Andragogy Content Knowledge Technology:

A Training Model for Teaching Adults

by

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ABSTRACT

Professional Development (PD) is an important tool in the field of
education. Successful PD programs are those that include adult learning methods
and opportunities for experiential learning and discussion. The university where
this action research was conducted does not offer formal training to adjunct
instructors. The adjunct instructors are hired based primarily on their content
knowledge. This research was conducted to understand, if the application of a
blended training model for adjuncts influences the adjunct's perception of
meeting their student's educational needs and the student's perception that their
personal education needs are met. The blended learning included the delivery of a
framework that incorporated Andragogy, Content Knowledge and Technology
(ACKT). The purpose of the ACKT framework is to supplement adjunct's
content knowledge expertise with adult learning methods and technology. The
effectiveness of the framework was measured by using a quasi-experimental, pre
to post intervention assessment. The treatment group and control group each
contained twenty-two adjunct instructors from the university. The treatment
group received training on the framework prior to commencing the class and
participated in two focus groups during the semester. In addition, the treatment
group was observed teaching in their classroom. The control group did not
receive training, or participate in focus groups; however they were observed
teaching in their classroom. The results of the action research showed significant
improvement for the adjunct instructors in the treatment group. Specifically,
knowledge of and application of andragogy showed a large improvement. In

addition, the social influence of the adjuncts in the treatment group showed a

large improvement. Less significant was the improvement in the efficacy of the

students in the treatment group classes compared to those in the control group

classes. However, the data suggests that the students in the treatment group better

applied the content learned and they were more aware of other's educational

needs than their peers in the control group. The study supports the need for

adjunct instructor PD. Through a PD program adjunct instructors increase their

own efficacy and this improvement translates into increased content transfer for

the students in the classroom. Based on the strong evidence for adjunct instructor

improvement this research will continue by expanding the blended learning model

to more of the adjunct instructors at the university, and continuing to evaluate the

effectiveness of the model in meeting student's educational needs.

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Chapter 1

INTRODUCTION

This action research study explored the effect of applying a blended

training model for adjunct instructors with the goal of improving the self-efficacy

of both instructors and students. The training occurred prior to the class

beginning and continued during class delivery. This training model was based on

a combination of Social Learning Theory (SLT), developed by Albert Bandura

(1977); principles of adult learning, or andragogy, by Malcolm Knowles (1970);

and the Technology Pedagogy Content Knowledge (TPACK) framework,

designed by Koehler & Mishra (2008).

The action research took place in a Southwest private nonprofit university

with more than 100 years in the field of education, providing college instruction

to traditional students, coming from (secondary) high schools, as well as adult

students returning to earn college credits or degrees. The different groups and

programs involved in this action research are defined in Chapter 3.

Background of the Study

The Professional Development Department (PDD) at this southwest

university offers continuing education courses for K-12 professionals, including

teachers, administrators and counselors. These classes are offered in both face-to-

face and online formats; 85% of the courses are delivered in the traditional face-

to-face setting, while the remaining 15% are delivered via the online environment.

The PDD alone serves an average of 1,500 students per school year. As the PDD

administrator, I have the responsibility of developing course academic

curriculum, scheduling classes, advising students, contacting and selecting adjuncts, as well as meeting enrollment and retention goals. It is my belief that the instructors' knowledge about education (content and andragogy), coupled with the quality of the courses and its academic curriculum (technology), are paramount to the success of the program.

The PDD academic curriculum follows Arizona Department of Education (ADE) teacher certification standards to provide high quality courses that fulfill endorsement, certification, re-certification and professional growth requirements set by ADE and school districts. To deliver a high quality curriculum, courses are developed by blending three areas: academic content, National Staff Development Council (NSDC) standards for professional development, and ADE requirements for certification.

The first criterion is considered academic content; the subject knowledge within each academic area. For example, the academic content of mathematics is any topic that falls under the academic category of math, such as numbers and operations, geometry and algebra. To teach any of these topics, the curriculum must cover the literature knowledge, such as definitions, concepts and meanings. So, when the PDD develops its curriculum for professional development (PD) courses, academic content is the main focus. PD courses cover a vast number of topics within each academic area. To ensure the integrity of each course textbooks, peer-reviewed articles and supplemental material are selected to support the content of each academic area.

The second criterion for PDD's curriculum is the set of NSDC PD standards. They are divided into three areas: a) context standards, b) process standards and c) content standards (Appendix A). All three areas focus on "Staff development that improves the learning of all students." (NSDC, 2001). Therefore, PDD incorporates strategies in each and every course that promote the necessary teaching skills to develop more effective and skillful educators at every level of the school system, including superintendents, principals, teachers, administrators and staff, so they can successively impact student achievement.

The third and final criterion for high quality curriculum is the ADE set of requirements for teacher certification. The requirements state that once educators obtain a permanent certificate, they are required to renew it every six years. To renew the certificate, educators must show evidence of having taken 180 hours of PD, which can be acquired through no-credit (Continuing Education Units, or CEUs) workshops delivered by a district or from outside organizations or through academic institutions such as community colleges or universities. The PDD offers both forms of PD hours; however, the college credit hours are based on curriculum pre-established by ADE. These courses support endorsements and other areas of education skill development like class management.

These three criteria alone cannot guarantee the University's objective of delivering the highest quality liberal arts and professional education for all students; a training model to guide PDD's instructors is also necessary to achieve this objective. In 2009 and 2010, I conducted two cycles of action research with PDD's online instructors. The first cycle focused on a needs assessment and

sought to understand the instructor's confidence level in their online teaching skills. The instructors were asked if they felt that they needed to be trained before teaching in an online environment. The findings indicated that PDD online instructors have a low level of confidence in their technical skills and knowledge when instructing online classrooms (Santos, 2009). Consequently, the instructors felt that they needed to be better prepared and trained by PDD before teaching an online class.

The second cycle of action research focused on developing and delivering an appropriate training model for the online course instructors. The implemented training model was based on the Technological Pedagogical Content Knowledge (TPACK) model outlined by Koehler & Mishra (2008). The workshop training received very positive feedback from instructors who attended the section. The attendees especially found that the workshop training improved their awareness of supplemental online resources available and the pedagogical skills needed in online classes (Santos, 2010).

The results demonstrated a positive outcome after instructors received proper training through the TPACK model. This data raised curiosity about the quality of the entire PDD academic curriculum and its delivery through both online and traditional classroom environments. Are all instructors, (both online and in traditional classrooms), well prepared to teach PD courses? Does PDD have a sustainable training model that promotes high quality instruction and delivery of content? These questions are critical since PD requirements and expectations are constantly changing with national and local educational reforms,

does PDD have a training model that can be continuously adapted to those changes insuring the purpose of PD is reached? Does PDD have a method to evaluate its courses and measure student satisfaction? The questions were the initial thoughts of the researcher, and they set the stage for finding the best way to support the PDD and its instructors to ensure the delivery of quality PD courses to students.

Statement of the Problem

Based on the prior cycles of action research and the questions raised above, there were two problems that concerned me:

1) There was no formal training for PDD adjunct instructors before they start to teach.

2) There was no philosophical or instructional model to guide instructors to meet students' educational needs.

There was not an existing training to guide PDD adjunct instructors in delivering the course academic curriculum of the program or in understanding the PDD's expectations for them. As a result, it was challenging to evaluate whether PD courses were fulfilling their purpose of delivering the highest quality PD that improves educators' skills and knowledge.

Purpose of the Study

The purpose of this study was to address the problems identified above by developing, implementing and evaluating a required comprehensible, blended training model for PDD adjunct instructors prior to beginning classes and during teaching for the program. The training model used a combination of Social

Learning Theory (SLT), principles of adult learning (andragogy), and the TPACK framework.

Adjunct instructors' skill in delivering the program's academic content is the key element for the success of the PDD. This research explored the impact on adjunct instructors' confidence levels in meeting students' educational needs once PDD requires a training model.

Research Questions

I explored the implementation of a comprehensive, blended training model for adjunct instructors offered prior to beginning and during teaching for PDD. The idea of developing and implementing this type of training originated from the need to prepare and support PDD instructors, so they can best meet students' educational needs. The training applies to delivery of traditional face-to-face classes and to classes taught solely on-line. This study addresses the following question:

1. How does the implementation of a comprehensive blended training model for adjunct instructors, prior to and during teaching, influence the adjuncts' perception of meeting their students' educational need?

2. How does the implementation of a comprehensive blended training model for adjunct instructors, prior to and during teaching, influence the students' perception of how their educational needs are being met?

Chapter 2

REVIEW OF SUPPORTING SCHOLARSHIP

The purpose of this literature review is to explore the research on models of training in an academic teaching curriculum. Through this review, we will have a deeper understanding of the approach for the training intervention. This review also explores the concept of professional development opportunities in an academic teaching curriculum. The review examines Bandura's (1977) concepts of social learning theory (SLT) as the theoretical framework and Knowles' (1970) principles of adult learning, mixed with the Technology Pedagogy Content Knowledge (TPACK) model (Koehler & Mishra, 2008), as the conceptual frameworks for the basis of the training model to be used with PDD course instructors. In addition, the literature review seeks an overall understanding of professional development for educators and progress accomplished in this area.

Social Learning Theory

The process of learning is viewed by many scholars as a social approach, where the acquisition of new knowledge is gained through interaction and observation of others' actions (Bandura, 1977; Bandura & Walters, 1963; Rotter, 1954; Skinner, 1953). Social Learning Theory (SLT) (Bandura & Walters, 1963) describes how human beings gain new or improved knowledge through the continuous and reciprocal contact with others where the environments, behavioral and cognitive elements influence learning. "In human societies, the provision of models not only serves to accelerate the learning process but also,[…] becomes an essential means of transmitting behavior patterns." (p. 52).

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This approach to modeling is seen in pre-service teaching environments where student teachers must complete their field experience through placement in an actual classroom, they are under the tutelage of an experienced educator and are expected to learn through observation of their mentor's modeling. Therefore, modeling is a strong method used by humans to transfer a variety of behaviors:

> Modeling is a powerful means for establishing behavior, but it has rarely been studied as a maintenance factor. Considering that human behavior is extensively regulated by modeling influences, there is every reason to expect that seeing others successfully regulate their own behavior by conditional incentives would increase the likelihood of adherence to self-prescribed contingencies observed. (Bandura, 1978, p. 354)

This mandatory practical application is required throughout teacher preparation programs in the United States (American Association of Colleges for Teacher Education & Modoc Press, 2004). This same idea can be seen in PD programs for K-12 educators, where educational professionals use the social environment to exchange knowledge.

This idea, of social interaction among educators, is described by Bandura as a beneficial element for learning. Today Bandura's SLT is seen in the practice of Learning Communities (LCs), in which K-12 educators share with and learn from each other on a regular basis, using student achievement as their common focus. The most common places for K-12 educators to create LCs are in school districts, colleges and universities. It is important that in a LC the leadership brings stability and guidance. These two elements are fundamental to providing sustainable growth, using feedback and coaching through a cyclical review of the learning (DuFour, 1999). Hord (1997) shared that LCs have the duty of

nourishing the environment of PD, so that it is not a separate element from the day to day activities of an educator. Hord (1997) argues that PD should be integrated on a daily basis so that "teachers in a school and its administrators continuously seek and share learning, and act on their learning. The goal of their actions is to enhance their effectiveness as professionals for students' benefit" (p. 10).

Social learning theory fits well in the process of professional and social development, for teacher PD is a process by which professionals grow and enrich their abilities to perform their profession. SLT is important to PD because once a professional achieves a highly skilled level social interaction with other highly skilled professionals becomes the way to continue to grow and develop.

Self-efficacy. The concept of self-efficacy has its roots in Bandura and Walters (1963) social learning theory. PD instructors and K-12 educators share a relationship in the professional development process. The social interaction between the instructor and the K-12 educators contributes to the desire of both parties seeking ways to improve their professional skills. Belief in oneself and belief in another's ability are key to developing self-efficacy. The belief that one can achieve more is self-efficacy. The desire that moves people to look for opportunities to improve is called self-development by Bandura (1978). To achieve something it first has to be believed (self-efficacy); once belief is established then the desire (self-development) to achieve it grows. Bandura's theory of self-efficacy starts with a personal and internal impulse, a belief in the need for self-development. Self-efficacy is the capacity of an individual to

believe in her or his ability to succeed in a particular task (Bandura & Walters, 1963). This idea of self-efficacy helps both the instructors, who are delivering PD to believe that they can accomplish the task of helping K-12 educators in improving their professional skills, and the K-12 educators in believing that they can take the new knowledge learned back to their work environment and apply it. (Bandura, 1982)

Bandura (1977; 1997) presented his work in four areas to measure efficacy: (a) Explicit experience, (b) Mastery knowledge, (c) Physiological and emotional conditions, and (c) Social influence. First, explicit experience is known as modeling. Someone (an instructor) will perform or model the skill to an audience (students). The amount of connectedness the audience feels with the performer will raise or lower the efficacy of both parties. Teachers' high expectations toward students increases students' efficacy. Likewise, students' high expectations toward the teacher, increases the teacher's efficacy (Pajares, 1996). Second, mastery knowledge is a key factor in efficacy. For teachers, it is essential for them to know that they have mastery over the content, in addition it is important for students to see their teachers content mastery. The perception that a person knows and masters a skill is important when measuring self-efficacy (Bandura, 1977). Third, the physiological condition is related to a persons' body. To increase efficacy, people need to have the proper physical condition, not just their own but the environment around them. This area is clearly demonstrated with athletes in sports. They must have the physical condition to perform, as well as the equipment and supplies. The emotional condition is the person's mindset;

again both teachers and students must be focused and present on the task for the efficacy to be seen (Pajares, 1996). Fourth, social influence involves "motivating speech" encouragement and supportive feedback. It is the teachers' ability to influence students. It is paramount that students give teachers good feedback so the teachers' efficacy also stays high (Pajares, 1996). These areas of efficacy presented by Bandura, are mutually fulfilling in the academic setting. Teachers and students must support each other in all four areas outlined by Bandura to develop mutually reinforcing self-efficacy.

Pajares (1996) explains self-efficacy as a path where, "… self-referent thought mediates between knowledge and action, and through self-reflection individuals evaluate their own experiences and thought processes" (p. 543). This statement helps to support training for instructors that incorporates the concept of self-efficacy, since Pajares (1996) links the methodology of instructing the intellectual capacity of what an instructor wants to accomplish in the classroom, with the real steps that an instructor takes in the classroom. An instructor's knowledge of a subject area and the self-confidence of delivering, provide the best combination for an effective, professional development section. In addition, Ross (1998) explores the idea that, "… teachers' belief that their efforts, individually or collectively, will bring about students learning" (p. 50). To be an effective teacher, one must possess a self-belief in the ability to teach. In agreement with Bandura (1977, 1997), both Pajares (1996) and Ross (1998) present self-efficacy as a key element to accomplishment. In education, Schunk (1991) used self-efficacy as an individual conviction of being capable of

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accomplishing a specific task at an intellectual level pre-established. Therefore, the requirement for both, adjunct instructors and K-12 educators, to follow and deliver curriculum is to possess a pre-established intellectual level of confidence in their academic knowledge and to have high self-efficacy when delivering instruction. Therefore, self-efficacy is seen by many researchers (Bandura, 1977; Pajares, 1996; Ross, 1998; Schunk 1991), as a powerful force to drive teaching and learning.

Principles of Adult Learning

It is very clear that there are differences between children and adults in everyday life. In the field of education, however, the differences between how children and adults learn are often ignored in college and university curriculum. The educational system continues to try to teach adults using the same methodology applied to children in elementary and secondary schools (Knowles, 1988). Adults have very distinct needs in order for learning to take place. An early study by Lindeman (1961) showed that adult education goes beyond the classroom and curriculum. Adult education involves a vast field of learning possibilities through everyday experience: "[T]he approach to adult education will be via the route of situations, not subjects" (p. 5).

Lindeman's first ideas concerning adult education are the basis for the phenomenon of educating the adult; however, his ideas were "forgotten" for a few decades. In the 1970's Malcom Knowles (1970) brought back the picture of adult learning painted by Lindeman and wrote much about it. He clearly identified

adult learning needs and acknowledged key characteristics that belong to the adult learner.

First, if instructors want to be effective in the learning process of an adult, they need to recognize that adults come to the classroom full of life experience, knowledge and understanding that come from activities related to work and field experience, social and family relationships and commitments, and previous schooling opportunities. Instructors must incorporate a link to life experience on the adult learning path. For adults, life experience carries significant meaning to learning; to think about a subject and reflect through logic and theory is not sufficient in the adult mind. It is necessary to experience the topic in real life, and actualize the learning (Knowles, 1970). Lindeman (1989) added in his early thoughts, "The whole of life is learning, therefore education can have no endings. This new venture is called *adult education* – not because it is confined to adults but because adulthood, maturity, defines its limits" (p. 4).

The adult learner's life experience identified by Knowles (1970) is also shared by Paulo Freire's (1970) analogy of "banking" as an approach to adult education. These theories help instructors understand that they must involve the adult learner in the topic by relating the adult learner's prior experience to the subject. The idea learners are like empty bank accounts that need to be filled by instructors with information acknowledges adult's experience and depth of understanding. It is essential that instructors' link theoretical concepts to the adult learner's life and that they acknowledge the value of experience in learning.

Another key characteristic of adult learners is their independent desire to learn and consequent self-directed decisions to achieve the learning. Adults are able to choose their learning environment and have awareness about the best ways they learn. Children, on the other hand, are placed into a school based on mandatory requirements and their guardians' wishes. No one consults the child about where, when or with whom they will learn. Conversely, adults decide when the time is right for them to continue their education and may have many different reasons for doing so. These reasons include expansion of knowledge, expansion of employment opportunities, emotional desire or financial timing. "Having become secure in his basic job, his task becomes one of working up the ladder. Now he becomes ready to learn to become a supervisor or executive." (Knowles, 1970, p. 46). Freire (1970) also addresses the idea of adults directing their learning and basis the self-direction in awareness. His democratic view of education values an exchange of knowledge and experience to help an adult achieve their objective through engagement with the learning group. He wanted a more authentic educational approach that would generate a *conscientização* (conscientization) of the individual within a group. This conscientization is the act of bringing forth one's commitment to gain the knowledge desired and achieving it through self-direction within a group educational setting. Freire (1970) explained his desire to "[I]ntroduce women and men to a critical form of thinking about their world" (p. 104). As well as Knowles identification of adults being self-directed, for Freire this self-directed characteristic comes with the adult awareness or conscientization to pursue knowledge or specific improvement of a

skill. This decision is also connected to motivation; adults must be motivated to learn. This motivation may be external or internal, but the decision is always in the adult learner's hands. Instructors and school programs must recognize that the adult learner is free to come and go, unlike children who are legally mandated to attend school (Rogers, 2001).

