987). *Transfer of learning: Contemporary research and applications*. San Diego; CA: Academic Press,.
- De Corte, E. (2007). Learning from instruction: The case of mathematics. *Learning Inquiry*, 1(1), 19-30. doi:10.1007/s11519-007-0002-4
- De Corte, E. (2003). Transfer as the productive use of acquired knowledge, skills, and motivations. *Current Directions in Psychological Science*, 12(4), 142. doi:10.1111/1467-8721.01250
- Detterman, D., & Sternberg, R. (Eds.). (1993). *Transfer on trial: Intelligence, cognition and instruction*. Norwood, NJ: Ablex Publishing.

- Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. NY: The Macmillan Company. Retrieved from <https://catalog.lib.ksu.edu/vwebv/holdingsInfo?bibId=137614>
- Driscoll, M. P. (2002). *How people learn: And what technology might have to do with it*. Syracuse, NY: ERIC Clearinghouse on Information and Technology.
- Dufresne, Mestre, J., Thaden-Koch, T., Gerace, W., & Leonard, W. (Eds.). (2005). *Knowledge representation and coordination in the transfer process*. Greenwich, CT: Information Age Publishing.
- Duncker, K. (1945). The structure and dynamics of problem-solving processes. *Psychological Monographs*, 58(5), 1-112.
- Ellis, H. (1965). *Transfer of learning*. New York, NY: The Macmillan Company.
- Fortino, A. (2012). *The evollution: Illuminating the life long learning movement*. Retrieved from <http://www.evollution.com/opinions/the-purpose-of-higher-education-to-create-prepared-minds/>
- Galbraith, M. W. (Ed.). (2004). *Adult learning methods: A guide for effective instruction* (3rd ed.). Malabar, FL: Krieger Publishing.
- Gick, M., & Holyoak, K. (1980). Analogical problem solving. *Cognitive Psychology*, 12(3), 306. doi:10.1016/0010-0285(80)90013-4
- Gick, M., & Holyoak, K. (1983). Schema induction and analogical transfer. *Cognitive Psychology*, 15(1), 1-38.
- Gick, M., & Holyoak, K. J. (1987). The cognitive basis of knowledge transfer. In S. Cormier, & J. Hagman (Eds.), *Transfer of learning: Contemporary research and applications* (pp. 9-46) Academic Press.
- Greeno, J. G., Moore, J. L., & Smith, D. R. (Eds.). (1993). *Transfer of situated learning*. Norwood, NJ: Ablex Publishing.
- Gregorc, A. F. (1982). *Gregorc on style* Gabriel Systems, Incorporated.
- Grow, G. O. (1991). Teaching learners to be self-directed. *Adult Education Quarterly*, 41(3), 125-149.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of Qualitative Research*, 2(163-194)
- Hager, P., & Hodkinson, P. (2009). Moving beyond the metaphor of transfer of learning. *British Educational Research Journal*, 35(4), 619. doi:10.1080/01411920802642371