Adult learners are also largely practical; they want to see that a topic is relevant and has a logical reason to be learned. In research done with children, they are told that most of the content they learn in elementary school is taught to help them to succeed in middle school, while most of the content learned in middle school is geared to help them succeed in high school, and so forth (Cuban, 1993). Adult learners have a tendency to believe that anything they learn must have an immediate purpose, so instructors of adults must organize their content differently: "Because adult learners tend to be problem-centered in their orientation to learning, the appropriate organizing principle for sequences of adult learning is problem area, not subjects" (Knowles, 1970, p. 49).   Making content relevant to adults is a process of bringing theories and concepts to a setting that communicates the relevancy of the topic. The importance of social interaction comes back into play, as well:

> When adults deal with situations that demand action [problem solving] from them, glimpses of the lifeworld become possible. Pieces of it also come into view in the process of what Habermans calls symbolic reproduction. The lifeworld is always being renewed and recreated as we involve ourselves in communicative action. (Brookfield, 2005, p. 240)

A fourth key characteristic of adult learners is their search to fulfill their personal needs and goals. It is very important for adult learners to understand

even before registering for a course or program, how that specific class will help them to reach a goal. Knowles (1970) sees that adults' desire to reach a goal comes from the universal human need of self-development, emphasizing that "at least a feeling of movement in this direction is a condition of mental health" (p. 23). Being goal-oriented, adult learners realize the concept of self-development through a concrete goal, such as gaining a certificate or earning a degree. Education for adults goes beyond having and not having; adults seek to move from one state to another, from ignorance toward enlightenment, from few responsibilities toward many responsibilities, from impulsiveness toward rationality, and so forth. Brundage and Mackeracher (1980) connect the idea of reaching one goal after another as the implicit commitment of lifelong learning; adults' need for self-development is this journey through this learning.

The fifth characteristic that Knowles ascribes to adult learners is the need for respect. Knowles acknowledges that when adults decide to go back to school, they might feel "weak" or "vulnerable," like a child. However, adults want to be treated with respect they don't want to be humiliated or seen as if they don't bring knowledge to the class. Knowles again recognizes the life experience that adult learners bring to the classroom. He further notes that these experiences should be acknowledged and respected. Rather than viewing an adult learner as an empty book ready to be filled, the adult learner brings a self-written book to the classroom. He or she already comes with a level of knowledge and should be respected for that knowledge: "[A]dults have a need to be treated with respect, to make their own decisions, to be seen as a unique human being. They tend to

avoid, resist and resent situations in which they feel they are treated like children

– being told what to do and not to do, being talked down to, embarrassed,

punished, judged" (Knowles, 1970, p. 40). Respect requires that the instructor

engage the student as a learner and ask his or her opinions. It means that

instructors should assume that the learners already possess the knowledge. The

role of the instructor is to facilitate learning through interaction, discussion and

shared experiences.

Finally, adult learners want to see their education as a tool. With tools we

build things; tools are functional instruments that help us to complete a task.

Adult learners want to understand the direct practicality of the knowledge they

learn in class. Adults want knowledge that can be used and applied in a practical

manner, (Knowles, 1970). Lindeman and Smith (1951) make their arguments

about the importance of the practicality of knowledge, since adult learners want to

apply what they have learned in their daily lives. Dewey (1944) talked about the

idea of practical knowledge, knowledge as a tool, and believes that it is

"education as a social function" (p. 10) that makes it possible for adults to share it

with their communities in everyday life.

The foundation of education is the transfer of knowledge. As we learn to

better understand and differentiate between the adult learner, the adolescent and

the child, it is ever more clear that the student-content, student-student, instructor-

student relationships should be differentiated in accordance with the learner's age.

The framework or model that one employs to approach learning will impact to

what degree a learner values the learning experience and ultimately impacts the overall success of the transfer of knowledge.

Technology Pedagogy Content Knowledge Framework

The Technology Pedagogy and Content Knowledge (TPACK) (Koehler & Mishra, 2008) framework offers a three-faceted look at instructor capability. The TPACK model, while not perfect, provides a framework for research that informs this study. This framework measures technological expertise, content knowledge and pedagogical experience. It does not account for faculty motivation, confidence, or even psychological capabilities. The framework does look at the fundamental skills needed for teaching with a variety of technologies and the impact of these skills in the educational setting, while it also addresses the transfer of knowledge through content and pedagogy. The TPACK framework discusses one of many ways to teach using technology in the continuing education environment. Technology, pedagogy, and content knowledge should interact in a balanced way with one another. It is the relationship between these components that will create a good teaching environment.

As technology started to be used in the classroom, it was viewed much the same way as pedagogy was viewed in the first half of the last century: as unimportant and separate from the main focus of education. In addition, training in education technology was not a main concern until the 1990s (Wentworth & Earle, 2003), and most of the time it was delivered as a separate part of teachers' professional development.

Cuban (2001) pointed out in his book, *Oversold and Underused: Computers in the Classroom*, that to continue presenting technology apart from pedagogy and content is a disservice to programs in education and to students. As a consequence, many researchers have presented an augmented version of Shulman's PCK framework (Shulman, 1986) to introduce the component of technology (Mishra & Koehler, 2006). The three intertwined components of pedagogy, content and technology form the framework known as TPACK.

TPACK components. As we have seen, the TPACK framework can be very complex; therefore, a brief summary of its three components and the places where they overlap will be examined.

Content knowledge (CK) is the understanding of a specific academic concept, such as Pythagoras' theorem in mathematics or syntax in language and arts. To fully comprehend a specific concept, a person needs to know and recognize the structures of CK (Shulman, 1986). This portion of the framework relates the concept theory to the application of the concept. In other words, CK transforms abstract understanding into tangible outcomes, such as solving an equation in mathematics, identifying the three states of water (liquid, solid and gas) or writing a complete sentence.

Pedagogy knowledge (PK), according to Wong and Wong (2009), is an arrangement of multiple mechanisms, including classroom management, communication, instructional models and strategies, assessment and a wide range of teaching approaches. In addition, practical experience, personal critical thinking and community play an important role in forming the instructor's PK.

Technology knowledge (TK) describes a person's ability to utilize a vast range of technologies, especially computers. Effectively working with computer hardware and software, navigating the Internet, introducing online videos and utilizing online collaborative tools are all examples of using technological knowledge to create a positive outcome (Mishra & Koehler, 2008).

Pedagogy content knowledge (PCK), "subject matter knowledge for teachers," (Shulman, 1986) is the portion where pedagogy and content overlap in this framework. This segment represents the teachers' ability to integrate teaching strategies and methodologies (PK) and the academic curriculum (CK) offered by the institution. For a full application of PCK, teachers need to demonstrate and understand the learning processes, learners, educational objectives, goals and assessment. This information needs to be transferred to students in an efficient and effective way so they understand the learning outcome for a specific content.

Technology pedagogy knowledge (TPK) describes a common awareness of the application of general technology in the field of education, the use of technology available in a creative way to enhance content learning (Harris et al., 2007). Some examples of the usage of TPK are the use of a webcam, online collaborative tools, and discussion boards, all of which can be effective ways to generate connection between students and instructors. An instructor's ability to lead the distance learning community in the direction of knowledge gained through technology, is also important.

Technology content knowledge (TCK) represents the ability to bring and apply a technology to a specific content area. An instructor with strong TCK will understand that different disciplines will require different technologies to generate the outcome necessary for learning. Teachers' understanding of the content is used to select the best technology available to meet the description of the content. (Harris et al., 2007)

The TPACK model is created by combining all these components. It is a multi-faceted relationship between teachers, technology, the understanding of content and the application of teaching strategies. (Mishra & Koehler, 2008). Teachers who can use the TPACK framework understands how to utilize technology as part of their teaching methodology, in support of teaching content.

Effective Instruction

Over time, the knowledge thought necessary to be an effective instructor has varied. In the past it was satisfactory for instructors to be acquainted with subject matter alone; however, knowledge of students' learning styles was not required (Lynch, 1997). By the 1980s, the focus changed and schools switched from teacher-centered to student-centered teaching. The pedagogy has swung from one end of the spectrum to the other, leaving content knowledge subordinate to teaching methods (Shulman, 1986). Shulman claimed that it was very important for instructors to integrate both pedagogy and content knowledge together and not to use them as two disconnected units. This integrated approach presented by Shulman is often used as a foundation in many educational literature articles (Segall, 2004).

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Segall (2004) presented the idea that pedagogical content knowledge (PCK) could be used in different areas of education. Deng looked at the professional development of teachers through the PCK lens, thinking it was important to investigate the intellectual basis of the concept. PCK for professional development is the idea of transforming content knowledge an instructor possesses into classroom teaching. It is very important to look at PCK when developing training for instructors.

Trained teachers are valuable to students and schools (Segall 2004), however this idea was not shared by William Bennett, U.S. Secretary of Education (1985-1988), who believed a person did not need professional training in education to be a teacher (Delaney, 1985). This myth persists to this day. The idea that anyone with a college degree can be an educator left this misconception that if a teacher has content knowledge, he/she can be placed in a classroom without professional knowledge of teaching methodologies. Therefore, it is important to institutions, whose job is to deliver quality education, to provide academic support and continuously PD to their instructors. This will ensure their teaching skills are developing.

The PCK framework is a multi-faceted tool meant to increase instructors' subject matter and pedagogical knowledge, to improve lesson design and to maximize teaching strategies and knowledge of assessment techniques for children. That is, the framework focused on young students (pedagogy) rather than adult learners (andragogy). All of these areas are a part of continuing professional development and training. This same concept of integrating

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pedagogy content knowledge can be transferred to fit the needs of adult learners by substituting andragogical principles of adult learners for pedagogical, as seen in *The Modern Practice of Adult Education: Andragogy versus Pedagogy* by Knowles (1970). Thus, we have a new hybridized term referring to adult learners: andragogy content knowledge (ACK).

National Educational Technology Standards

The International Society for Technology in Education (2008) developed and made available six National Educational Technology Standards (NETS) for teachers, which are also used as performance indicators for technology in education. The purpose of these standards is to influence the application of technology in the elementary and secondary classrooms and assure that instructors are integrating the mix of educational capabilities into their instruction while supporting learning through technological enhancements. The standards help teachers to incorporate technology in their everyday lessons to influence how students learn and study successfully. The standards support the ACKT framework since they are a way of assessing and measuring the use of technology. The standards below were used as a basis for the evaluation of technology observed when being used in the classroom.

In the first NETS teacher standard "*Technology operations and concepts*", teachers infuse a clear understanding of technology in its application and theory. The second standard "*Planning and designing learning environments and experiences*", allows teachers to effectively incorporate technology into their daily lessons aiming the exploration of a deep learning environment, giving students

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opportunities to experience its use. With the third standard "*Teaching, leaning and curriculum*", teachers put into action what they have developed through the curriculum, such as augmented strategies and methodologies that maximize technology to support students' learning. The fourth standard "*Assessment and evaluation*", includes the use of technology to assist on evaluation of students' learning and teaching strategies. The fifth standard "*Productive and professional practice*", offers teachers the opportunity to continue to improve their creativity and professional use of technology. The sixth standard, "*social, ethical, legal and human issues, assures*", that instructors consider the mix of students that are in the classroom and understands the social environment in which we are functioning, from the legal landscape to the ethical, oral and social context.

These standards were paramount to understanding the rich environment in which we provide educational services to students. As I begin to internalize the impact of technology on our classrooms, it is important to recognize the impact that the multimodal educational model has on the classroom. Technology is not a single direction of input. When used at a higher level, as indicated through these standards, it provides multidirectional learning for the student and for the instructor. This set of standards assures that the technology is used to support and enhance learning. It demonstrates the value of the ACKT framework wherein the additional layer of technology can bring a single-dimensional model (lecture and discussion) for knowledge transfer to an environment where learning can be enhanced by tapping into more learning tools and the true power of technology.

Professional Development for Educators

In the time of Plato, followers would learn from him as their master and then start their own schools, but these disciples consistently returned to their master teacher to continue learning (Barrow, 2007). The idea of returning to the source of knowledge for refreshment and renewal is as old as recorded history and reflects the essence of professional development. The very nature of education requires its practitioners to continuously study developments in the field to remain current.

The main purpose of a professional development program for educators is to effectively improve K-12 students' achievement or outcomes. Even though the students themselves are not in the PDP classroom, they are the final receivers of the product of this professional development program, since "[i]t focuses on educators attaining the skills, abilities, and deep understandings needed to improve students' achievement" (Speck & Knipe, 2005, p. 4). K-12 students are impacted by the skills acquired by their educators. Practitioners who enroll in the PDP are all professionals in education who hold a certificate issued by the ADE in the areas of superintendent, principal, teacher or counselor. Therefore, PDP courses are designed to help educators improve their professional skills, which in turn directly impacts the knowledge transfer to their students.

Historically, educators have been expected to understand their students' behavioral and developmental stages while also mastering content area knowledge and methods of teaching, pedagogy, technology, and more. Overall, teacher education programs in the United States give new educators a strong

foundation in those areas (American Association of Colleges for Teacher Education & Modoc Press, 2004). PD however, is an effective way to provide educators with constantly updated information that improves teaching skills, which in turn directly affect students' outcomes.

It is almost impossible to deny that education is in a constant state of change. Changes occur in many areas, including local, state and federal regulations, curriculum and in the students themselves. In today's continually changing world, educators must be equipped to serve and to support these elements of the educational system, as they also affect the learners, parents, communities and the institutions themselves. Ever-changing student demographics and achievement requirements require educators to continue seeking paths that help them reach their K-12 students (Glatthorn & Fox, 1996).

Education reform is one of many mechanisms that is moving educators to seek avenues of PD. In 2001 the No Child Left Behind Act (NCLB) required all educators to be properly certified, as well as be highly qualified in their subject matter (Ashby, 2007). The federal government imposed this reform. Educators use forms of PD as one way to meet the requirement of NCLB.

Many teacher preparation programs do not require their students to understand and to know about research-based teaching methods for certification purposes, so educators need a PD setting to gain that knowledge (American Association of Colleges for Teacher Education & Modoc Press, 2004). Under NCLB, principals and superintendents are responsible for ensuring that educators adopt teaching methodologies which help students to reach the high standards

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established by each state; they frequently use PD as a tool to ensure that educators are prepared to meet student's needs.

Educational reforms through NCLB has had a direct impact on PD for educators. At the state level, PD is often an ongoing requirement for keeping a teacher certificate valid. For example, in 2004, the Arizona State Board of Educators accepted a proposal by superintendent Tom Horne that all educators be prepared to teach English Language Learners (ELLs). The Arizona Department of Education declared, "from and after August 31, 2006, an SEI, ESL or bilingual endorsement is required of all classroom teachers, supervisors, principals and superintendents" (para. 1). Since the training required for these endorsements was not contained in most teacher preparation curricula, educators needed to seek the appropriate PD training.

In addition to federal and state educational reforms, regional and local needs also call for the continued development of professional skills. PD plays an important role when educators want to develop new understandings about a specific topic in their local environment. Researchers have shown that it is important that all personnel directly involved with the students' learning process in a school setting must be involved in PD (Liberman & Miller, 2001; Sparks & Hirsh, 1997). Since more and more schools want to reach the needs of their learners, not simply to meet federal and state requirements, schools are working daily in developing a culture of local PD through workshops, formal classes and study groups. Therefore, the interaction of all educational professional through a continuous PD approach is needed.

In the history of education, adaptation to change has been a necessary element to ensure that education itself is evolving with current demands and needs. PD has been a constant element in helping educators' keep up with the changes while fulfilling their commitment to a profession of lifelong learning.

Effective Professional Development for Educators

In K-12 education, the main goal of effective PD for educators is to improve students' learning. Effective PD is a continual learning practice that promotes collaboration and cultivates the growth of the professional. Effective PD incorporates adult learning methodologies and provides opportunities for job-based applications. It is a combination of cumulative steps that starts with theory (lecture), hands-on application (modeling), feedback and coaching (mentoring) and periodic review with curriculum adjustments (evaluation). The combination of these steps provides the basis for an effective PD environment (Blandford, 2000; Leven, 2003; Male, 1997; Speck & Knipe, 2005).

PD programs are the place for K-12 educators to nourish the steps mentioned above. PD that focuses on one or just a few of those steps will have little effect on K-12 educators' retention of knowledge and its application (Speck & Knipe, 2005). PD specialists agree that it is important for PD coordinators to understand the key role of each and every element when planning and establishing PD sections, but there is no agreement on how many times or for how long PD sections should last and where teachers will find time to meet. "In talking with teachers, we found that adequate time for professional development is one of their chief concerns" (Speck & Knipe, 2005, p. 62). Frequency of PD should vary

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from place to place, depending on the needs of the community, individuals and institution. PD coordinators must know the population that they are serving to best plan and schedule appropriate times and frequency of the meetings (Blandford, 2000; Danielson, 2007; Speck & Knipe, 2005).

When planning a PD session, it is important to select the topic and supporting literature. It is expected that K-12 educators will come to the PD section with basic and foundational theoretical knowledge from previous learning and experiences. Even though theory is important in the process of learning and improving skills, theory itself has a very low impact on these areas (Male, 1997). Discussion of subject theory should represent a small portion of the PD class's overall time. Theory should be presented as a connection to work application, but not the main purpose of the PD sessions (Brookfield, 2006).

In addition to selecting a topic, it is essential that the K-12 educators visualize the new skill being learned. This is called modeling. Modeling is a very powerful way to demonstrate how the application of the new skill should look. "Identification refers to a process in which a person patterns his thoughts, feelings or actions after another person who serves as a model" (Bandura, 1969, p. 214). Through modeling, PD facilitators make the connection from a theoretical idea to a hands-on approach, "observing and collaborating to an extent on the supplementary curriculum also helped teachers realize the importance of hands-on interactivity" (Sharp et al., 2010, p. 119).

Once the PD is prepared, the relationship among key stakeholders in the process is paramount. That is, all parties involved in the PD, from PD coordinator

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or facilitators to the K-12 educators, need to be formally involved. Each person's interests should be addressed and valued during the process of delivering and receiving PD. This element is addressed through continual and mutual interaction between the parties (Lewin, 1947). There needs to be continual feedback and coaching in order to achieve the highest outcome in PD sessions (Males, 1997). To ensure and develop quality PD sessions, coordinators and facilitators need to secure time after sessions to continue working with K-12 educators. This element is of high importance. In fact, the element of coaching (sometimes called mentoring), is mentioned in the eight characteristics of an effective PD facilitator indentified by Hall and Oldroyd (1990), five of which involved relationships between the parties as follows: counselor, motivator, monitor, facilitator and mentor.

Finally, both PD coordinators and facilitators need to understand that professional development is a dynamic program constantly growing and changing to meet specific needs. It needs to have room for change and adjustments. Giving options to K-12 educators is also a good idea when review time occurs. Check points need to be established and dates need to be scheduled to ensure the efficacy of the program: "Teachers feel a greater sense of commitment to change and more interest in participating in professional development when attention is paid to their assessed needs" (Speck & Knipe, 2005, p. 12).

Researchers agree that in order for PD to be effective, it requires a specific formula of activities. These activities range from development to evaluation. First, the leader must create an effective PD program with a specific set of well-

designed interventions aimed at improving students' learning experiences.   Then

he or she must implement the program and be sure to include all key parties in the

process. Finally, feedback and follow-up are critical factors in successful PD

implementation. Missing any of these elements may result in an ineffective PD

program (Bandura, 1969; Brookfield, 2006; Hall & Oldroyd, 1990; Lewin, 1947;

Speck et al., 2005). These key elements will be addressed and incorporated in the

innovation, in the next chapter of this action research.

Chapter 3

METHODOLOGY

This action research study employed a mixed methods approach. To support the implementation of the study, a quasi-experimental, nonequivalent group design (Figure 1) was utilized. The quasi-experimental design (Campbell & Stanley, 1963; Karabinus, 1983) requires both pretesting and posttesting when randomized group formation is not obtainable. The quasi-experimental method is appropriate for this action research study because the intervention is taking place in an educational environment where many uncontrollable factors preside over the classroom, and a random selection of two groups is not possible. In their work, Campbell and Stanley (1963) used symbols (Os and Xs) to help visualize the quasi-experimental design. This study consisted of two groups: a treatment group and a control group. Both groups were given a pretest and a posttest. Following the model presented by Campbell and Stanley (1963), Figure 1 uses an O to represent each test. O_1 stands for the pretest and O_2 stands for the posttest. The X represents the intervention (treatment) that took place as part of the experiment.

Figure 1. Action Research Study Design

Treatment Group	O_1	X	O_2
Control Group	O_1		O_2
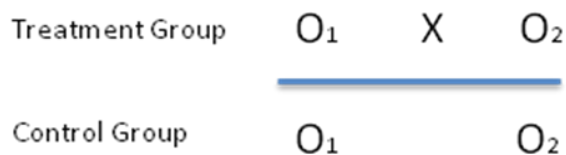
This action research study asked two questions:

1.   How does the implementation of a comprehensive blended training model for adjunct instructors, prior to beginning and during teaching, influence the adjuncts' perception of meeting their students' educational needs?

2.   How does the implementation of a comprehensive blended training model for adjunct instructors, prior to beginning and during teaching, influence the students' perceptions of how their educational needs are being met?

A mixed method evaluation approach (Braakman & Benetka, 2009; Gay, Mills & Airasian, 2009; Gelo, Johnson & Orlando, 2004) was used, with the support of both quantitative and qualitative instruments (Table1). Data were triangulated (Greene, Caracelli & Graham, 1989) to demonstrate a finding or phenomenon through multiple data sources. Quantitative data were collected from pretests and posttests administered to both students and faculty in the treatment and control groups. Additionally, qualitative data from faculty in the treatment and control groups were collected through an open-ended survey question, support group interviews, and classroom observations. Finally, qualitative data from students in the treatment and control groups were collected from open-ended questions on a survey instrument.

Table 1

Assessment Instruments

Participants	Quantitative	Qualitative
PDA	Pre/Post Test (ACKT Survey)	Observation
		Follow up meeting
		Support group meeting
		Pre/Post Test (ACKT Survey)
GDA	Pre/Post Test	Observation
PDS	Posttest (SE Survey)	
GDS	Posttest (SE survey)	

PDA=Professional Development Adjunct Instructors, GDA=Graduate Department Adjunct
Instructors, PDS=Professional Development Students and GDS=Graduate Department Students.
Note1. ACKT stands for Andragogy Content Knowledge Technology Survey (Appendix B)
Note2. SE stands for Students Efficacy Survey (Appendix C)

A Description of the Action Research Innovation

This action research study took place from Summer 2011 through Fall
2011. The professional development training, instructor evaluations, and
classroom observations were embedded in my daily work as a higher education
professional.

Setting. This action research took place in a traditional private university
with two campuses located in the Southwest United States. The first campus has
23 classrooms, and the second one has 33 classrooms. Both campuses were
utilized in this study. The university serves a mixed population of students: 45%

Caucasian, 33% African American, 20% Hispanic, 2% Native American and Asian. On average, the university serves 4,000 students annually.

The university of this study's focus has a college of education divided into three departments: (a) graduate department (GD), (b) undergraduate department (UD) and (c) professional development department (PDD). For the purposes of this study, only participants involved in the PDD and GD were used. The PDD provides master's level courses in a nondegree-seeking program, and the GD provides master's level courses in a degree-seeking program. Both departments use a traditional classroom model of instruction, with face-to-face lectures. Classrooms are equipped with computers, a projector, a DVD player and a VCR. One computer lab, equipped with 20 computers, is available at each campus. The average class size ranges from five to 15 students in both programs (PDD and GD). Courses in both programs follow master's degree academic standards.

Sampling procedures. Faculty were selected using a convenience sample of the whole population (N=22). Convenience sampling is appropriate for an action research design (Chauvet, 2009). The professional development department relies entirely on adjunct instructors to deliver its courses. The PDD has an average of 22 adjunct instructors continually serving the program through all three terms (fall, spring and summer). To ensure a minimum of 15 participants by the end of the study, all 22 adjunct instructors in the professional development department were invited to participate in the intervention, thereby allowing for a potential attrition rate of 30%. However, there was no attrition, so the treatment group consisted of all 22 adjunct instructors. I refer to this group as PDA

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throughout the study. Students (N=51) were selected based on their enrollment in a PD classroom. I visited all classrooms to explain the purpose of the study. All students (N=60) were invited to participate in this study, and 51 returned the survey. I refer to this group as PDS throughout the study.

The control group was selected using a purposeful-convenience sample of instructors actively teaching graduate courses in the Graduate Department (GD). Using a random number generator, I selected a total of 22 instructors from the 50 GD faculty members, allowing me to have equal-size groups. I refer to this group as GDA throughout the study. Students were selected based on their enrollment in a GD classroom. The researcher visited all classrooms to explain the purpose of the study. All students (N=60) were invited to participate in this study, and 43 returned the survey. I refer to this group as GDS throughout the study.

Participants. This intervention utilized five different groups of people in their respective roles as follows: the researcher (myself), PDA, GDA, PDS, and GDS. A detailed explanation of who they are, their role in this action research, and their similarities and differences, are addressed below.

The researcher. For the purposes of this study, I served in three roles: mentor and trainer to the PDA and researcher to the overall study. Based on supporting literature, I developed a training innovation, observed the adjunct instructors when teaching, collected and analyzed data, and reported findings and implications.

In my role as mentor, I prepared lecture material and activities, and I modeled instruction based on the ACKT framework components. I led group

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meetings and provided individual and collective feedback to the PDA. In my role

as the trainer, I presented and modeled the ACKT framework covering the areas

of andragogy and the incorporation of technology into the classroom.

In my role as the researcher I used two lenses to compile all supporting

literature and to develop the ACKT framework, which is the innovative

adaptation in this action research. The first lens was the empiricism theory of

knowledge (Leonard, 2010; Nitzgen, 2008; Parrini, Salmon & Salmon, 2003),

which looks at learning from the perspective of evidence and experience,

highlighting the areas of scientific knowledge that are connected to evidence. The

empiricism theory supports the choice of a quasi-experimental design.

The second lens was the social constructivism theory of knowledge

(Kukla, 2000; Long, 1998; Watson, 2001), which views learning through social

settings. This approach reveals the ways in which groups or individuals interact

in the process of building their social understanding. The social constructivism

theory supports the mixed methods approach used in this action research study,

since the support group meeting and individual meetings sought to comprehend

how adjunct instructors perceived their individual and collective social realities.

These two epistemological theories of learning (Wood, 1998)–empiricism

and social constructivism–were used throughout the implementation of the

training model, the observations of the classrooms, and the analysis of data in this

research. These theories supported my multiple roles as researcher, trainer and

mentor. Furthermore, both learning theories complemented each other to fit the

mixed methods approach used in this action research study.

Adjunct instructors. Two groups of adjunct instructors were used in this study: the PDA treatment group was selected from the PDD and the GDA control group was selected from the GD. To be eligible for participation, adjunct instructors needed to have a minimum of a master's degree and 2 years of experience teaching and practicing in their field of expertise. In the first part of the ACKT survey, adjunct instructors completed five demographic questions.

Frequency for all demographic variables is represented in Tables 2, 3, 4, and 5. Overall, these two groups of adjunct instructors have fairly similar levels of experience in teaching face-to-face courses, with the highest number (31.8%) having taught between 11 to 15 years and the lowest percentage having taught more than 16 years.

Table 2

Number of Years Teaching Face-to-Face Courses

Participant	1-5 years	6-10 years	11-15 years	16-20 years	21-25 years	Total
Treatment group	7 (31.8%)	6 (27.3%)	8 (36.4%)	1 (4.5%)	0	22 (100%)
Control group	5 (22.7%)	6 (27.3%)	8 (36.4%)	2 (13.6)	1 (4.4%)	22 (100%)

In respect to their level of education, the adjunct instructors in the treatment group had a lower percentage of doctorate degrees than did the instructors from the control group (see Table 3). 16 adjunct instructors from the treatment group had master's degrees, representing 72.7% f the total population. Those with doctorate degrees were six, representing 27.3% of the total population. Adjunct instructors from the control group with masters' degree were 10, which

represented 45.5%, of the total population, and those with doctorate degrees were

12, representing 54.5% of the total population.

Table 3

Highest Educational Degree Attained

Participant	Masters	Doctorate	Total
Treatment group	16 (72.7%)	6 (27.3%)	22 (100%)
Control group	10 (45.5%)	12 (54.5%)	22 (100%)

The ranges of participants' ages in this study were comparable, as shown

in Table 4:

Table 4

Ages of the Adjunct Instructors

Participant	31-40 Age group	41-50 Age group	51-60 Age group	61-70 Age group	71-80 Age group	Total
Treatment group	3 (13.6%)	5 (22.7%)	7 (31.8%)	7 (31.8%)	0	22 (100%)
Control group	3 (13.6%)	3 (13.6%)	8 (36.4%)	7 (31.8%)	1 (4.4%)	22 (100%)

The final part of the ACKT survey asked the instructors to note where

they specialized in more than one area of curriculum. In both the treatment and

control groups, the largest number of respondents (13) reported specializing in the

area of elective courses, representing 59.1% of the population, whereas none of

the respondents reported specializing in the areas of physical education (0), art

(0), and foreign language (0) (see Table 5).

Table 5:

Areas of Specialization of the Adjunct Instructors

Area of Specialization	Treatment Group	Control Group
Reading	6	3
BLE/ESL/SEI	7	3
Foreign Language	0	0
Music	0	1
Physical Education	0	0
Art	0	0
Curriculum Instruction	5	7
Gifted	3	2
Science	3	2
Class Management	9	5
Elective	13	13
Math	2	5
Leadership	9	7
Technology	4	0

The importance of the demographic similarities and differences between the two groups of instructors will be discussed further in the section on the limitations of the study in Chapter 5.

Students. In the first part of the SSE survey, students completed three demographic questions. The survey was constructed using multiple-choice

questions about the participants' teaching experience, age group, and area(s) of

course specialization. This survey was created to provide a background view of

the students who were taking courses with adjunct instructors participating in this

study. Frequency for all demographic variables is represented in Tables 6, 7 and

8. The data showed the students were alike in respect to their ages (Table 6).

Table 6:

Students' Age Group

Participant	21-30 Age group	31-40 Age group	41-50 Age group	51-60 Age group	61-70 Age group	Total
Students (Treatment)	17 (33.3%)	10 (19.6%)	15 (29.4%)	7 (13.7%)	2 (3.9%	51 (100%)
Students (Control)	11 (25.6%)	15 (34.9%)	12 (27.9%)	4 (9.3%)	1 (2.3%)	43 (100%)

The majority of the student population had 15 years or less of teaching

experience. See Table 7 for comparison.

Table 7:

Students' Years of Teaching Service

Participant	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	31-35 Years	Total
Students (Treatment)	15 (29%)	12 (23%)	11 (22%)	9 (18%)	3 (6%)	1 (2%)		51 (100%)
Students (Control)	17 (39%)	7 (16%)	11 (26%)	6 (14%)	2 (5%)			43 (100%)

The third demographic variable was the area of specialization in which the

students were taking courses. The majority of the students taking courses with

adjunct instructors from the treatment group were taking courses in the areas of bilingual education and English as a Second Language (31.4%), whereas the majority of the students taking courses with adjunct instructors from the control group were taking courses in the area of Curriculum and Instruction (39.5%).

Table 8:

Areas of Specialization of Courses Taken by Students in Both Groups

Area of Specialization	Students (Treatment)	Students (Control)
Reading	6	1
BLE/ESL/SEI	16	5
Foreign Language	0	0
Music	0	0
Physical Education	0	0
Art	0	0
Curriculum and Instruction	8	17
Gifted	2	1
Science	0	0
Classroom Management	11	2
Elective	1	6
Math	6	0
Leadership	0	8
Technology	0	0

Students in the control and experimental groups enrolled in different programs that met their specific needs, and thus their specializations differed.

The similarities and differences between the students will be further discussed in the section on the limitations of the study in Chapter 5.

The Training Innovation

An effective instructor in today's classroom must have the ability to skillfully handle a mix of technologies as well as to adapt teaching techniques for different learners (adults or children). As part of the treatment protocol, this study provided training for PDA prior to and during the Fall 2011-2012 school year. This intervention blended the concepts of andragogy (Knowles, 1970) and Social Learning Theory (Bandura, 1977) with a framework of technology based on Technology Pedagogy Content Knowledge (TPACK) (Koehler & Mishra, 2008). While the literature demonstrates how these concepts have been used independently, this study's intervention blended all three theories to create a new framework of instruction called Andragogy Content Knowledge and Technology (ACKT).

The purpose of this intervention was to provide training and support, individually and collectively, to adjunct instructors, with the goal of better serving the students who take PD courses from the university. The innovation combined training, support groups and observation/mentoring. It was intended to create an environment where PDA were able to experience personal growth and a high level of confidence when delivering PD courses.

The intervention presented the PDA with necessary information about the specific characteristics of adult learners (andragogy) and crucial technology skills to help them better meet their adult students' educational needs. It was assumed

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that PDAs' and GDAs' content knowledge was already adequate, since they were

hired based on their education and area of expertise.

The intervention timeline (Figure 2) covered two academic terms, Summer

2011 and Fall 2011. The treatment was delivered during the second Summer

2011 session academic term (June 27, 2011 – August 20, 2011) and continued

into the Fall term. Data were collected during the Fall 2011 term (August 22,

2011 – December 10, 2011), when both PDD and GD classes were offered.

Figure 2. Intervention Timeline
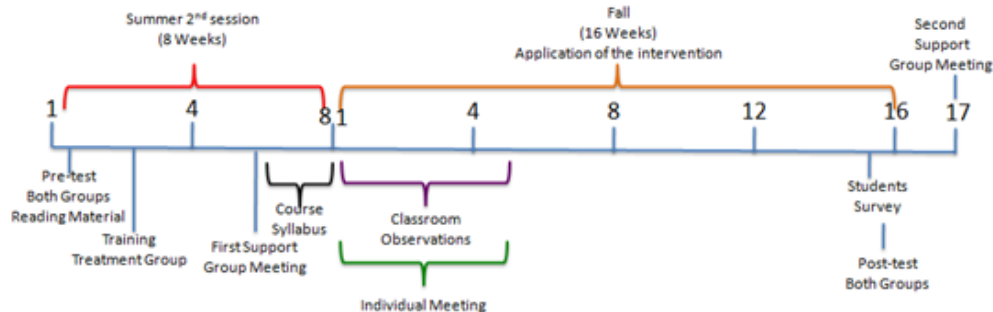
Weeks 1 and 2: Summer Session II (June 27, 2011 - July 8, 2011). The

pretest was administrated to both the PDA and GDA groups. Since adjunct

instructors come to the university on different days of the week, a two-week

period was needed in order to test all participants. PDA instructors received a

package with reading materials to give them background information about the

topics that were covered during training.

Week 3: Summer Session II (July 9, 2011). Every year the university

holds a mandatory meeting for its PD adjunct instructors. The purpose of this

meeting varies, but as the researcher, I used this meeting to deliver the innovation

training on Saturday morning, July 9, 2011, from 9:00 a.m. – 2:00 p.m. I was the

trainer; a training package was given to each PDA who attended the training. The package was composed of a training outline, the training's objectives, and the ACKT Training Guide.

Week 6: Summer Session II (August 6, 2011). The first support group meeting was held on Saturday morning, August 6, 2011, from 9:00 – 10:00 a.m. I was the facilitator of the support group. For more details on the support group, see Support Group Protocol 1 (Appendix B).

Weeks 7 and 8: Summer Session II (August 8 – 20, 2011). PDA instructors submitted their course syllabi to the PDD prior to the first day of class. Syllabi had to implement the ACKT model and were also used as a guide for the observation phase.

Weeks 1-5: Fall Session (August 22, 2011 – September 25, 2011). PDA instructors started to implement and incorporate the ACKT framework in their classrooms. I completed class observations and individual follow-up meetings. A minimum of two observations per night or day were done over a span of 5 weeks to cover all 22 classrooms of the PDA instructors. For more details on observation and individual follow-up meetings, see the Observation Protocol (Appendix C) and Observation Rubric (Appendix D).

Week 14: Fall Session (November 28, 2011 – December 3, 2011). The student efficacy survey was delivered to PDS in PDD classrooms and to GDS in GD classrooms. The survey was delivered and collected by the researcher to ensure a high response rate.

Weeks 15 and 16: Fall Session (December 5 – December 10, 2011).

The posttest was administered to the PDA and GDA instructors; a two-week

period was necessary to test all participants.

Week 17: Fall Session (December 12, 2011). The second support group

meeting was held on Wednesday evening, December 14, 2011 from 5:00 – 6:00

p.m. I led a second support group based on PDA intervention feedback; see

Support Group Protocol 2 (Appendix E).

Innovation Model

This action research innovation included four different components:

a. Training: Design and delivery of one 5-hour workshop that
   incorporated various models and theories from the study's
   literature review.

b. Application: Adjunct instructors' practice with the model.

c. Support Group: Two support group meetings.

d. Observations and Coaching: As the researcher, I observed
   classrooms and had individual follow up section.

Table 9 shows how each of the above components is integrated into the phases of

this study.

Table 9

An Overview of the Innovation

	Phase 1	Phase 2	Phase 3	Phase 4
	Summer Week 3	Summer Week 6	Fall Weeks 1-5	Fall Week 17
Title	ACKT Framework (Training)	Support Group meeting # 1	Observation/ Follow up meeting	Support Group meeting # 2
Objectives	Deliver and promote knowledge of adult learning and technology to support adjunct instructors	Share experiences, issues and accomplishments using ACT framework	Individualized mentoring	Share experiences, issues and accomplishments using ACT framework
Frame	ACKT Framework SLT/Andragogy/TP ACK	SLT Self-efficacy	Andragogy SLT	SLT ACT Framework
Assumption A	Adjunct instructors come with content knowledge	Adjunct instructors confidence level was raise	Adjunct instructors identify personal needs	
Assumption B	When adjunct instructors become aware of the many ways of teaching adults, they can strategize about how to effectively meet K-12 professional needs	When people think systemically they can gain self-efficacy and improve outcome		
Expectation	Construct individual and collective confidence teaching adults	Link new knowledge to experience	Coaching/Feedback	- Open session - Overview of the intervention
Goal	- Raise awareness of adult learning and technology. - Focus on developing skills and ideas when developing lesson plans	- Build support and save environment for growth - Link to real life experiences	Build trust	Collect honest feedback
Class Size	Large Group	Large Group	Individual	Large Group
Location	Computer Lab	Classroom	Classroom	Classroom
Style	- Lecture - Hands-on	- Dialogues - Discussions		- Dialogues - Discussions

Tools and Instruments

This action research study utilized four instruments (Table 10). The Andragogy Content Knowledge Technology (ACKT) survey (Appendix F) and the Student Efficacy (SE) survey (Appendix G) were the quantitative instruments; however, the ACKT survey and SE survey contained open-ended questions, an element of qualitative assessment. The qualitative instruments included Support Group Meetings and Observations.