- Halpern, D. F. (1999). Teaching for critical thinking: Helping college students develop the skills and dispositions of a critical thinker. *New Directions for Teaching and Learning*, 80, 69-74.
- Haskell, R. E. (2001). *Transfer of learning; cognition, instruction, and reasoning*. San Diego, CA: Academic Press.
- Hlynka, D., & Joacobsen, M. (2010). What is educational technology anyway? *Canadian Journal of Learning and Technology*, 32(2), 1-5.
- Hodge, F. A. (1911). *John locke and formal discipline* (Doctoral Dissertation, University of Virginia).
- Houle, C. O. (1961). *The inquiring mind*. Madison, WI: University of Wisconsin Press Madison.
- Jeynes, W. (2007). *American educational history: School, society, and the common good*. Thousand Oaks, CA: SAGE Publications.
- Jonassen, D., & Land, S. (Eds.). (2012). *Theoretical foundations of learning environments* (2nd ed.). New York, NY: Routledge.
- Judd, C. H. (1908). The relation of special training to general intelligence. *Educational Review*, 36(28-42)
- Knowles, M. S. (1975). *Self-directed learning*. New York, NY: Association Press.
- Kolb, D. A. (1984). *Experiential learning : Experience as the source of learning and development* /. Englewood Cliffs, N.J.: Prentice-Hall. Retrieved from <https://catalog.lib.ksu.edu/vwebv/holdingsInfo?bibId=378850>
- Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Lobato, J. (1996). *Transfer reconceived: How "sameness" is produced in mathematical activity* (Doctoral Dissertation, University of California, Berkeley). Available from ProQuest Dissertations & Theses Full Text. (304244933). Retrieved from <http://search.proquest.com.er.lib.k-state.edu/docview/304244933?accountid=11789>
- Lobato, J. (2003). How design experiments can inform a rethinking of transfer and ViceVersa. *Educational Researcher*, 32(1), 17-20.
- Lobato, J., Rhodehamel, B., & Hohensee, C. (2012). "Noticing" as an alternative transfer of learning process. *The Journal of the Learning Sciences*, 21(3), 433. doi:10.1080/10508406.2012.682189
- Marton, F., & Pang, M. F. (2006). On some necessary conditions of learning. *The Journal of the Learning Sciences*, 15(2), 193-220.

- Mayer, R. E., & Greeno, J. G. (1972). Structural differences between outcomes produced by different instructional methods. *Journal of Educational Psychology*, 63(2), 165.
- McClusky, H. Y. (1963). The course of the adult life span. *Psychology of Adults*, , 10-20.
- McDonald, L. (2011). Transfer of training in teacher pd: A process-outcome orientation. *Procedia - Social and Behavioral Sciences*, 29(0), 1885-1894.
doi:<http://dx.doi.org/10.1016/j.sbspro.2011.11.438>
- McKeough, A., & Lupart, J. L. (1995). *Teaching for transfer: Fostering generalization in learning*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Menand, L. (2011). Live and learn. *New Yorker*, 87(16), 74-79. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=60972593&site=ehost-live>
- Merriam, S. B. (1998). *Qualitative research and case study applications in education. revised and expanded from case study research in education*. San Francisco, CA: Jossey-Bass.
- Merriam, S. B., & Brockett, R. (2007). *The profession and practice of adult education*. San Francisco, CA: Jossey-Bass.
- Merriam, S. B., & Brockett, R. G. (2011). *The profession and practice of adult education: An introduction*. San Francisco, CA: John Wiley & Sons.
- Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2012). *Learning in adulthood: A comprehensive guide (3rd ed.)*. San Francisco, CA: John Wiley & Sons.
- Mestre, J. P. (Ed.). (2005). *Transfer of learning from a modern multidisciplinary perspective*. Greenwich, CT: Information Age Publishing.
- Meyers, G. (2011). Phdadventure/ transfer of learning. Retrieved from <http://phdadventure.webs.com/transferoflearning.htm>
- Newman, F. (2010). *Transfer of learning from preparation program to practice: Toward a pedagogy of transfer (Doctoral Dissertation, Hofstra University)*. Available from ProQuest Dissertations & Theses Full Text. (860821768). Retrieved from <http://search.proquest.com.er.lib.k-state.edu/docview/860821768?accountid=11789>
- Nowacek, R. S. (2011). *Agents of integration: Understanding transfer as a rhetorical act*. Carbondale, IL: Southern Illinois University Press.
- Patton, M. (2002). *Qualitative research and evaluation methods (3rd ed.)*. Thousand Oaks, CA: Sage Publications.
- Perkins, D. N., & Salomon, G. (1989). Are cognitive skills context-bound? *Educational Researcher*, 18(1), 16-25.