Table 10

Instruments and Research Questions

Research Question 1: How does the implementation of a comprehensive blended training model for adjunct instructors, prior to beginning and during teaching influence the PDA's perception in meeting students' educational needs?	
Quantitative	Qualitative
Instrument 1: ACKT survey Instrument 2: SE survey	Instrument 3: Support group meeting Protocol Instrument 4: Class Observation Protocol Follow up meeting
Research Question 2: How does the implementation of a comprehensive blended training model for adjunct instructors, prior to beginning and during teaching influence students' perception of how their educational needs are being met?	
Quantitative	Qualitative
Instrument 1: ACKT survey Instrument 2: SE survey	Instrument 4: Class Observation Protocol

Quantitative instruments. This study sought to answer two questions related to participants' confidence levels. The intervention was expected to have an effect on both PDAs' and PDSs' confidence levels. The PDAs' level of

confidence was based on their perceived ability to meet PDSs' educational needs. The PDSs' level of confidence was based on how well they perceived the university course had met their educational needs. Therefore, the two quantitative instruments used in this study (ACKT survey and SE survey) were developed to collect data that would answer both research questions.

Andragogy Content Knowledge Technology (ACKT) survey. The ACKT survey (Appendix F) was used as a pretest and posttest for all PDA and GDA participating in this study. The same survey was administered two times. First, it was administered as a pretest in the first and second weeks of the Summer 2011 term; then it was administered as a posttest in the last two weeks of the Fall 2011 term. Both times, paper survey forms were administered at the university, and PDA and GDA completed the survey on site at the time it was received.

The ACKT survey is a self-assessment tool that measured PDAs' and GDAs' knowledge of adult learners, their sense of confidence when teaching classes for the university, and their knowledge about the use of technology in the classroom. The ACKT survey was based on the TPACK assessment research tool by Schmidt, Baran, Thompson, Koehler, Shin, and Mishra (2009). The survey was modified to fit the needs of this study; it collected demographic information and asked questions organized around seven constructs (technology knowledge, content knowledge, andragogy knowledge, andragogy content knowledge, technology content knowledge, technology andragogy knowledge, and andragogy content knowledge technology), with responses placed along a five-point Likert scale: "*Strongly Agree,*" "*Agree,*" "*Somewhat Agree,*" "*Disagree,*" and "*Strongly*

Disagree." The survey also contained four "*Yes*" or "*No*" questions and one open-ended question.

A Cronbach α Coefficient Measures (CCM) calculation was used to measure reliability for quantitative instruments (Christman & Van Aelst, 2006). The CCM was applied to the whole ACKT survey instrument to ensure that the questions would result in sound data. The result was .81. In general, a .7 or above is considered satisfactory (Nunnally, 1978). The CCM was conducted with each construct, and results ranged from .71 to .86. No construct fell below .7.

Demographics. The original TPACK survey's demographic questions were developed for preservice teachers who represented a different demographic than the adjunct instructors in this study. As a result, the demographic questions (Appendix H) were modified from the demographic questions developed by Schmidt et al. (2009). The questions were changed to more accurately represent my population.

Construct 1. Under the category of technology knowledge, four "yes/no" questions were added from the Hargittai (2005) survey. All four questions were based on digital literacy (Rovoltella, 2008). Digital literacy questions were added for two reasons: first, to cover a variety of questions on technology knowledge, and second, to increase the validity of the survey instrument.

Hargittai (2005) developed a survey based on web-oriented digital literacy, which is a reliable measure since it was validated through application with participants in many different settings and digital literacy tasks. In addition, it was used in a number of national research studies (Hargittai, 2005). Although

just a few elements of the web-oriented digital literacy survey were used, they promoted the ACKT survey's validity. Changes are noted in Appendix I.

Construct 2. The original TACK questions regarding content knowledge were divided into four areas: mathematics, social studies, science, and literacy. For the purposes of this study, those questions were generalized and placed under one heading, content knowledge. That way, the survey allowed adjunct instructors to answer the questions as they applied to their specific areas of expertise. Changes are listed in Appendix J.

Construct 3. All pedagogy knowledge questions from the original TPACK survey were revised. This shift is important since the original questions were based on pedagogy knowledge. This study aims to evaluate adjunct instructors' knowledge and accommodation of adult learners' characteristics (andragogy) based on Knowles' (1970) work while also evaluating their level of perceived self-efficacy (Bandura, 1977) in teaching adults. Changes are listed in Appendix K.

Construct 4. As was done for the questions in Construct 3, all of the original questions regarding pedagogy content knowledge were reduced into one general question about andragogy and content knowledge. This shift was made to reflect areas taught by the institution being researched in this study. The content knowledge in the original survey represented the many areas taught in elementary and secondary education. More specifically, the single question provides an opportunity for adjunct instructors to answer the question on the combined

knowledge construct of andragogy and their areas of expertise. Changes are listed in Appendix L.

Construct 5. To better reflect the content areas taught by the institution being researched in this study, all of the original TPACK questions regarding technology content knowledge were reduced into one general question about technology and content knowledge. The content knowledge in the original survey represented areas taught in elementary and secondary schools, which are outside the scope of this particular study. More specifically, the single question provides an opportunity for adjunct instructors to answer the question on the combined knowledge construct of technology content knowledge and their areas of expertise. Changes are listed in Appendix M.

Construct 6. In this construct, the original questions served as a guide to create the new questions, which represent a combination of technology and andragogy knowledge. Changes are listed in Appendix N.

Construct 7. The original TPACK questions focused specifically on the content areas of mathematics, literacy, science, and social studies. All of these categories were replaced with two more general questions to reflect areas taught by PDA and GDA participating in this study.

In Construct 7, the combination of all elements (andragogy, content, and technology) was used to measure adjunct instructors' sense of self-efficacy when teaching adults (andragogy) their content area of expertise augmented with technology. The modified questions now fall under the category of andragogy content knowledge technology (ACKT). Changes are seen in Appendix O.

Student Efficacy Survey (SE). After much research, no existing self-efficacy scale was found that met the needs of this study. Therefore, a new instrument was designed to meet the specific context and goals of this study. Three resources were used: Banduras's self-efficacy scale (1997), a longitudinal study from Rand Corporation (Amor et al., 1976; Berman et al., 1977) and the Gibson and Dembo (1984) scale. In the end, the SE survey (Appendix G) is primarily based on Bandura's (1977) four areas of efficacy: (a) explicit experience, (b) master knowledge, (c) physiological & emotional conditions, and (d) social influence. All four constructs were ranked using a five-point Likert scale: "*Strongly Agree,*" "*Agree,*" "*Somewhat Agree,*" "*Disagree,*" "*Strongly Disagree.*" One open-ended question was also included. In this survey, the word *confident* was used interchangeably with the term *self-efficacy*.

A CCM (Christman & Van Aelst, 2006) was calculated on the SE survey instrument and the result was .84. I also conducted CCM on each construct and the results ranged from .68 to .87. Of the four constructs, only one fell below .7 at .68. However, since the result was not significantly lower than the .7 satisfactory numbers, the construct was not removed from the survey.

When looking at the details of the SE survey, it is important to consider the unique nature of K-12 teachers' educational needs; earlier, this study discussed how K-12 educators seek PD courses to improve professional skills. These skills are different for each educator, so it is difficult to draw any group-level generalizations. For example, some teachers may seek a PD course in classroom management because they need to improve their discipline skills, while

others may want to improve their procedural skills, and others may need to improve their arrangement skills. All of these skills fall under the general area of classroom management.

Demographic Information. In the SE survey, general questions asked for information about the students' gender, age, level of education, university program of participation and course concentration.

Construct 1: Explicit Experience. Under this heading, the survey listed two prompts regarding explicit experience: "After taking this class, I am confident in my ability to (a) model the content I learned in this class in my own class, and (b) replicate the behavior demonstrated by my instructor."

Construct 2: Master Knowledge. Under this heading, the survey listed two prompts regarding master knowledge: "After taking this class, I am confident in my ability to: (c) teach the lessons and knowledge I learned from this class, and (d) assimilate the lesson and knowledge from this course for my own lifelong learning."

Construct 3: Physiological and Emotional Conditions. Under this heading, the survey listed four prompts regarding physiological and emotional conditions; the first two prompts reflected physiological conditions and the second two reflected emotional conditions: "After taking this class, I am confident in my ability to: (e) teach more effectively in any type of classroom, (f) manage the classroom, (g) establish a feeling of community in my classroom, and (h) facilitate collaboration in the classroom."

Construct 4: Social Influence. Under this heading, the survey listed two prompts regarding social influence: "After taking this class, I am confident in my ability to (i) determine the academic needs of my students, and (j) give students positive encouragement and feedback."

Qualitative Instruments. To best answer both research questions, qualitative assessment instruments were used to collect data from all three groups involved in this research: the researcher, adjunct instructors and students. It is important to understand that this study sought to understand the confidence levels of two different groups, and quantitative data sources alone did not give me enough evidence to establish the desired triangulation. The support group meetings and the observations were the two qualitative sources of data.

Support groups. To answer the study's first question, two support group meetings were recorded for review by the researcher. One meeting was held before the beginning of the school term and after the initial training, at which all 22 PDA attended. The second support group meeting occurred one week after the end of the term, and 17 PDA attended, five of the PDA did not attend the second support group.

As mentioned before, the lens of social constructivism theory seeks an understanding of individuals' and groups' concepts of social reality. The purpose of the support group was to provide the PDA treatment group with an opportunity to debrief with me, as the researcher, as well as with their colleagues about the intervention itself. It was an occasion for adjunct instructors to share their understandings and frustrations with the model as they applied it in their

classrooms. The support group provided an opportunity to review and evaluate the model, as explained by Linhorst: "[Support groups] also can be used to plan programs (e.g. needs assessment, strategic planning) while programs are ongoing (e.g. formative and process evaluations, determining program outcomes), or when they end" (2002, p. 212).

To provide a safe and productive environment, I guided the sessions with four open-end questions to start conversation. The objective for the first support group was to evaluate adjunct instructors' comprehension and application of the model (Linhorst, 2002; Morgan, 1997). The meeting's secondary objectives were developed later, based on adjunct instructors' needs and my observations of the model in action. Although the participation of all adjunct instructors attending the focus meeting was important, not all adjunct instructors attended the second meeting or answered all questions asked by the researcher, during support group discussions.

Classroom observations. The purpose of the observations was to create another source of qualitative data. To answer the study's two research questions, observations were conducted on both the treatment group and the control group. All 22 of the PDA in the treatment group were observed. 20% of the GDA in the control group were observed (five observations). The subjects observed in the control group were randomly selected. To enhance observation in the treatment group, course syllabi provided by the PDA were used for evidence of the usage of the ACKT model in the classroom: "The emphasis during observation is on understanding the natural environment as lived by participants" (Gay, Mills &

Airasian, 2009, p. 366). The syllabus was used in combination with a comprehensive observation protocol (Appendix C) and observation rubric (Appendix D) that was grounded in the ACKT framework to assess the application of training using social learning theory (SLT). Directly following each observation, follow-up meetings took place in which I exchanged feedback with each member of the PDA. Observation notes, the observation rubric, and my field notes helped me to provide feedback about the alignment of the ACKT model with the instructors' personal perceptions. I kept in mind the following description as I took my notes: " Field notes describe, as accurately and comprehensively as possible, all relevant aspects of the situation" (Gay, Mills & Airasian, 2009, p. 367). During each feedback session, I took more field notes of any important information that clarified my understanding, so that later, during data analyzation, I was able to seek confirmation (Guba, 1981) of the collected data.

Data Analysis

A triangulation of quantitative and qualitative methods were used to assess and analyze the impact of this intervention. "[T]riangulation refers to the designed use of multiple methods, with offsetting or counteracting biases, in investigations of the same phenomenon in order to strengthen the validity of inquiry results" (Greene, Caracelli, & Graham, 1989, p. 256). Triangulation (Greene, 2007) in this study involved quantitative and qualitative data collected from observations, PDAs' perceptions, and PDSs' evaluations (Appendix P). These data helped me to understand how the usage of the ACKT framework in the

classroom impacted PDAs' perceptions about meeting their students' needs and

PDSs' perceptions about having their educational needs met. PDAs' efficacy was

measured before and after delivery of the courses, and PDSs' efficacy was

measured after delivery of the courses.

      Quantitative data. To analyze the quantitative data collected from the

two ACKT surveys and from the final SE survey, the results of each survey were

entered into a statistical software package, SPSS. For each construct group on

each survey instrument, a Repeated Measures, Multivariate Analysis of Variance

(RM MANOVA) was used. MR MANOVA was used for each of the construct

groups included in the ACKT survey and for each of the construct groups in the

SE survey. The purpose of the RM MANOVA test was to measure for statistical

at α significance between the mean of each group, PDA vs. GDA and PDS vs.

GDS, on the presurvey with the mean of each corresponding construct group on

the postsurvey ($p \leq .05$). The RM MANOVA applied a descriptive statistic

output to summarize basic information about the pretest and posttest scores on the

ACKT instrument. Cohen's α, also called effect size (Albright, Winston, &

Zappe, 2003), was used to quantify the difference between group means overtime.

This method assisted in understanding whether the difference between the two

means (pre and post) was statistically significant.

      Qualitative data. Qualitative data (observations, support meetings and

short answers from the open-ended question on the ACKT and SE surveys)

collected from all groups, including PDA, PDS, GDA, and GDS, were used in

conjunction with grounded theory methods (Glaser & Strauss, 1967) and a priori

coding (Weber, 1990). Grounded theory is used with qualitative data that is

produced from a methodological process of collecting and analyzing information

with the purpose of creating a logical interpretation of the data (Glaser & Strauss,

1967). A priori coding categories are recognized before the analysis of the

transcript (Weber, 1990). This approach helped make connections between all

sources of qualitative data.

Trustworthiness of Qualitative Data

It is very important to establish validity, and trustworthiness in a mixed

methods approach, especially with qualitative data. As mentioned before,

trustworthiness depends on triangulating the data, "which is the use of multiple

data sources to address each of [the] research questions" (Gay, Mills, & Airasian,

2009, p. 113), when looking for evidence of a single phenomenon. In Guba's

(1981) work, trustworthiness is established through addressing the credibility,

dependability, and confirmability of the data.

First, to address credibility, I organized the complex data of this action

research into what I call *credibility maps*. During this process, I organized

information from each qualitative data source and indicated what each piece of

data might mean. I also linked data that I thought might be related, which

allowed me to trace ideas and findings to their original sources.

Second, to address dependability, I used the triangulation table discussed

previously (Appendix P). I established dependability by continuously reanalyzing

and rereading the data, to confirm or disconfirm any claims derived from those

sources (Erickson, 1986). This action secured an easy audit trail back to the

sources of the data to understand the results and to properly formulate

conclusions.

Finally, to verify that the data was being interpreted correctly

(confirmability), I conducted member checks, which included peer debriefing

with PDA after observations and during support groups. During these member

checks, I made sure to include details and descriptive narratives where

appropriate.

Chapter 4

DATA FINDINGS AND RESULTS

The first three chapters of this dissertation established the research problem,

reviewed relevant scholarship, and explained the action research methodology.

The purpose of this chapter is to present the findings from both quantitative and

qualitative instruments to answer the following research questions:

1. How does the implementation of a comprehensive blended training model

   for adjunct instructors, prior to and during teaching, influence the

   adjuncts' perception (confidence) of meeting their students' educational

   need?

2. How does the implementation of a comprehensive blended training model

   for adjunct instructors, prior to and during teaching, influence the

   students' perception (confidence) of how their educational needs are being

   met?

Subsequently, in Chapter 5, the meaning of each data set and the triangulation

methodology used to answer the two research questions will be discussed.

This action research study employed a mixed methods approach. There

were six data sources collected in this study: the first two sections employ a

quantitative design, and the last four sections utilize qualitative data. The first

quantitative section outlines results from the Andragogy Content Knowledge

Technology (ACKT) survey (Appendix F) given to the Professional Department

Adjunct (PDA) instructors (treatment group) and Graduate Department Adjunct

(GDA) instructors (control groups) both before and after the intervention. The

second quantitative section consists of results from the Students' Self-Efficacy

(SSE) survey (Appendix G) given to Professional Development Students (PDS)

(treatment group) and Graduate Department Students (GRS) (control group) after

the intervention. The third section, based on qualitative data, compiles responses

to an open-ended question from the ACKT. The fourth section, also qualitative,

compiles responses to an open-ended question from the SSE survey. The fifth

section is composed of responses from the two support group meetings with PDA

instructors, and the sixth section shares data from the researcher's classroom

observations.

Response Rate

Survey data was gathered from three different groups: the PDA and GDA

instructors (pre and post ACKT surveys and support group), the PDS and GDS

students (SSE surveys), and the researcher (observation notes). A total of 44

presurveys were given to the PDA and GDA instructors during the first two

weeks of the Summer 2011 session; all 44 presurveys were returned, for a 100%

response rate. A total of 44 postsurveys were given to the PDA and GDA

instructors during the last two weeks of the Fall 2011 session; 43 of these were

returned, for a 98% response rate. All of the returned surveys were used in this

research (see Table 11).

Table 11

Adjunct Instructor Survey Returns by Treatment and Control Group

Adjunct Instructors	# of Pre-survey	# of Post-survey	Response Rate
Treatment Group	22	22	100%
Control Group	22	21	95%
Total	44	43	98%

A total of 120 surveys were given to PDS and GDS students during the last two weeks of the Fall 2011 session; of these surveys 96 were returned, but two surveys were removed because I identified one student who was taking classes from both groups of adjunct instructors (treatment group and control group), so this student's responses were not used. Therefore, 94 surveys were used in this research, for a 78% response rate (Table 12).

Table 12:

Student Survey Returns by PDS and GDS

Participants	ES Survey	Response Rate
PDS	51	54.3%
GDS	43	45.7%
Total	94	100%

Quantitative Data

To report and analyze the quantitative data collected from each survey, I entered the responses into an Excel spreadsheet, which was subsequently analyzed using SPSS. The results were entered by hand because each survey was

administered via paper. Both surveys were designed using a five-point Likert scale, and the responses were entered in the following way: *Strongly Disagree* was entered as "1", *Disagree* was entered as "2", *Somewhat Agree* was entered as "3", *Agree* was entered as "4", and *Strongly Agree* was entered as "5". Following that, I conducted a Repeated Measures, Multivariate Analysis of Variance (RM MANOVA) test.

The purpose of the RM MANOVA test was to determine whether there were differences between the means of each group (treatment and control) for both adjunct instructors and students. I chose to use the traditional significance level, $\alpha = 0.05$, to evaluate the statistical significance of each statistical test. The pre-intervention survey mean of each construct was compared to the corresponding post-intervention survey mean of each construct for the adjunct instructors in the treatment group, PDA, and the adjunct instructors in the control group, GDA. Further, I calculated the effect size (Olejnik & Algina, 2000). An effect size measures the magnitude of difference not merely whether a difference was statistically significant. For the purpose of this study I used Cohen's (1988, p. 280-287) conversion table for eta squared (η^2) where 0.01 is considered to a small within-subjects effect, 0.06 a medium within-subjects effect and 0.14 a large within-subjects effect.

ACKT Survey (Adjunct). The ACKT survey responses were first organized under one main category called Knowledge. However, after entering the responses and examining the results more deeply, I identified one more category, which I called Efficacy. As a result, the ACKT data was organized and

entered by grouping questions into two categories: Category 1: Knowledge, and Category 2: Efficacy (see Appendix Q, ACKT Constructs).

The first category, Knowledge, consists of seven constructs, based on the adjunct instructors' responses in three areas: andragogy knowledge (AK), content knowledge (CK), and technology knowledge (TK). The seven constructs consist of the three basic areas plus permutations of those elements: andragogy content knowledge (ACK), technology content knowledge (TCK), technology and andragogy knowledge (TAK) and andragogy, content and technology knowledge (ACKT).

The seven constructs in Category 1: Knowledge, were used to measure the adjuncts' knowledge of technology, andragogy and content (area of expertise) as three separate elements. These three elements guided my creation of the training for the instructors and formed the basis of the innovation. It is important to note that the training (part of the innivation) provided information on andragogy and technology in relationship to content knowledge but did not teach content knowledge specifically.

The second category, Efficacy, was grouped into four constructs based on Bandura's (1977, 1997) four areas of measuring efficacy. These four constructs, which also utilized a five-point Linkert-type scale, are (a) explicit experience (EE), (b) mastery knowledge (MK), (c) physiological and emotional conditions (PEC), and (d) social influence (SI) (Appendix Q). The four constructs in Category 2: Efficacy, are used to measure the adjuncts' perception (confidence) in meeting their students' educational needs.

The Cronbach α is a frequently used measure of reliability for quantitative instruments (Christman & Van Aelst, 2006). I conducted a reliability analysis of the ACKT survey to measure the internal consistency of the measure.

The result for the pres-intervention survey was .85. In general, a value of .70 is considered a satisfactory level of reliability (Nunnally, 1978). The Cronbach α results at the construct level, Category 1 and Category 2, are presented in Table 13 and Table 14, respectively.

Table 13

Cronbach α Coefficient Measures: Category 1: Knowledge

Constructs (# of Questions)	Cronbach α Coefficient Measures
	Pre-intervention survey
TK (4)	.83
CK (4)	.78
AK (6)	.81
ACK (2)	.75
TCK (2)	.75
TAK (2)	.82
ACKT (3)	.81

Table 14

Cronbach α Coefficient Measures: Category 2: Efficacy

Constructs (# of Questions)	Cronbach α Coefficient Measures
	Pre-intervention survey
EE (4)	.66
MK (4)	.70
PEC (4)	.71
SI (3)	.69

ACKT Survey – Category 1. To answer Research Question 1 (*How does the implementation of a comprehensive blended training model for adjunct instructors, prior to beginning and during teaching, influence the adjunct instructors' perception (confidence) in meeting their students' educational needs?*) a RM MANOVA was performed to assess the influence of the intervention on adjunct instructors' technology knowledge (TK), content knowledge (CK), and andragogy knowledge (AK), as well as on the combinations of these elements (ACK, TCK, TAK and ACKT), both before and after the treatment.

The RM MANOVA for both groups (treatment vs. control) was not significant, multivariate $F(7, 25) = 1.07$, $p \leq .41$. By comparison, the RM MANOVA for time of testing (pre vs. posttest) was significant, multivariate $F(7, 35) = 6.60$, $p \leq .001$, with a large within-subject effect size, partial $\eta^2 = 0.57$ (Olejnik & Algina, 2000). Follow-up univariate ANOVA showed TK, AK, TCK, TAK and ACKT variables differed significantly over time. In addition, the RM MANOVA for the groups x time of testing interaction was significant, multivariate $F(7, 35) = 3.76$, $p \leq .004$, with a large effect size of partial $\eta^2 = 0.43$. This interaction effect means that the two groups' scores changed at different rates from the pre- to the post-intervention assessment. The means in Table 15 show the treatment group's scores changed at a greater rate from pre- to post-intervention assessment than did the control group's scores.

Table 15:

Means and SDs for Pre- and Post-Assessments for Knowledge

| | Control Group GDA Instructors | | | | Treatment Group PDA Instructors | | | |
| | Pre-test | | Post-test | | Pre-test | | Post-test | |
Variable	M	SD	M	SD	M	SD	M	SD
TK	3.70	0.78	3.80	0.59	3.63	0.84	4.23	0.40
CK	4.77	0.33	4.76	0.35	4.82	0.23	4.80	0.26
AK	4.46	0.35	4.52	0.28	4.30	0.47	4.78	0.20
ACK	4.38	0.74	4.33	0.66	4.27	0.55	4.23	0.61
TCK	4.14	0.73	4.38	0.67	3.91	0.97	4.25	0.53
TAK	4.29	0.64	4.33	0.58	3.81	0.96	4.36	0.49
ACKT	4.06	0.78	4.13	0.65	3.89	0.71	4.20	0.32

TK=technology knowledge, CK=content knowledge, AK=andragogy knowledge, ACK=andragogy content knowledge, TCK=technology content knowledge, TAK=technology andragogy knowledge, ACKT=andragogy content knowledge technology, M=mean, and SD=standard deviation.
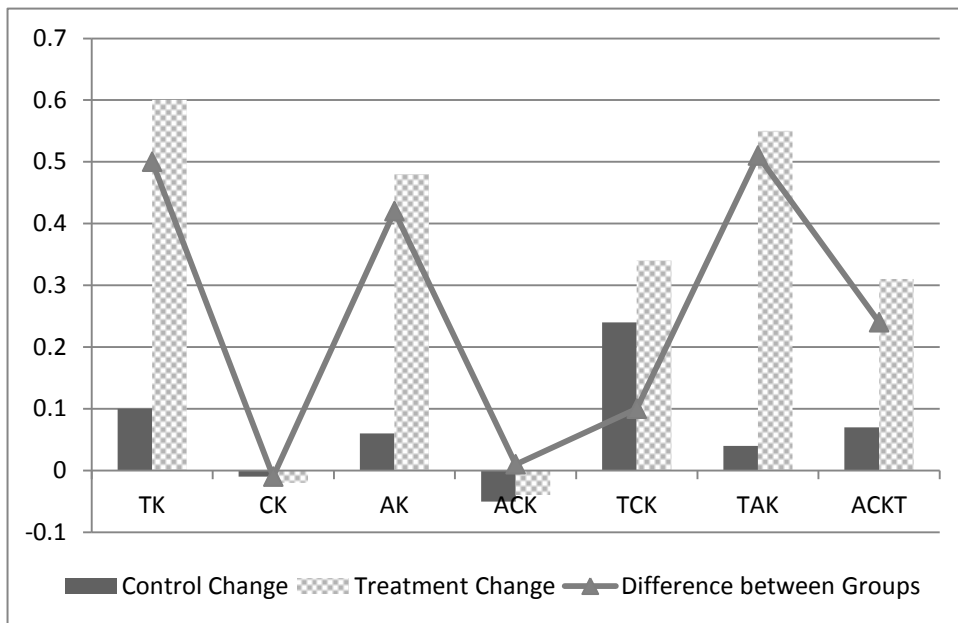
Figure 3. Difference Between Category 1 Means

Follow-up univariate ANOVA showed that TK, AK and TAK were significantly different for the two groups over time (see Figure 3).

ACKT Survey – Category 2. A RM MANOVA was also performed to evaluate the difference of the intervention on adjunct instructors' confidence as measured by the following variables: explicit experience (EE), (mastery knowledge (MK), physiological and emotional conditions (PEC), and social influence (SI). The RM MANOVA for the two groups (treatment vs. control) was not significant, multivariate $F(4, 38) = 0.97$, $p \le .44$ in the presurvey. By comparison, the RM MANOVA for time of testing (pre vs. posttest) was significant, multivariate $F(4, 38) = 9.94$, $p \le .001$, with an large effective size of partial $\eta^2 = 0.51$ (Olejnik & Algina, 2000). Follow-up univariate ANOVAs showed all four dependent variables differed significantly from pre- to post-intervention assessments. Additionally, the RM MANOVA for the group x time of testing interaction was significant, multivariate $F(4, 38) = 5.16$, $p \le .002$, with a large effective size of partial $\eta^2 = .35$. This interaction means that the two groups' scores changed at different rates from the pre- to post-intervention assessment. The means in Table 16 show the treatment group's scores changed at a greater rate from pre- to post-intervention assessment than did the control group's scores.

Table 16:

Means and SDs for Pre- and Post-Assessments for Efficacy

| | Control Group GDA | | | | Treatment Group PDA | | | |
| | Pre-test | | Post-test | | Pre-test | | Post-test | |
Variable	M	SD	M	SD	M	SD	M	SD
EE	4.15	0.41	4.27	0.39	4.14	0.49	4.44	0.29
MK	4.32	0.37	4.36	0.33	4.08	0.54	4.49	0.27
PEC	4.27	0.46	4.35	0.29	4.20	0.49	4.51	0.28
SI	4.29	0.49	4.41	0.41	2.27	0.49	4.70	0.27

EE=explicit experience, MK=mastery knowledge, PEC=physiological and emotional conditions, SI=social influence, M=mean, and SD=standard deviation.
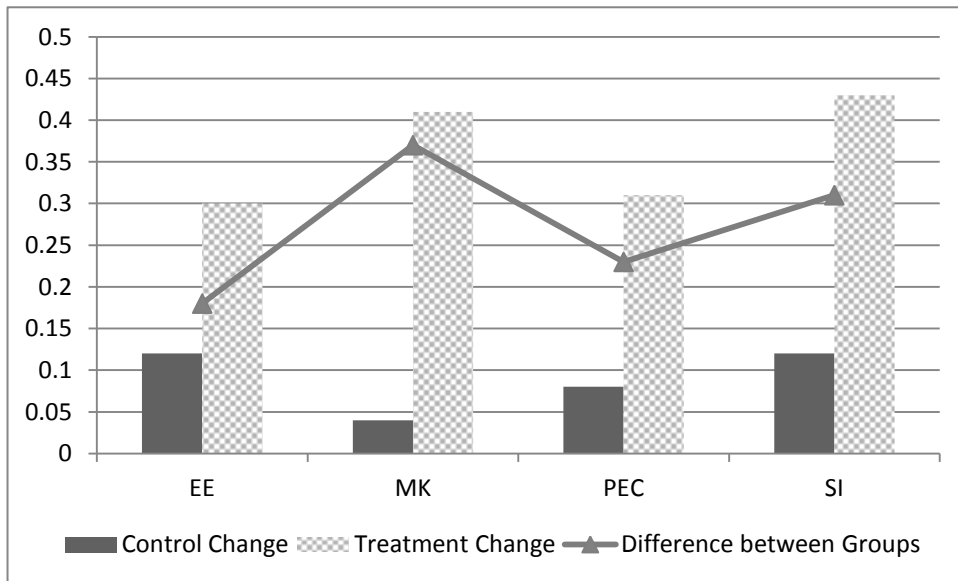
Figure 4. Difference Between Category 2 Means

Follow-up univariate ANOVAs, showed that the means of MK, PEC and SI changed at different rates for the treatment group as compared to the control group (see Figure 4).

The results support the conclusion that implementing a comprehensive blended training model for adjunct instructors influences the instructors' perception (confidence) of meeting their students' needs. The data specifically shows that for Category 1 the treatment group improved in areas of TK, AK, and TAK to a greater extent than the control group. And for Category 2 the treatment group improved in the areas of MK, PEC, and SI to a greater extent than the control group.

Student Self-Efficacy Survey. The Student Self-Efficacy (SSE) survey responses were organized in one category, Efficacy, it was grouped into four constructs based on Bandura's (1977, 1997) four areas of measuring efficacy, the letter "S" was placed in the front of each construct to differentiate from the adjunct instructors. These four constructs (Appendix R), which utilized a five-point Likert scale, are: explicit experience (SEE), mastery knowledge (SMK), physiological and emotional conditions (SPEC), and social influence (SSI).

These four constructs, which fall under the only category of Efficacy, are used to measure the students' perceptions (confidence) about how well their educational needs were met by a specific adjunct instructor and or course. Because this intervention had two groups of adjunct instructors, a treatment group and a control group, the purpose of collecting data from students was to determine whether there was a difference between students' confidence (perception of their educational needs being met) when taking courses from adjunct instructors in the treatment group as compared to students' confidence when taking courses from adjunct instructors in the control group.

The Cronbach α analyses for the entire group of students show an α = .91.

In general, a confidenc .70 is considered a satisfactory level of reliability

(Nunnally, 1978). The Cronbach α analyses of the four constructs are presented

in Table 17.

Table 17:

Cronbach α SSE Survey Category 1: Efficacy

Constructs (# of Questions)	Cronbach α Coefficient Measures
SEE (2)	.82
SMK (2)	.77
SPEC (4)	.85
SSI (2)	.84

SSE Survey – Category 1. To answer Research Question 2 (*How does the*

implementation of a comprehensive blended training model for adjunct

instructors, prior to, beginning and during teaching, influence how the students'

educational needs (confidence) are being met?) an RM MANOVA was

performed to evaluate the difference of the intervention on students' efficacy

measured by the following variables: student explicit experience (SEE), student

mastery knowledge (SMK), student physiological and emotional conditions

(SPEC), and student social influence (SSI), (Table 18). The RM MANOVA for

groups was significant, multivariate $F(4, 89) = 3.50, p \leq .011$; with a very small

effect size of $\eta^2 = .14$. Note: The previous effect size is a result of a between-

subjects effect analysis, not a within-subjects effect analysis such as those that

were performed in the earlier analysis of adjunct faculty members' data. As a

result, the effect size metric differs for this analysis because it is based on η^2, not partial η^2. Further, the between-subjects' metrics stipulate that a small effect size is .20, a medium effect size is .50, and a large effect size is .80 (Cohen, 1969).

Table 18:

Means and SDs for Student-Assessments for Efficacy

Variable	Students who took classes from Adjunct Instructors in the Control Group		Students who took classes from Adjunct Instructors in the Treatment Group	
	M	SD	M	SD
SEE	4.00	1.01	4.54	0.56
SMK	4.29	0.72	4.66	0.46
SPEC	4.28	0.84	4.55	0.52
SSI	4.35	0.77	4.73	0.47

SEE=student explicit experience, SMK=student mastery knowledge, SPEC=student physiological and emotional conditions, SSI=student social influence, M=mean, and SD=standard deviation.
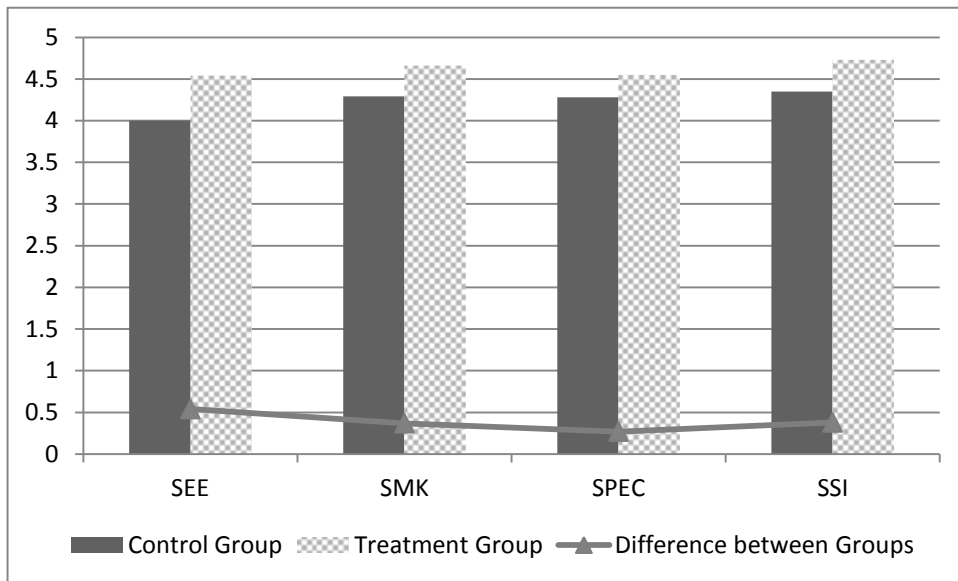
Figure 5: Difference Between Student Means

Follow-up univariate ANOVAs showed SEE, SMK and SSI were significantly different for the two groups see Figure 5.

The results support the conclusion, that implementing a comprehensive blended training model for adjunct instructors influences the students' confidence level in how the students' education needs are met. The data specifically shows that students taking courses with adjunct instructors from the treatment group improved in areas of SEE, SPEC, and SSI to a greater extent than the control group students.

Qualitative Data

Three types of qualitative data were collected: (a) open-ended survey questions, (b) transcriptions from support group interviews, and (c) researcher observations. Open-ended questions were included at the end of the ACKT Survey for the adjunct instructors in both the pre and postsurveys and at the end of the SSE survey. Two support group interviews were administered with the treatment group only. The researcher conducted classroom observations with the entire treatment group and with 20% (N=22) of the control group, representing five classroom observations for the control group. For the purpose of this action research and to maintain confidentiality, participants (adjunct instructors and students) are referred to using pseudonyms.

Level 1 Analyses. Each qualitative data source was collected throughout the study. Data was transcribed and coded during the intervention. The first segments of data were generated from the presurvey open-ended question; for this segment the coding system used was the grounded theory method (Creswell,

2009; Glaser & Strauss, 1967). Creswell's (2009) coding system to name common categories sorted by codes and distinctions among the participants was also used in the first segment of data coding. Grounded theory was used to interpret participant survey data, where I read through the data five times. The first time was to get familiar with the data and assure it was accurate. The second and third times, I reflected on the data. By the fourth and fifth times, I began to look for patterns. After reading the data five times, I recognized some patterns with the identification of codes. Following Creswell's rationale for this method, "The process data analysis involves making sense out of text … moving deeper and deeper into understanding the data" (p.183), after codes were identified, I placed them into categories.