- Perkins, D. N., & Salomon, G. (1992). Transfer of learning. *International encyclopedia of education* () Pergamon Press.
- Pratt, D. D. (1998). *Five perspectives on teaching in adult and higher education*. Malabar, FL: Krieger Publishing.
- Pratzner, F. C. (1978). *Occupational adaptability and transferable skills: Project final report*. information series no. 129. (No. 4). Washington, DC: National Institute of Education.
- Rebello, N. S., Cui, L., Bennett, A. G., Zollman, D. A., & Ozimek, D. J. (2007). Transfer of learning in problem solving in the context of mathematics and physics. In D. H. E. Jonassen (Ed.), *Learning to solve complex scientific problems* (pp. 1-36). Mahwah, NJ: Lawrence Erlbaum Associates.
- Reichardt, C. S., & Cook, T. D. (1979). Beyond qualitative versus quantitative methods. *Qualitative and Quantitative Methods in Evaluation Research*, 1, 7-32.
- Rippa, S. A. (1971). *Education in a free society: An american history*. White Plains, NY: David McKay Company.
- Royer, J., Mestre, J., & Dufresne, R. (Eds.). (2005). *Introduction: Framing the transfer problem*. Greenwich, CT: Information Age Publishing.
- Schön, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. San Francisco, CA: Jossey-Bass.
- Schwartz, D. L., Bransford, J. D., & Sears, D. (2005). Efficiency and innovation in transfer. In J. P. Mestre (Ed.), *Transfer of learning: From a modern multidisciplinary perspective* (pp. 1-51) Information Age Publishing.
- Schwartz, D. L., Chase, C. C., & Bransford, J. D. (2012). Resisting overzealous transfer: Coordinating previously successful routines with needs for new learning. *Educational Psychologist*, 47(3), 204-214.
- Scott, L. (2010). *A study on the relationship between ability, motivational, and work environmental influences and the degree of transfer of learning of new trainers* (Doctoral Dissertation, Capella University). Available from ProQuest Dissertations & Theses Full Text. (597930671). Retrieved from <http://search.proquest.com/docview/597930671?accountid=11789>
- Senge, P. M. (2006). *The fifth discipline: The art and practice of the learning organization*. New York, NY: Doubleday.
- Shuttleworth, M. (2009). Definition of reliability; hawthorne effect. Retrieved from <http://experiment-resources.com/definition-of-reliability.html>
- Simons, P. R. (1999). Transfer of learning: Paradoxes for learners. *International Journal of Educational Research*, 31(7), 577-589.

Singley, M. K., & Anderson, J. R. (1989). *Transfer of cognitive skill*. Cambridge, MA: Harvard University press. Retrieved from <https://catalog.lib.ksu.edu/vwebv/holdingsInfo?bibId=356467>

Thorndike, E. L., & Woodworth, R. S. (1901). The influence of improvement in one mental function upon the efficiency of other functions: III. functions involving attention, observation and discrimination. *Psychological Review*, 8(6), 553.

Wlodkowski, R. J. (2008). *Enhancing adult motivation to learn: A comprehensive guide for teaching all adults* (Revised ed.). San Francisco, CA: Jossey-Bass.

Yin, R. K. (2013). *Case study research: Design and methods* (5th ed.). Thousand Oaks, CA: Sage Publications.

Yvonna S. Lincoln, & Egon G. Guba. (1985). *Naturalistic inquiry* Sage.

Zinn, L. M. (1990). Identifying your philosophical orientation. In M. W. Galbraith (Ed.), *Adult learning methods: A guide for effective instruction* (pp. 39-77)

Appendix A - Informed Consent Form

Project title: Transfer of Learning: Exploratory Multi-Case Study Of Graduate Education
Transfer Of Learning

Principle Researcher: Dr. Royce Ann Collins

Co-Investigator: David Paul Gunn

You are asked to take part in a research project that examines your individualized meaning making and application of the Adult and Continuing Education graduate degree work in the workplace. It is the researcher's hope to expand the understanding of transfer of learning and how each individual uniquely connects past learning experiences to new situations. This research study involves completing a participant's information data sheet, iterative interviews (2-3), and two class observations.