Level 2 Analyses. Segment two data (support group interviews, researcher observations and postsurvey data) followed the grounded procedures described above. Additionally, I applied *a priori* coding (Weber, 1990); in this type of analysis, codes and categories discovered during segment one data coding/analysis were applied. In the a priori coding system, the categories are recognized before the analysis based on theory and prior knowledge is completed, which was an appropriate approach due to the awareness of categories. Therefore, the knowledge, including categories and codes, from level one analysis were brought to level two. I also allowed for open coding when new ideas were discovered.

ACKT Survey Open-ended Question. To answer the Research Question 1 (*How does the implementation of a comprehensive blended training model for*

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adjunct instructors, prior to, beginning and during teaching, influence the adjunct

instructors' perception (confidence) in meeting students' educational needs?) the

ACKT survey had one open-ended question focused on two parts: the first part of

the question asked participants for a description of their usage of andragogy

content knowledge technology (ACKT) when teaching a course, and the second

part of the question asked participants for their perception (confidnce) of meeting

the students' educational needs. These responses were collected when the pre and

postACKT survey was administered.

  Pre-Survey Responses. Of the 22 presurveys collected from PDA

instructors (treatment group), 20 had answered the open-ended qualitative

question, for a 90.9% response rate. Of the 22 surveys collected from the GDA

instructors (control group), 19 had answered the open-ended qualitative question,

providing a response rate of 86.3%.

  All responses were transcribed and uploaded on HyperResearch,

qualitative coding software. Following the steps described above, in respect to

the first part of the open-ended question presurvey on both groups' responses

(treatment and control), three categories emerged: 1) application of technology, 2)

application of expertise, and 3) application of andragogy. After the identification

of the category codes were then aligned with each category (Table 19).

Table 19:

Coding for Presurvey Open-Ended Question First Part

Label: Personal Experience Example (Practical Instruction)		
Category1: Application of Technology	Category2: Application of Expertise	Category3: Application of Andragogy
Codes: Types of technology (Computer, Podcast, Laptops, Software, Internet, Blackboard, Videos) Frequency (Every class, Not much, Little) Value (High, Median, Low)	Code: Area of knowledge	Codes: Personal needs/goals

In respect to the second part of the open-ended question on the presurvey, also for both groups' responses, there was only one category identified: 4) formal assessment. After the identification of the category codes were again aligned with the category (Table 20).

Table 20:

Coding for Presurvey Open-Ended Question Second Part

Label: Evaluation of Instruction	
Category 4) Formal Assessment	Codes: Assignments, Presentation, Tests

Generally, the answers for both groups were similar regarding the length of response and the topic of the response. I noticed that 18 of 20 participants from the treatment group and 15 of 19 participants from the control group wrote

no more than four sentences in their responses. The responses were not very well articulated in either group, and some consisted only of bullet points.

   Prequestion Part 1. An interesting factor in the first part of the question was the participants' apparent focus on the technology aspect of the question; the majority of responses from both groups only addressed the application of technology. It appears that once they answered the technology portion of the question, they stopped answering the other elements of the question. Of the treatment group, 14 of 20 responders, and of the control group, 13 of 19 responders answered how they integrate technology into their teaching. A few examples from this category follow:

   "I use PowerPoint frequently"

   "Have used Blackboard"

   "I use very little or none [*sic*] technology in this course."

Even though responses were addressing the question about technology, the examples above appear to represent a simplistic use of technology in the classroom.

   The element of the question where they were asked to respond to their application of subject matter expertise had 10 of 20 responses from the treatment group and only six of 19 responses from the control group. A few examples from this category follow:

   "I teach special education"

   "Content: Science"

   "In my case Reading"

The answers under the element of application of subject matter expertise were directed to the broadest level of areas, in other words they gave very general view of their content expertise in this part of the question.

When answering the part of the question about adult learning characteristics (andragogy), the treatment group's response rate was seven of 20, and the control group's response rate was four of 19. Some examples from this category follow:

"I believe I give adult learners equal opportunities"

"I have my students apply their prior knowledge"

"I try to give them voice and take advantage of their life experiences"

Adult learning characteristics (andragogy) was the part of the question that surfaced less in both of the participants' responses. It seem that they were not sure what there are.

Prequestion Part 2. Responding to the second part of the question, regarding how they perceive they meet their students' needs, nine of 20 responded from the treatment group, and seven of 19 replied from the control group. Some examples from this category follow:

"Lesson plans are the tool that I use to know if students are able to apply what they learned"

"Discussion, presentation, demonstrating critical thinking skills"

"In our class we also use presentations on topics related to the class curriculum to evaluate learning"

Less than 50% of the responses covered part 2 of the question. The few

participants who attempt to answer this part of the question wrote about

assessment tools used in the course and not their personal perception of meeting

students' educational needs.

When responding to the presurvey qualitative question, both group of

adjunct instructors, treatment and control, showed a similar pattern. They did not

respond to all aspects of the question, and the segments they wrote were very

brief. Strong differences were seen between the treatment group and control

group responses for the postsurvey, which is discussed next.

PostSurvey Responses. Of the 22 postsurveys collected from the

treatment group, 22 answered the open-ended qualitative question, for a response

rate of 100%. Of the 21 postsurveys collected from the control group, 17

answered the open-ended qualitative question, for a response rate of 80.95%.

With the knowledge of the categories and codes developed from the

presurvey level one coding, the postsurvey was based on the a priori coding

system, level two, but also included open coding, since it was necessary to

recognize any new categories that could emerge from the postsurvey responses.

All data was transcribed and uploaded to HyperResearch.

In respect to the first part of the open-ended question for the postsurvey,

one additional category emerged from the responses collected from the treatment

group: Category 5: Interaction of parts of instruction. After the identification of

this new category, codes were aligned. No new categories or codes were

identified from the responses collected from the control group on the postsurvey (Table 21).

Table 21:

Coding Postsurvey Open-Ended Question First Part

Label: Personal Experience Example (Practical Instruction)			
Presurvey			Postsurvey
Category 1: Application of Technology	Category 2: Application of Expertise	Category 3: Application of Andragogy	Category 5: Awareness of the Parts
Codes: Types of technology (Computer, Podcast, Laptops, Software, Internet, Blackboard, Videos) Frequency (Every class, Not much, Little) Value (High, Median, Low)	Code: Area of knowledge	Codes: Personal needs/goals	Codes: Integration of Parts of Instruction, Need for interaction, Benefits of interaction, Personal Reflection on Instruction

In respect to the second part of the open-ended question on the postsurvey, one more category was also identified from the treatment group responses: Category 6: Informal assessment. After the identification of the new category, codes were aligned with the category. No new categories or codes were identified

out of the responses collected from the control group on the post-survey (Table 22)

Table 22:

Coding for Postsurvey Open-Ended Question Second Part

Label: Evaluation of Instruction	
Presurvey	Postsurvey
Category4) Formal Assessment	Category 6p: Informal Assessment
Codes: Assignments, Presentation, Tests	Codes: Body language, Casual conversation/discussion, Environment, After class information

Postquestion Part1. Overall, on the postsurvey, the responses appear to be different between the treatment group and the control group. On the one hand, the treatment group elaborated much more in their answers, consequently increasing the length of their responses and covering most areas of the questions. On the other hand, the control group's postsurvey responses were similar in pattern to their presurvey responses, providing short answers of just a few sentences and not entirely answering all parts of the question. It was noticed that all 22 responses from the treatment group wrote long paragraphs with 10 or more sentences, and all 17 responses from the control group kept the average of no more than four sentences in their responses.

From the treatment group all 22 responders described how they apply technology into their teaching and most importantly, how it relates to the content being taught and adult learning styles. Some examples of this category are:

"I incorporate technology in the journal entry. We have a Blackboard

shell and I activated the journal option, so students can write their

journal entry, I can read and give them my feedback. Students have

the option to make their journal also available to their classmates"

"Technology was used to augment the lesson and to support interaction

among students and me through online discussion and online forum.

After every week's meeting I would post the weekly discussion

question to help students to continue to engage with the content until

we met in the following week. Technology is valuable instrument in

my classroom because it supports the objects and curriculum that I

teach."

"For this lesson I used a collaborative online tool, Wiki. We used the

computer lab and we all connected at the same time; working in pairs,

students were assigned to different parts of the assignments"

In the control group, 15 of 17 described how they use technology, but no

relationship was made with the content and adult learning characteristics. Some

examples from this category for the control group follow:

"I let them [students] use technology if they want"

"Sometimes we use the Internet, YouTube"

"PowerPoint presentations"

Overall the numbers of responses answering the technology part of the

question increased in both groups. However, the adjunct instructors from the

treatment group provided more elaborate responses in responses to technology than adjunct instructors from the control group did.

The element of the question where they were asked to respond to their application of subject matter expertise had 19 of the 22 responses from the treatment group, and eight of 17 responses from the control group. Some examples of responses from the treatment group follow:

"Well, I teach technology courses, they are called elective courses and the courses' main goal is to improve educators' technological skills to impact their work (classroom, schools and districts)."

"I teach bilingual courses and the topics that I cover are very diverse, from cultural differences, disabilities and strategies."

"I teach curriculum and instruction and my specialty is backward design"

Sample responses from the control group were:

"I teach reading"

"Different subjects under special education"

Different from the answers in the presuvey, where both group of adjunct were general or superficial in the application of the subject matter expertise; in the postsurvey the adjunct instructors from the treatment group provided a clear and specific description of their areas and application of the subject matter. Where the answers from the adjunct instructors in the control group followed the same general view seen in the presurvey.

All 22 responses from the treatment group addressed the part of the question about applying their knowledge of adult learning characteristics

(andragogy) to their teaching methods; in addition, 12 of the 22 not only

addressed andragogy but also related andragogy with the content and the

technology used for the lesson. The following quotes are examples of the

treatment group responses for this category:

"When developing assignments I think about the objects of the course,

based on the syllabus. I give my adult students choices, and I need to

show the application in real situations/scenarios. I need to give

students time to share their own experiences and beliefs. This time I

asked them to send me the assignment before class, via e-mail, that

way I was able to give them quick feedback"

"In the first two meetings I give students the opportunity to choose what

formal assignment they want to do. Since they are adult learners a

mutual respect among students and me must be created in the

classroom. I also try to guide and mentor as many students as I can."

"I gave students choices in their assignment. I created a Wiki where all

students had access to some topics that I had suggested, but they could

also provide their own topics. Each student added his or her names

beside the topic title. I made sure to explain the practical application

of the topics and its relevance, in addition to supplement the lecture

with students' personal experience and input."

The control group's response rate for this part of the question was four of

17. Some examples in this category for the control group follow:

> "We have a lot of discussion in class where they share their success and
> frustrations"

> "They don't see me as the 'professor' they see me almost as equal, there is
> a mutual respect"

Adjunct instructors from the treatment group spanned their answers providing details in application of the adult learning characteristics. In addition they incorporated technology and content knowledge. Where the answers from the adjunct instructors in the control group continue to be a limited and the answers do not indicate that the adjunct have deep knowledge of the adult characteristics.

In the new category, awareness of the parts of instruction (content, technology and andragogy), was articulated by the treatment group in nine of 22 responses. Since this category was only seen in the treatment group, the following are examples of responses from this group:

> "I have been working with adults learners for a few years now, and I never
> thought about the complicated relationship between what I teach, the
> learner themselves (in this case, the adults), the tools that I use,
> including technology and the most important thing, how do I know
> (perceive) that the students learned what they were supposed to learn
> and that I fulfill their educational expectation and needs."

> "This past term I had the opportunity to look in-depth [at] how I prepare
> and how I deliver the content that I teach. Two elements have been
> brought to my attention, technology and adult learning theories
> (andragogy). I especially took the time to make sure I was

incorporating and creating an environment that supports and nourishes

learning and development for adults"

"We all benefit from this relationship between the content, students

characteristics, and the 'need' for technology. Understanding that

technology can support your instruction at the same time that it

simplifies the interaction between teachers, students and assignments,

we can be more efficient and focus on what is important for the

learner. Knowing upfront these elements, I think I was able to guide

my students through my lessons better and engage them in the

content."

Adjunct instructors in the treatment group appear to be mindful of incorporating

andragogy, content knowledge and technology in their lessons. The awareness

seems to help adjunct instructors to be prepared to reach students' educational

needs.

Postquestion Part 2. Responding to the second part of the question

regarding how the instructors perceived they met their students' educational

needs, all 22 responses from the treatment group addressed this question, and 10

of the 22 answered how they perceived they met their students' needs not only

through a formal assessment but also through reflection on other factors such as

environment and informal feedback. Some of the examples in this category for

the treatment group follow:

"I believe now I have a much better perception of meeting my student's

educational needs than before. I don't think I even thought that I was

not meeting them … Now, during my lectures I ask students questions

that helped me to know if they are learning and also help students to be

engaged during class. I also continually am monitoring students

through participation, body language and initiative. Students are

required to write a journal every class meeting and their need to reflect

on their educational needs as well as understanding and application of

the knowledge"

"In the past I gave just one assignment to the class, and they only had to

send the assignment to me via e-mail. Now I give multiple

opportunities for students to show me that their educational needs were

met. Before the end of every meeting I reserve 15 to 20 minutes for an

informal assessment of the class, so students and I can talk about what

we learned and how we can apply the new knowledge. I also use this

time to clarify any misunderstandings. I take notes and I write a recap

of the week and send it to the class in e-mail. I still have a formal

assessment, such as written paper, but now students' deadline is one

week before the end of the term, so I have time to read and give them

feedback, in addition to open discussion in class"

"Another piece that I am more careful about is to have evidence about

students' learning. I have been asking students more questions during

class, so an informal way of knowing if the course and I are fulfilling

students' expectations. I also incorporated more discussions and

'questions and answers' at the end of the class. In a more formal way I

added an open note and open book final that is done one week before

the end of the course, so I can go over and see if students were able to

articulate the content of the course in their own words. The final is a

reflection paper, and the open book and open notes concept are to

show students that the notes that they took are a rich resource."

In the control group response rate for this part of the question five of the

17 answers indicated how they know they met students' educational needs, as

exemplified by some of their responses:

"Students need to write a three- to five-page paper and create a

PowerPoint. They have 5 to 10 minutes to present during the last day

of the class"

"Since I teach SEI classes, they have to create three lesson plans

throughout the weeks, using the SIOP model"

"I hope they are learning; every week they have to respond to 3 questions

at the end of each chapter, for points and a project to implement in

their classrooms"

Answers from the adjunct instructors in the treatment group showed a personal

commitment of meeting students' educational needs and different ways of

knowing how they would meet them. Responses from the adjunct instructors in

the control group continue to look only in formal forms of assessment as ways of

knowing that students' needs were being met.

As mentioned previously, noticeable differences emerged in response

length and quality between the treatment group and the control group on the

postsurveys. The treatment group provided more detail and clarity in their responses as compared to the control group. Similar differences were seen between the treatment group and control group for the student surveys, which will be discussed in the next section.

SSE Survey Open-Ended Question. To answer the Research Question 1 (*How does the implementation of a comprehensive blended training model for adjunct instructors, prior to beginning and during teaching, influence the students' perception (confidence) of how their educational needs are being met?*) the SSE survey had one open-ended question composed of two parts: the first part of the question asked participants if they felt confident that the knowledge gained from the course could be applied to real-life situations. The second part of the question asked participants for their perceptions of having their educational needs being met by the course/instructor. These responses were collected one time, during the last week of the Fall 2011 term, from students who took courses with instructors from the treatment group as well as from students who took courses with instructors from the control group. To facilitate understanding students who took classes with adjunct instructors from the treatment group are called PDS and students who took classes with adjunct instructors from the control group are called GDS.

SSE Survey Responses. From the 51 surveys collected from PDS, 46 answered the open-ended qualitative question, for a response rate of 90.20%. From the 43 surveys collected from GDS, 37 answered the open-ended qualitative question, for a response rate of 80.04%.

90

All responses were transcribed and uploaded on HyperResearch following the steps of grounded theory described previously. In respect to the first part of the one-time open-ended question to students who took courses from treatment and control adjunct instructors, there were three categories identified: 1) internal confidence, 2) concrete confidence, and 3) external confidence. The identification of the categories codes were then aligned with each category (Table 23).

Table 23:

Coding for One Time Open-Ended Question Student Survey First Part

Label: Efficacy		
Category 1: Internal Confidence	Category 2: Concrete Confidence	Category 3: External Confidence
Codes: Level of understanding (low, high or median)	Code: Application (doing)	Codes: Results, Feedback

In the second part of the question, two categories were identified: 4) basic class expectations, and 5) relevance to student. The identification of the categories codes were then aligned with the categories (Table 24).

Table 24:

Coding for One Time Open-Ended Question Student Survey Second part

Label: Course Assessment	
Category4: Basic Class Expectations	Category 5: Direct Relevance to Student
Codes: Lecture (bad, median or good), Feedback (bad, median or good), Organization (well or not), Material, Practical application	Codes: Personal/Individual needs

All together, 83 participants from both groups of students answered the open-ended question; of these, 64 were coded under Category 1, internal confidence, and 37 (57.81%) of those were from PDS, whereas 27 (42.19%) were GDS. The following are some examples from the responses identified under this category:

"While this course has certainly better prepared me for my future in the classroom, I would be kidding myself to think I'm remotely ready to apply all that I've learned into my own classroom at this point."

"I thing I can apply what I learner in this course."

"Very confident that I can go into a classroom and apply the techniques."

Within this category, there were identified three levels of internal confidence (low, median or high). The 37 responses from students who took classes with adjunct instructors from the treatment group two (5%) were low, one (3%) was median and 34 (92%) were high. The 27 responses from students who took classes with adjunct instructors from the control group two (7%) were low, three (11%) were median and 22 (81%) were high.

Both group responses showed students' internal confidence level. Overall, students taking courses from adjunct instructors in the treatment group reported a higher internal confidence level as compared to students taking courses from adjunct instructors in the control group did.

Answers coded under Category 2, concrete confidence, were a total of 15, and of those, nine (60%) were from PDS, and six (40%) were from GDS. Some examples under this category follow:

"I already applied many of the strategies this course has provided."

"I am applying it by using the different teaching strategies I learned in
here back to my class."

Even though responses showed that both groups of students were already applying knowledge, the students who took classes from adjunct instructors in the treatment group had a slightly higher response rate.

Nine answers were coded under Category 3, external confidence, and six (66.7%) of those were from PDS, whereas three responses (33.3%) were from GDS. The following are some examples from this category:

"My principal observed me a few weeks ago and told me that I have
improved my classroom management."

"I have tried some strategies and seems my own students like it."

Both groups of students included in their responses that they had received external feedback supporting their confidence. A higher percentage of students who took classes from adjunct instructors in the treatment group reported receiving external feedback.

Sixty-one answers were coded under Category 4, basic class expectation, and 38 of those (62.3%) were from PDS; the other 23 (37.7%) were from GDS. Some examples from this category follow:

> "The course had good content and the instructor prepared good lectures."

> "Relevant material, clear directions and steps, good use of technology and techniques."

The responses to Category 4 cited various ways that the class met students' expectations. A higher percentage of students from the treatment group responded that their class expectations were met as compared to the control group.

In the final Category 5, direct relevance to student, a total of 27 answers were coded, and 17 (62.96%) of those were from PDS, while 10 (37.04%) were from GDS. To illustrate, the following is an example in this category:

> "I took this course because I will be a future principal in an elementary and/or high school setting and more than theory I want to learn from someone who has done it before, and this instructor reached and exceed my personal expectations."

In this category students claim that the course, instructor or both personally impacted their educational needs. Again students who took courses from adjunct instructors in the treatment group had a higher percentage rate in comparison to students in the control group.

In general, responses from both groups of students were fairly similar. However, students who took classes with adjunct instructors from the treatment

group had a higher response rate in comparison with students who took classes

with adjunct instructors from the control group in the overall categories.

Additionally, students who took classes with adjunct instructors from the

treatment group also expressed two times more often a personal relationship with

the course/instructors than students who took classes with instructors from the

control group. These similarities and differences, as well as interpretations

between the two groups will be discussed in the following chapter.

Support Group Interviews.

Meeting 1. To support answering Research Question 1 (*How does the*

implementation of a comprehensive blended training model for adjunct

instructors, prior to beginning and during teaching, influence the adjunct

instructors' perception (confidence) in meeting students' educational needs?), I

conducted two support group interviews with the adjunct instructors from the

treatment group. The first meeting was held one week after the adjunct

instructors received the training. All 22 adjunct instructors from the treatment

group attended the session, with one adjunct instructor arriving late, which

resulted in a 100% attendance rate for the first session.

The first support group interview had two purposes. The first purpose was

to engage the adjunct instructors from the treatment group in a dynamic

discussion about the ACKT model–its usage, benefits, barriers–and to gain an

understanding of the model's elements–most importantly, technology and

andragogy. The second purpose of the first support group interview was to give

me the opportunity to evaluate whether adjunct instructors from the treatment

group gained the understanding that I envisioned for this research; in other words, by the end of the first session, did the instructors understand the ACKT model, did the session meet its intended purpose of transmitting the ACKT model, and did I clearly communicate the model's elements and purpose.

I used a level two analysis to evaluate the support group interviews. As in the open-ended question evaluation, grounded theory and a priori coding were used. During the session, I gently directed the dialogue to address three categories: (a) usage of technology, (b) andragogical approaches, and (c) the role of specific content in the ACKT model. In addition to these three categories, after reviewing the transcripts from the first meeting, one more category emerged from the data: (d) organization and support. After the identification of the categories, codes were aligned to the categories (Table 25).

Table 25:

Coding for Support Group Meeting 1

Label: Usage of the ACKT model			
Category 1: Usage of Technology	Category2: Andragogical Approaches	Category3: Role of Specific Content in the ACKT model	Category 4: Organization and Support
Code:	Code:	Code:	Code:
Types	Giving chose	Topic	Material/supplies
When to use	Mentoring	Personal development	Preparation
Frequency	Exploring background	Unique characteristics	Time
Value	experience		Help
	Practical application		

The transcribed data showed that in the first 30 minutes of the support group interviews, adjunct instructors were quiet and waiting for my directions, just answering my questions. However, a substantial increase in interaction among adjunct instructors was noticed in the last 30 minutes of the meeting. These interactions appeared to be very friendly and supportive throughout the rest of the transcribed session. Another characteristic of the interaction among the participants was how they started to encourage each other to articulate their ideas and, when talking about issues, made suggestions to solve them, in addition to articulating new ideas. The following transcript reveals one such interaction between participants when one of them shared her problem in the middle of the meeting:

> Margaret: I have, you know, a problem with technology. Not just integrating into the lesson, but making it works when you need it.
>
> Martha: Have you thought about using your own laptop? That way you are already familiar with the tool, since you are using your own computer. I personally plugged my laptop into the classroom monitor, and the tech support helped me.
>
> Jane: Yes, you can get the correct plugs before class. Don't you teach on Wednesday?
>
> Margaret: Yup.
>
> Jane: I am here also on Wednesday; I can help you. (personal communication, August 6, 2011)

When participants where talking about Category 1, usage of technology, the majority of the adjunct instructors gave examples of how they were thinking about using and incorporating technology into their lessons. Eighteen of the 22 adjunct instructors had plans on how to incorporate technology into their class, whereas the remaining four were not sure how to incorporate technology into their class. The following is an excerpt from the dialogue between those four participants and me when talking about technology:

> Barbara: Last week after our training I started to think about how much I really know about technology. I have to admit, it is not my number one priority. But I am really making an effort to choose one that is meaningful to this course. I am thinking about using Blackboard, since the university supports it and someone can help me to build the shell.
>
> Mary: Me too. After we learned about the benefits, I want to take advantage of it.
>
> Bob: I am overwhelmed. I don't think I understand the expectations. Do I have to pick one [technology]?
>
> Allison: I don't think we have to pick one. Do we… ?
>
> Roberta: No, no you don't.
>
> Allison: I am using the resource list that you [Roberta] gave us, at the training, and reflecting when is the best time to introduce it. We have to remember, some of our students [pause] we may have to guide them through the technology. I am starting with some YouTube videos, Internet. (personal communication, August 6, 2011)

The dialogue above illustrated how adjunct instructors were making meaning for the use of technology. They used the dialogue as an opportunity to clarify expectations and share ideas.

Not all of the transcripts showed participants explicitly considering the Category 2) andragogical approaches. Only nine of the 22 adjunct instructors talked about this category. The following dialogue is an example of andragogical approaches expressed by two participants and myself:

> Roberta: So, let's move to the adult learners' characteristics. You were presented those characteristics and how it is important to apply them when teaching adults. How are you planning to apply [them]?
>
> Keith: As you know, I teach middle school all day long. I have 20 minutes to switch my mind. The advantage is… I will be doing that more consciously. I have to leave behind the manners that I use with the kids. I am planning to keep the adult leaning characteristics list with me during class. Just as a reminder.
>
> Dan: I have a question about andragogy…do I have to tell my students that I am not approaching them in a pedagogical way, but with an andragogical method?
>
> Roberta: No. You don't have to…the same way that we don't tell our elementary or secondary students about pedagogy. We use the knowledge to best reach our students, recognizing that they are unique. Did I answer your question?

Dan: Yes you did. I need to use it naturally, knowing that they like to

have choice, creating an environment that supports respect and

collaboration. (personal communication, August 6, 2011)

Less than 50% of the participants gave input on how they would approach adult

learner characteristics. It seems that they were still looking for more examples

and input from others.

When answering the question that covered Category 3) role of specific

content in the ACKT model, the majority (85%) of the participants tried to

provide input. An example of the participants' interaction under this category is

seen in the transcript below:

Nick: The model gives me flexibility to work on different areas without

compromising any aspect of the content. For example, I teach elective

courses, and they can go from class management to outcome-based

instruction. So, when I am planning, the model provides the frame

necessary to plan [my] meeting effectively, and the use of technology now

has a purpose.

Deby: It is so interesting that you said that the technology has a purpose,

because I see my elementary students using it as second nature… and I

was wondering how it can be used… sort of… in the same way with

adults. I think before I was using just for using, but now I have a rational

reason, like you said, [with] "purpose." Until the next generation comes

along, I feel that we have to tell [them] why we are using it, and the

ACKT model is helping me to speed [up] the process.

Laura: In my case, I teach technology classes [and] in the beginning I

didn't think this model could add anything to my teaching. After our

training and the small group discussion, and hearing from you…my

colleagues…I thought… it is not about me, but about the students. How

do they see technology? How do we weave it throughout the meeting to

support the final goal? (personal communication, August 6, 2011)

The dialogue above review that the adjunct instructors were rationalizing the use

of the ACKT model. It appeared to me that they were gaining a deeper

understanding of the use of model though discussion.

Category 4) organization and support emerged throughout the review of

the transcripts. Adjunct instructors expressed that the ACKT model gave them a

foundation they could rely on. The majority of the participants, 17 of 22, spoke

about how the model was a tool for organization and made them feel more

supported when planning their classes. The following piece from the transcript

mirrors other comments made by participants that were coded under the Category

4 organization and support:

Laura: I am scheduled to teach PowerPoint for teachers next fall, so the

model is helping me to prepare better, like Madeline Hunter. I feel more

organized and with a better plan to use my supplemental material.

Margaret: I really like that I can shoot [an] e-mail or call Roberta and ask

a question.

Pat: This project is giving me, for the first time, peace of mind. I know

that I am organized, I am saving time…I am more efficient. I know what

the expectations are and I also know that I have the institution's support.

Susan: I am enjoying meeting other instructors, learning that I am not

alone…moral support [*laugh*]. (personal communication, August 6, 2011)

The discussion among adjunct instructors showed that they were planning to use

the ACKT model as a template to keep them organized; in another words the

model was giving the adjunct instructors a type of outline for their lessons.

The first support group interview was completed prior to the adjuncts

starting their classes. It promoted discussion among the adjunct instructors and

me. It was also used to share ideas and clarify concepts. Approximately one

week after the semester ended, I brought the adjunct instructors from the

treatment group back for the final support group interview to evaluate their point

of view concerning the use of the ACKT model.

Meeting 2. The second support group interview was held one week after

the end of the Fall 2011 semester. Of the 22 adjunct instructors, 18 attended the

second meeting, which resulted in an 81.82% attendance rate for the second

session. The purpose of the second meeting was to provide a social opportunity

for the participants in the treatment group to voice their experiences during the

intervention and for me, the active researcher, to observe both individual and

group interaction.

I used a level one analysis to evaluate the second support group interview

transcripts. I opened the session by asking the instructors the following question:

"Think back over the past 18 weeks, and what can each of you tell this group about your experience in this research?" All 18 adjunct instructors provided input to the question. After reviewing the transcripts, three categories emerged among the data, Category 1) satisfaction, Category 2) confidence and Category 3) feedback. After the identification of the categories, codes were aligned to the categories (Table 26).

Table 26:

Coding for Support Group Meeting 2

Label: Intervention Experience		
Category 1: Confidence	Category 2: Improvement	Category 3: Feedback
Code: Trust (themselves, me (institution)	Codes: Technology	Codes: Students
Secure/Save	Time	Results
Readiness		Satisfaction (Joy/Happy)

Within the data, the categories in the second support group meeting appeared together instead of separated between sentences/statements. The following is an example of an adjunct's description of her experience where all three categories are present:

Pat: The first thing that I can think about is the outcomes from my students. I have never had so many students talking to me after class, asking for clarification, [and] participation in class. Also, their work was a quality work. I could tell that they didn't reuse a lesson plan. If they were different, I was different. We were all happy to be there. You

know… many times they are here for many reasons, but not because they

want to [be]. Most of the time they have to [be in class]. This time, [I]

really think they want[ed] to be there, as much as I want[ed] to… if you

can believe me [*laugh*]. Second…don't take it in the wrong way. This is

the first time in three years that I received good and useful training from

[this institution]. I knew the expectations, I felt well prepared for my

classes. I could trust that I would receive support. And…I have been

introduced to a model–the ACKT–but not just that, to other instructors

like me. I was walking through the hallway a few weeks ago, and I saw

[Allison], and we ended up helping each other with the copy machine.

This would never have happened if I had not participated in this project.

[Pause] Talking about the copy machine, I do believe that [the institution]

needs to make some improvements; if you are asking us to use

[technology], you need to provide [it]. (personal communication,

December 14, 2011)

Her statement was full of examples and honest feedback. She was able to clearly

state her experience using the model as well as what the model had provided to

her. In addition she expressed her joy of meeting other instructors as part of the

support and personal improvement.

Both support group meetings were a useful way to collect information

about the intervention from the participants' point of view. The first meeting

provided data about the overall understanding of the model, and the second

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session offered a social opportunity for interaction between participants on their personal experiences with the model.

Classroom Observation. A total of 27 classroom observations were conducted during the first four weeks of the Fall 2011 semester. Twenty-two of these observations were from the treatment group, representing 100% of the entire population, and five were from the control group, representing 20% of the entire population (N=22). To report the finds on the classroom observation, a rubric was created (Appendix D).

The rubric was divided in three parts. The first part was dedicated to observing the social interaction in the classroom. The social interaction consisted of three observable types collaboration. Collaboration is defined as the interaction among a group of people to achieve an objective. I looked for interpersonal connections between the participants in the class (adjunct instructors and students) in respect to the learning of the class. The second part of the social interaction was categorized as dynamic. Dynamic refers to the level of engagement observed in the classroom; the vibrancy of the interactions between the adjunct instructor and students and between students in the classroom. The third element of the social interaction was communication. In this rubric communication refers to the clarity of communication observed in the classroom. I was looking for evidence that adjunct instructors clearly communicated the expectations for class activities, as well as the communication between students and adjunct instructors.

A two-point Likert scale was used, and the observations were entered in the following way: *Not observed* (1), and *Observed* (2). The second part of the rubric was dedicated to three observable adult learner characteristics: usage of student's life experience, respectful environment, and practical application. Adult learner characteristics also followed a two-point Likert scale, and the observations were entered in the following way: *Not observed* (1), and *Observed* (2). The third and last part was dedicated to observing the usage of technology in the classroom. This part followed a three-point Likert scale, and the observations were entered in the following way: *Not observed* (1), *Observed but not applied* (2), and *Observed and applied* (3). The definitions for all criteria in each part of the observation rubric can be found in Appendix RR.

Treatment Group Classroom Observations. Under the category of social interaction, the most frequent social interaction observed was communication, with 21 observations, representing 95% of the classrooms. Observing adjunct instructors Dan, I wrote: "Dan clearly stated, in the beginning of the meeting, the objects and goals of the evening. I saw students taking notes". Examples of collaboration were observed 16 times, in 73% of the classrooms. From my observation on Pat class, I wrote: "The activity is engaging students and instructors. They are all providing input a thinking map that they are working on." Likewise, examples of dynamic interaction were observed 16 times, representing 73% of the classrooms. I wrote from the classroom observation of instructor Mary: "This is a very vibrant class, they seem to like being here, students are engaged in the course activities". The relationship between

instructors and students was an important part of the classroom observations. I was able to look for different ways of social interaction. Classroom observation provided information on communication, collaboration and the dynamic between the participants.

Under the category of adult characteristics, creating a respectful environment was the most frequent adult classroom characteristic observed with all (100%) classrooms demonstrating elements of a respectful environment. From my classroom notes, I wrote: "Two students were talking about how they appreciated the instructors' respectful approach to a sensitive topic".   Examples of practical application were observed in 19 of the 22 classrooms, representing 86% of the classrooms. I wrote from the classroom observation of instructor Alma: "Before introducing the topic, Alma started her speech with a field experience example, and then she introduced the subject".   Life experiences were shared in 17 of the 22 classrooms, representing 77% of the population. Observing adjunct instructors Barbara I wrote: "Half of Barbara's class has already shared a personal case with the group. Barbara has asked them to provide their examples as they see fit with the topic".   Adult learners enjoy being part of the classroom activities. I was able to see instructors and students applying adult characteristics through a respectful environment, sharing personal cases and field experience examples.

Observations focused on the last category, technology in the classroom, showed that integrated technology was observed a total of 14 times, representing 64% of the overall classroom sample group. From my observation of Karen's

classroom, I wrote: "Student will be working on a GooglesDoc together, they will create one presentation. Each group is responsible for a few slide of the presentation". Technology in the classroom was observed but not used five times, representing 22% of the population. Observing Alma's classroom I wrote: "I can see the computer in the classroom, but Alma just informed that she will not use it because she forgot her memory card". Finally three of the 22 classrooms did not use technology, representing 14% of the population. For those I asked each instructors about why they were not using technology, two of the three did not prepared anything for that particular meeting but they were planning. The third instructor was still uncomfortable using technology.

Classroom observations indicated that adjunct instructors from the treatment group were using the ACKT model in many different ways. They promoted a collaborative and dynamic environment with a great amount of communication in the classroom. The adult learning characteristics were followed through mutual respect, use of life experience during the lectures and practical application of the knowledge. Finally, technology was observed supporting a productive learning environment.

Control Group Classroom Observations. I observed five classrooms for the control group; this represents 20% of the total population of 22 classrooms. The same procedures and rubric, I used to observe the treatment group's classrooms were followed for the control group. I looked for social interaction, adult learner characteristics and usage of technology.

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Under the category of social interaction, communication was observed all five times, representing 100% of the sample. I wrote from one of my observation' notes: "Instructor gave clear directions and easy steps to follow". Example of collaboration was observed four of the five times, representing 80% of the sample. After observing adjunct instructor Claudia I wrote: "Her class size was very small, three students, she had student working together the entire time". The last category in social interaction was dynamic. Examples of dynamic interaction were observed three of the five times, representing 60% of the sample. Observing adjunct instructor Lucy, I wrote: "Seems like they are working in a project, that may have started a week earlier. Students and instructors are engaged together". I was able to observe social interaction in the control group classrooms through communication, collaboration and the dynamic between instructors and students.

Under the category of adult characteristics, respectful environment was observed through out all five classrooms, representing 100% of the sample group. I wrote in my notes: "Look like adjunct instructors, in general, are able to provide the foundation for a respectful classroom environment". Examples of life experience and practical application were observed three of the five times, representing 60% of the total sample. From my classroom notes I wrote: "Students are sharing their personal classroom management experiences. Comparing each other experiences and application of methodologies". Adjunct instructors were applying adult characteristics in their classroom providing a respectful environment, sharing personal experiences and exercising the application of strategies.

Under the category of usage of technology three did not use any technology, representing 60% of the sample, and two used technology, representing 40% of the sample. The following is an example from my observation's notes reflecting usage of technology by one of the control group adjunct instructors: "She has connected her laptop to the system and she is presenting a chapter of the book with the support of a PowerPoint presentation". The usage of technology was balanced between the five classes that I observed. Adjunct instructors from the control group used or did not use technology.

Overall classroom observations for the control group provided me with a slight view of what adjunct instructors are doing in a regular bases. Even though the sample size was small (n=5), and it is difficult for me to determinate a distinct difference between the observations in the treatment and control group classrooms, they are socially interacting with students, applying adult characteristics and somehow using technology.

Summary

The research findings showed a difference between the treatment group and the control group after the intervention. The quantitative data served as a tool to demonstrate that over time, the treatment group changed at a faster rate than did the control group. In addition, the qualitative findings provided more organic information in support of the intervention. Support groups and classroom observations created an opportunity for the participants and for me to see the ACKT model and its elements in action in a real life setting. Observations in the control group classroom gave me an idea of what is happening in a regular

classroom. All of the data types together answer the research questions. In

Chapter 5 the interpretation of this data will be discussed.

Chapter 5

DATA INTERPRETATION AND DISCUSSION

At this point, it is essential to once again revisit the problem that this

research is trying to solve and my early beliefs related to the problem statement.

The Professional Development (PD) program that I direct, does not offer a formal

training before adjunct instructors start to teach. There are no philosophical or

instructional models to guide them (adjunct instructors) to meet students'

educational needs. My belief is that the success of PD programs is directly

related to the instructors' knowledge of education (knowledge and andragogy),

coupled with the quality of the course (content) and support systems (technology).