If you choose to participate in this study, you will be asked to complete the participant background information sheet. It provides the researcher with information, specific to education and instruction. You also will be asked to participate in two to three iterative 60-minute interviews about your Adult and Continuing Education graduate degree program and your instructional methods. Additionally, you will be asked to allow the researcher to observe two of your class sessions. This is designed to complement your responses to interview questions and inform methods of instructing adult learners.

There are no hidden treatments and no expected discomforts or risks from this study. The interviews will be taped and transcribed your identifiable information will be protected in the following ways: No identifying information will appear on the transcripts of research. Your identification will be protected by fictional names. If any portion of the interview is used in an article or report, you will be shown the portion to make sure it is adequately disguised. If you participate in this research you will gain a greater understanding of the application of the Adult and Continuing Education graduate degree and how you apply past learning to your instruction. The researcher guarantees confidentiality of your responses. Any time you feel unable or

unwilling to continue, you are free to withdraw your consent and stop your participation. All participants will be given a \$25 Starbucks gift card for participating in the study.

Contact for any problems or questions:

If you have additional questions, please contact: Dr. Royce Ann Collins, 22201 W. Innovation Dr., Olathe, KS 66061, or by calling 913-961-4255

Contact IRB Chair:

The Institutional Review Board at Kansas State University approves all research conducted with human subjects. If you have any questions about the manner in which this study is conducted, you may contact Dr. Rick Scheidt, Chair, Committee on Research Involving Human Subjects, Kansas State University, 1 Fairchild hall, Manhattan, KS 66505 or by calling 785-532-3224

I have read the above statement and have been fully advised of the procedures to be used in this study. I understand that this project is research and that my participation is completely voluntary. I understand that if I decide to participate in this study that I may withdraw my consent at any time, and stop participating at any time without explanation or penalty.

Check the statement that applies:

_____ I volunteer to participate.

_____ I do not agree to participate in this study.

Signature

Date

Printed name

Appendix B - Participant Background Information Form

Name: _____

Year you earned graduate degree: _____

Higher Education Institution where you work: _____

Class/es you instruct: _____

Describe your teaching method/s: _____

What is your learning style: _____

What was your most memorable class experience during your Adult and Continuing Education degree program: _____

Appendix C - Interview Protocol

Participant:

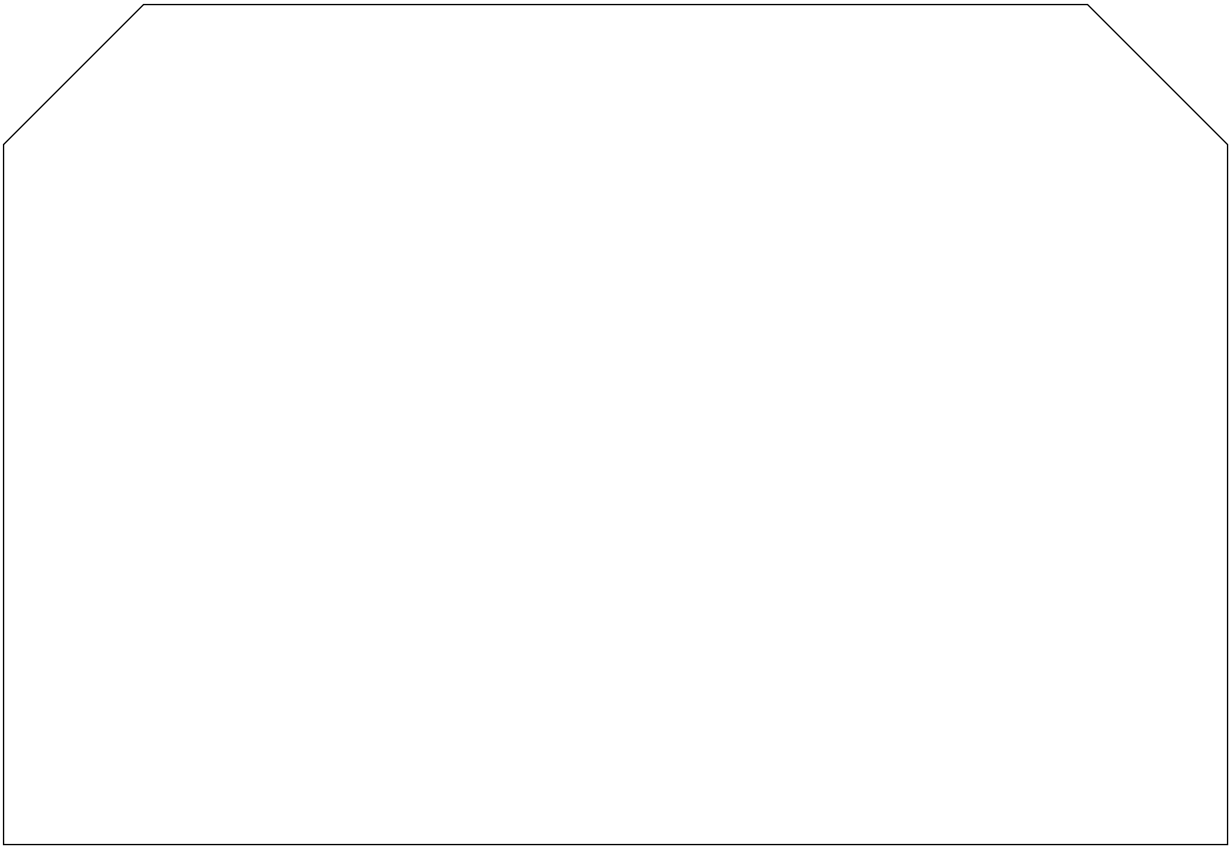
Location of interview: _____

Date:

Interview length: _____

Interview ____ of _____

Figure C.1 Interview location setting



Research Purpose: To investigate how graduate students articulate their past experiences with the degree program and how it creates new meaning and influences current practices.

Research Question: What are graduates' perceptions of their ability to transfer their learning after completing a Midwest university's masters degree program?

Interview Questions 1: On the participant background information form you stated, “ “; why was it the most memorable class experience?

Subsequent Questions to Question 1: How has that experience influenced your instructional practice?

Interview Questions 2: You stated your teaching method was “ “; explain how you developed that particular method?

Subsequent Questions to Question 2:

Interview Questions 3: Does your course material effect how you instruct?

Subsequent Questions to Question 3:

Interview Questions 4: In what ways has your degree in Adult and Continuing Education influenced your professional practice?

Subsequent Questions to Question 4:

Interview Questions 5: Your learning style is “ ”; has knowing your learning style influenced your instructional practice?

Subsequent Questions to Question 5:

Interview Questions 6: Do you find it important to know your learning style and that of your students? explain

Subsequent Questions to Question 6:

Researcher notes:

2nd Interview

Participant:

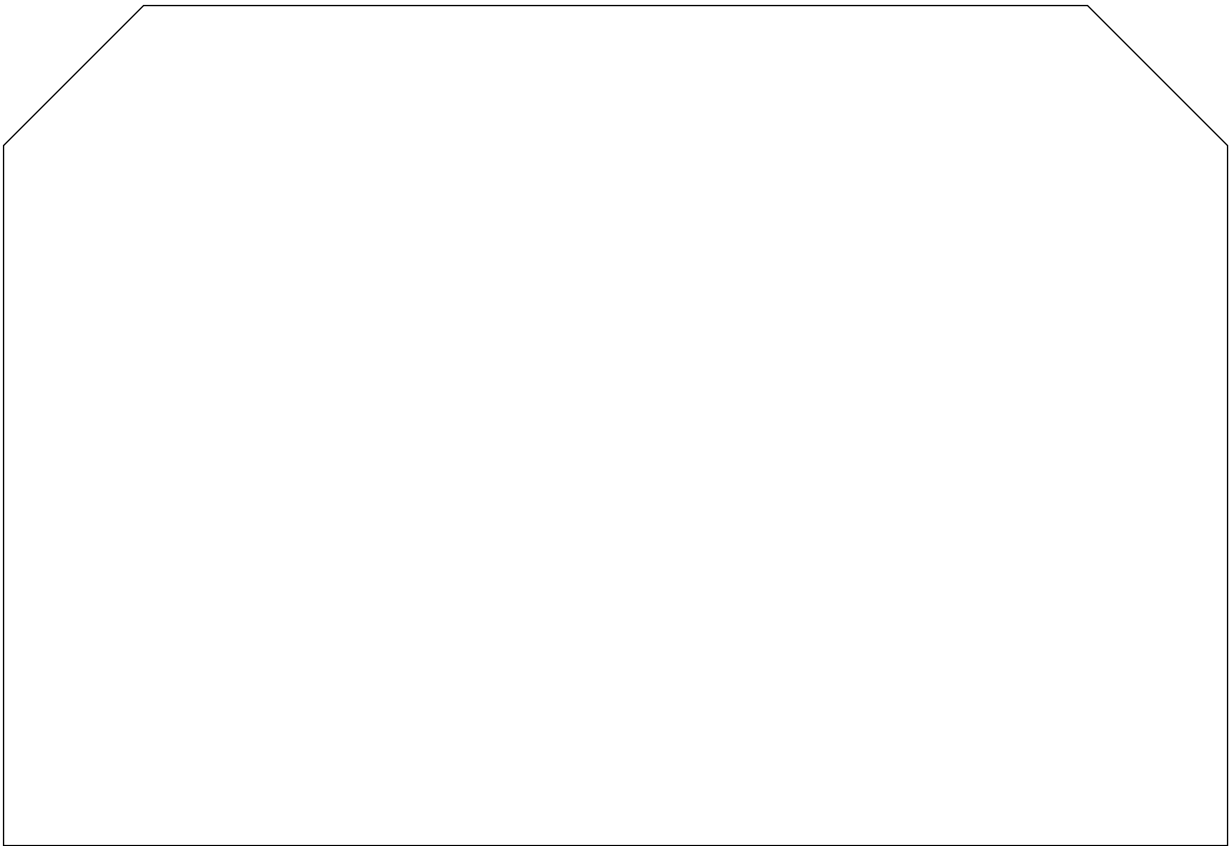
Location of interview: _____

Date:

Interview length: _____

Interview ____ of _____

Figure C.2 Interview location setting



Interview Questions 1: In your reflective journal you mentioned, “ “; what particularly made you think of that one teaching point?

Subsequent Questions to Question 1: Where did you learn that teaching technique?

Interview Questions 2: How did your course work influence your teaching practices?

Subsequent Questions to Question 2:

Interview Questions 3: Your method of journaling offers an insight you as a professional teacher. Where did you learn reflective journaling?

Subsequent Questions to Question 3: Is it a valuable teaching technique? Why? Do you use it?