This is important because PD programs must consider instructors' deep

knowledge of the subject of the course, their interaction with students and the role

of technology in teaching and learning. The results and findings were statistically

and qualitatively analyzed in Chapter 4, each finding was reported to address the

study problems, and answer the research questions. In this chapter, I present and

overview of the study and my assertions along with a thorough discussion of the

influence of the intervention.

Study Overview

Professional development has been an important tool in the field of

education. Like other professionals, educators need to continue improving their

professional skills. Educators have multiple options when choosing how to obtain

professional development. Some of the most popular professional development

options include in-service training in K-12 school districts, college credit courses,

or degree programs. Although the options may vary, key-determining factors for success in professional development remain consistent. Successful professional development must include adult learning methods and opportunities for job-embedded training. Successful professional development incorporates an arrangement of collective steps that start with theory (lecture), hands-on application (modeling), feedback and coaching (mentoring), and continues with review and adjustments (evaluation). The arrangement of these steps provides the foundation for a successful and therefore effective professional development environment (Blandford, 2000; Leven, 2003; Male, 1997; Speck & Knipe, 2005).

Summary of the Study

This study considered the importance of developing an intentionally designed training experience for instructors to complement their professional development as they serve others. For the study, I developed, implemented and delivered a blended training model to adjunct instructors in a Southwest private nonprofit university. I also conducted an intervention including training, support groups and observations. The intervention was developed to support the four key elements of a successful professional development section (lecture, modeling, mentoring and evaluation). The professional development program took into account the importance of social learning theory (Bandura, 1977), adult learning theory or andragogy (Knowls, 1970) and a framework that focuses on the interaction between the use of technology, pedagogy, content and knowledge (Koehler &Mishra, 2008).

Findings

      This research used two groups of adjunct instructors, treatment vs. control; these two groups helped me with evaluation of the effectiveness of the professional development program. Although adjunct instructors in the control group had some growth, the improvement of the treatment group was significantly greater. Based on the analysis of the data in Chapter 4, it is possible to assert that the comprehensive blended training model used in this study affected those adjunct instructors who received the professional development program and their students.   The following assertions presented here are referring to the treatment group only. The adjunct instructors in the treatment group reported they: (a) were more confident in meeting students' educational needs, (b) understood the need to integrate content expertise with technology and andragogy, and (c) were more aware of students' behavior and academic work. The students who took classes with the adjunct instructors from the treatment group were: (a) more confident in applying the knowledge learned in class, and (b) better related the course content to their and others (collective) educational needs

Discussion of Outcomes for the Adjunct Instructors

      Quantitative and qualitative data, from participants' pre- and post-intervention surveys, support group meeting or online transcripts, and classroom observation notes provided data to answer Research Question 1. There are three assertions that the results support with respect to the adjunct instructors as a result of the intervention: (a) adjunct instructors are more efficacious in meeting students' needs, (b) adjunct instructors understand the need to integrate content

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expertise with technology and andragrogy, and (c) adjunct instructors from the treatment group were more aware of students' behavior and academic work.

The three following assertions helped me to answer Research Question 1 (*How does the implementation of a comprehensive blended training model for adjunct instructors, prior to beginning and during teaching, influence the adjunct instructors' perception (confidence) in meeting students' educational needs?*).

Assertion 1: Adjunct Instructors are more Efficacious

The first assertion is that the adjunct instructors who receive professional development are more confident in meeting students' educational needs. Efficacy can come in many forms from self-efficacy to the support of others. Efficacy is important for an instructor because it helps to ensure the instructor that she is meeting the needs of students by transferring an appropriate level of knowledge to students and providing a safe environment for learning to be successful.

As presented in Chapter 2, self-efficacy is an individual perception of being capable of accomplishing a specific task (Bandura, 1977; Pajares, 1996 & Schunk, 1991) in the context of this study it is about having efficacy to meet students' educational needs. The treatment and control groups were assessed in four areas of efficacy: explicit experience (EE), mastery knowledge (MK), physiological and emotional conditions (PEC), and social influence (SI) (Bandura, 1977; 1997). This is important because by measuring these areas, PD program providers can determine how the PD they are providing influences instructors' efficacy so they are able to help students move forward in their skill development.

The results showed that the adjunct instructors from the treatment group improved their efficacy (confidence level) at a greater rate than the adjunct instructors from the control group in the same period of time. The following three areas the treatment group showed significant improvement MK, PEC and SI in comparison to the control group. Although there was modest growth in the EE area, it was not significant. The individuals in the treatment group who received the intervention through training, support groups and classroom observation, demonstrated an increase in their efficacy when teaching. The quantitative analysis provided statistical evidence of improvement for the treatment group's level of efficacy. The difference between the means for the two groups on the pre- to post-intervention surveys demonstrated that the treatment group increased their perceptions of self-efficacy more than the control group in three areas. For Tte first area, MK, the treatment group increased by 0.41 points and control group increased by 0.04 points. In the second area, PEC, the treatment group improved by 0.31 points and the control group improved by 0.08 points. In the third area, SI, the treatment group improved by 0.43 points and the control group improved by 0.12 points. So, between the pre- and post-intervention survey the treatment group moved from "*agrees*" (4) to closer to *"strongly agree"* (5) in comparison to the control group.

The EE area did not show a difference in improvement for the two groups. The difference between the means of the pre- to post-intervention surveys for the two groups demonstrated that the treatment group increased their perception more than the control group in this area. However, this improvement is not significant.

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The treatment groups' score improved by 0.30 points, whereas the control groups' score improved by 0.12 points. They both continue to respond at the same approximately level, *"agree"* (4). In addition during classroom observation adjunct instructors did demonstrated EE. For example through scenario, simulation or educational role-plays, could have been used. They did have some verbal examples and theories but none acting was used in the classroom to demonstrate EE.

The qualitative data also supported this finding. Examples of this come from adjunct instructors open-ended survey question. Adjunct instructors from the treatment group reported more often that their efficacy increased. The following is an example from one treatment group member's transcript: "I feel that I can reach my students better, that I can influence them through knowledge and new ideas." The members of the treatment group shared their thoughts on their efficacy in discussions at the support group sessions as well. In addition, notes from my observations also support the improved efficacy. I wrote: "It seems that adjuncts and students are very comfortable with each other. They are exchanging personal examples, ideas and engaged in the academic topic." It is important to point out that increased efficacy was supported by three different methods, and all three supported the same assertion that the intervention helped to improve treatment group efficacy when teaching.

I also believe that working together influenced efficacy. In this study, the treatment participants had numerous opportunities to interact with others through the training sessions and in the support group meetings. Bandura (1977) suggests

that knowledge could be obtained through group process and interaction. When the adjunct instructors had the opportunity to share and discuss knowledge with their colleagues, they report more efficacy in meeting students' educational needs. In addition they began to mirror these behaviors and implemented this concept of interaction in their own classrooms. In other words, they brought the same behavior of sharing ideas and providing a social environment for group process, and time for open discussion to their individual classrooms. An example of this is occurs in a conversation with adjunct instructor Mary after observing her classroom. Mary said: "I really like talking with my colleagues, it was so empowering. I want to do the same for my students. [pause] I want to empower learners" (personal communication, August 23, 2011). This behavior created a favorable environment for adult learners, because adult learners bring their life experiences to the classroom and interaction with others give learners the opportunity to share their knowledge with others, supported by the andragogy theory (Knowls,1970).

Assertion 2: Adjunct Instructors Understand the Need to Integrate Content Expertise with Technology and Andragrogy

The data also provided additional information in regards to adjunct instructors' understanding of technology knowledge (TK) and andragogy knowledge (AK), and the combination of both, technology andragogy knowledge (TAK). The pre- as compared to post-intervention survey data indicated that all the adjunct instructors, from both groups, improved in these areas. However the treatment group showed improvement at a greater rate than the control group over

time of testing with a large effect size number of (partial $\eta^2 = 0.57$) and also a large effect size number for the groups by time (partial $\eta^2 = 0.43$). Thus, the intervention likely had a direct effect on treatment group adjunct faculty members' knowledge with regard to technology and adult learning theory. In the following section I discuss the treatment group improvement and the unexpected effect in the control group.

Expected Improvement. The second assertion is that treatment group adjunct instructors understand the need to integrate content expertise with technology and andragogy. I will first report my reflections on the results with respect to technology. These results bring me back to the framework chosen for this intervention. The technology pedagogy content knowledge (TPACK) framework has a strong foundation in technology, and more technology has been a part of instructional delivery in the classroom. In proposing a new, hybridized term that reflects the adult learner, andragogy content knowledge technology (ACKT), I tried to keep the same emphasis on technology that the TPACK framework offers. To my understanding, the emphasis on technology augments and supports the content delivery and the instruction method. This believes is supported by the National Education Technology Standars (NETS). The standards are also viewed as performance expectations for educators, which guides educators and supervisors to develop criterions for the use of technology in the classroom (ISTE, 2008).

Technology. The results support the assertion that treatment group adjunct instructors improved over time in the area of technology. The difference between

the means of pre- and post-intervention surveys for the technology area showed the treatment group increased their knowledge level by 0.60 points. This is a significant gain in comparison to the control group, which improved by 0.10 points. The treatment group adjunct instructors moved from "*agree*" (4) rating to "*strongly agree*" (5) rating in the area of use of technology. Qualitatively, the results comparing pre- and post-intervention surveys demonstrated a clear gain over time in a specific area. However, the results and analysis of the qualitative data (open-ended question) in triangulation with my classroom observation gave me a deeper understanding of this change.

In the open-ended pre-intervention survey, the majority of adjuncts addressed technology in a very basic way, such as the use of PowerPoint and use of internet. In the open-ended post-intervention survey, the majority of adjuncts expressed the same pattern of answers when referring to technology. I also confirmed this basic use of technology when I observed adjunct instructors teaching in their classrooms. I wrote: "The computer is on, but has not been used by the instructor for the last 30 minutes." In this classroom, specifically, I noticed that the instructor had created a PowerPoint slide with the agenda, and this was the only slide for the entire night. After my observation I asked her why she left that same slide up the entire time. She answered: "Don't you want us to use more technology?" (personal communication, August 29, 2011). Another example was when observing adjunct instructor Allison, she talked about the importance of technology in the classroom, and handed out an article to students. She is talking about technology and she hands out a paper article. The efficient use of

technology in this situation could have been her uploading the same article in a

Blackboard shell or even sending it electronically via e-mail to students. The

NETS (2011) suggested integration of technology should be in a creative way.

Generally, I did not see adjunct instructors introducing technology in an

innovative manner.

For those adjunct instructors, their belief as self reported on the Likert

scale changed or improved, but qualitative data from the post-intervention survey

open-ended question and my observations still showed the same very basic use of

technology, PowerPoint and internet. Neither adjunct instructors from the

treatment group nor adjunct instructors from the control group changed the level

of sophistication when using technology. Because the majority of adjuncts did

not change the types of technology or how they used technology, the findings in

the qualitative data made me question whether there was real improvement in the

use of technology. Again, the NETS (2008) performance indicators suggest that

instructors should be ready to "design, develop, and evaluate authentic learning

experiences and assessments incorporating contemporary tools and resources to

maximize content learning" (p. 9). The application of technology was not

observed and was not found in the open-ended responses. Since the change only

appeared in the quantitative posttest, through triangulation I am unable to

establish that adjunct instructors were making the most effective use of

technology. They understand the need to integrate the content expertise with

technology, but they still are not mastering this integration.

Andragogy. Analyses of the results for efficacy in the AK area, evidence for the adjunct instructors from the treatment group showed they did it well. Examples of this are found throughout my observations notes. I wrote: "Instructor Karen started her class with an opening speech recognizing adults characteristics." This is an example of how they were integrating adult learning theory (andragogy) in their classrooms. They understood the need to blend adult learners' characteristics into their classroom meetings. This understanding was reflected by the quantitative data as well as the qualitative data. The majority, 95%, of the adjunct instructors, from the treatment group, moved from "*somewhat agrees*" (3) to "*strongly agree*" (5) in the area of usage of andragogy in their classroom. The difference between the means of pre- and post-intervention surveys for the andragogy area showed that treatment group improved their confidence level by 0.48 points. This is a significant gain in comparison to the control group, which improved by 0.06 points during the same period of time.

I found the most powerful information from the qualitative data. During the first support group meeting, the adjunct instructors were able to articulate their understanding of andragogy, and also describe how they would use the principles of andragogy. Following is an example of one adjunct describing the use of andragrogy in her classroom:

I think it is amazing that you introduced us to the principles of adult

learning. It is almost if I knew them, but giving us the background and the

roots through Knowls, really helped me. Now [pause] this experience that

I am having here with you all, is an example of what I will be bringing to

my classroom. A cooperative leaning environment, where adults learn

together. (personal communication, August 6, 2011)

The literature also supports this method: '[T]he approach to adult education will

be via the route of situations, not subjects" (Lindeman, 1961, p. 5). The intention

to use social learning theory (Bandura, 1970) and andragogy (Knowls, 1970) was

the correct approach for this intervention. My intention was to not only teach

them about these theories, but to also use them when training the treatment group.

They responded so well that they replicated the same approach in their own

classroom. I wrote in one of my classroom observation notes:

Instructor Barbara is mediating a discussion among the students about

teaching illegal immigrants, and even though students clearly don't agree

with each other, they are showing respect for each other's opinions. She

created this collaborative environment at the same time she was ensuring

adult learning principles.

The examples above showed that adjunct instructors reflected the adult learning

characteristics and applied them in their classrooms.

The areas with significant improvement for the treatment group were the

areas addressed by the intervention throughout the study, TK, AK and TAK. This

result is consistent with the intervention, because I assumed that the adjunct

instructors, who participated in this study, would bring their own content

knowledge expertise. Therefore I did not address the area of content knowledge

in the intervention.

Unexpected Improvement. As the discussion above demonstrated the treatment group improved significantly in the areas of TK and AK in comparison with the control group. However, it is important to point out that both groups of adjunct instructors (treatment and control) improved. Although my focus has been on the treatment group results, I believe it is essential that I also account for the changes in the control group.

After reflecting the data and results I believe the growth seen in the control group was an example of natural growth. This reported growth would have happened anyway. During the semester, all adjunct instructors are exposed to different situations that offer opportunities for growth. Therefore, just the fact that adjunct instructors from the control group were exposed to adults in their daily interactions may account for the small gain over time. The same analogy can be drawn for technology. We cannot deny that technology touches almost all aspects of our lives today. Thus the control group improved in the areas of technology and angragogy in a normal, anticipated fashion.

Assertion 3: Adjunct Instructors Are More Aware of Students' Behavior and Academic Work

The third assertion is that the adjunct instructors from the treatment group were more aware of students' behavior and academic work. This assertion complements the previous one because acknowledging adult characteristics helped adjunct instructors to be aware of students' behavior. After receiving the training and participating in the first support group meeting, the adjunct instructors showed sensitivity to students' performance. This view is also

supported by SLT, which presents leaning through interaction and observation of others (Bandura, 1977; Bandura & Walters, 1963; Rotter, 1954). The adjunct instructors learned about their students educational needs also from observing their students' behavior and students' academic work.

To support this assertion, I looked back on the efficacy of adjunct instructors from the treatment group. In the areas of physiological and emotional conditions (PEC) and social influence (SI), adjunct instructors from the treatment group demonstrated improving their efficacy level in comparison to the control group. This improvement is attributed to the awareness that adjunct instructors, now, have about their students' physical responses or reaction in the classroom. Subsequently, I used findings from my observations to support my assertion. The following example illustrated how adjunct instructors' responsiveness to students' needs was influenced by adjunct instructors' awareness of students' behavior.

Adjunct instructor Pat changed the physical layout of her classroom from a formal linear row layout with tables to a circular chair only seating pattern, to provide an environment conducive to interaction. I also interpreted that the change in the settings, supported a positive and less threatening atmosphere. I wrote in my notes: "It seems like she knows that students will respond to this classroom setting better." Another example comes from one of the open-ended post-intervention survey responses, "I know through his or her expressions. Sometimes they look frustrated. I can tell, physically, that they don't get it. So, I approach that student individually if necessary." Adjunct instructors were using

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their knowledge and awareness of students' condition to meet their educational needs.

In the second area, SI, the improvement was also seen in both sets of qualitative data. I observed positive social interaction among instructors and students. I wrote in my observations notes: "It makes me feel good when I see adjuncts and students sharing feedback that impacts classroom instruction." What this means is that adjunct instructors were applying, what they learned from the training and from each other in the focus/support group meeting, in their classrooms.

Implementation of the comprehensive, blended training model, prior to beginning and during teaching influenced the adjunct instructors in three ways. First, they were more efficacious in meeting students' educational needs. Second, they gained understanding of the need to integrate content expertise with technology and andragogy. Finally, they were more aware of their students' behavior and how they can better address student's academic needs by being aware of behaviors and visual cues.

Discussion of Outcomes for Students

Two assertions helped me to answers Research Question 2 (*How does the implementation of a comprehensive, blended training model for adjunct instructors, prior to, and during teaching, influence the students' perception (confidence) in having their educational needs met?*). Quantitative and qualitative data from students' surveys, multiple choice and open-ended questions were used to gather information to answer this question. There are two assertions

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the results support in respect to the students' efficacy. These were: (a) more efficacious in applying the knowledge learned in class, and (b) better related the course content to their own and others' (collective) educational needs.

For the remainder of this paper students who took classes with the adjunct instructors from the treatment group are referred to as PDS, and students who took classes with adjunct instructors from the control group are referred to as GDS.

Assertion 1: Students' Application of Knowledge

The first assertion is that PDS reported more often that they were efficacious in applying the knowledge learned, in class, at their work place or personal life in comparison to GDS. It is important to understand that neither group of students (PDS and GDS) received any kind of direct intervention. Therefore, it is reasonable to conclude that differences reported between student groups is attributable to the intervention received by the adjunct instructors.

Much like the survey questions asked of the adjunct instructors, which measured efficacy, students answered a survey based on Bandura's four sources of efficacy to assess efficacy in students: (a) student explicit experience (SSE), (b) student mastery knowledge (SMK), (c) student physiological and emotional conditions (SPEC), and (d) student social influence (SSI). Analysis and interpretation of the ANOVA results showed there were improvements in each of these four areas. In addition further calculation demonstrated that constructs SSE, SMK and SSI had a very small effect (η^2 (eta squared) of 0.10, 0.09 and 0.08 respectively) on the students from the treatment group versus students from the

control group, and that construct SPEC's effective size was low (η^2 (eta squared) 0.04). Thus, although treatment group adjunct instructors may have influenced their students, this effect was very small as indicated in the effect sizes.

To understand these results I had to go back to the literature and think how ones efficacy could influence other. As I have stated before self-efficacy is the capacity of an individual to believe in his or her ability to succeed in a particular task. This confident idea is cultivate in the interaction between the adjunct instructors and the students. The highest or lower confidence level from the adjunct instructor may affect the student individual confidence level. My analysis open the dialogue that the intervention helped both the adjunct instructors, and the students in believing that they can take the knowledge learned back to their work environment or personal life and apply it (Bandura, 1982). Indeed