3rd Interview

Participant:

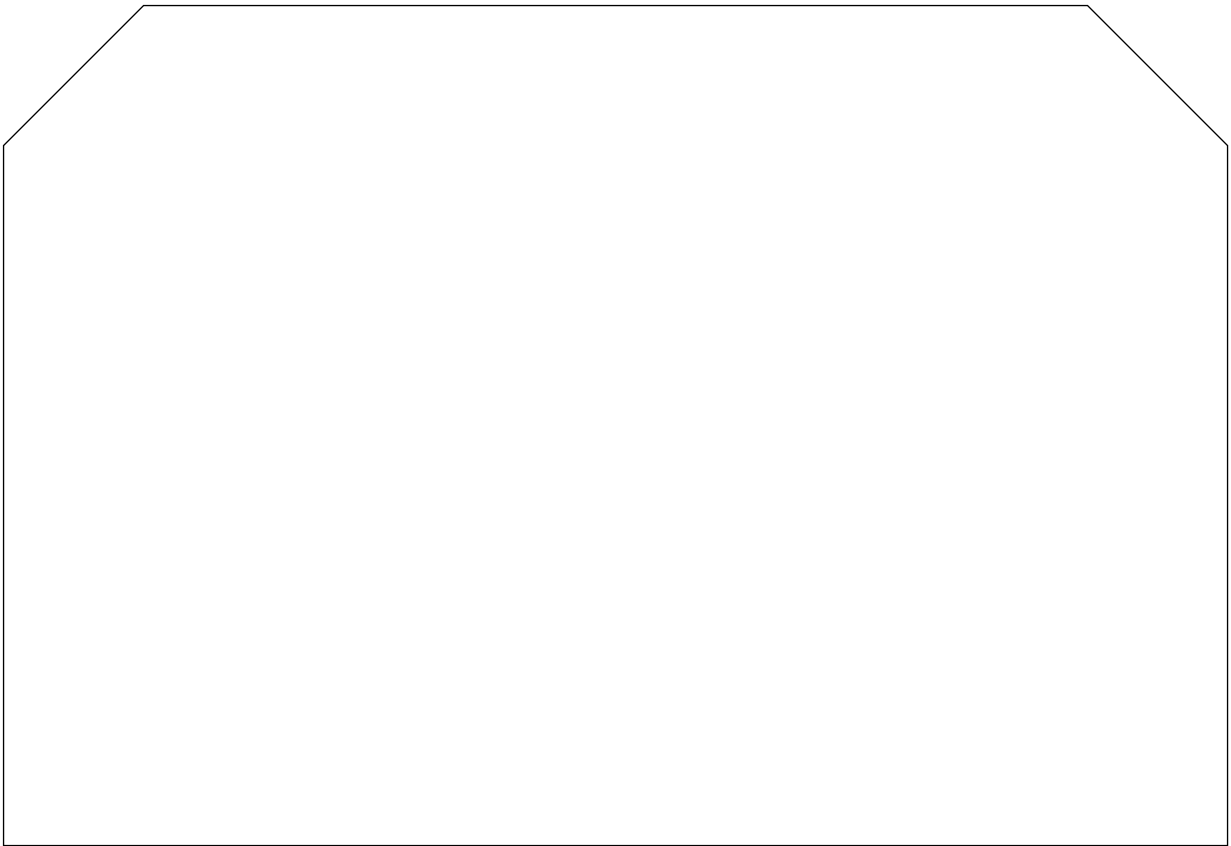
Location of interview: _____

Date:

Interview length: _____

Interview ____ of _____

Figure C.3 Interview location setting



Interview Questions 1: In your reflective journal you mentioned, “ “; what particularly made you think of that one teaching point?

Subsequent Questions to Question 1: Where did you learn that teaching technique?

Interview Questions 2: How has your course work influenced your teaching practices?

Subsequent Questions to Question 2:

Interview Questions 3: Given your course content for this semester, how have you addressed student learning based on experience?

Subsequent Questions to Question 3: What about your graduate degree program?

Interview Questions 4: What advice would you offer a graduate of your program to a new teacher?

Subsequent Questions to Question 4: How has your reflection on your graduate degree program influenced, impacted your approach to teaching in the future?

Appendix D - Observation Protocol

Figure D.1 Classroom setup



Technology in classroom:

Teaching methods:

Adult Learner learning technique:

Other:

Researcher comments: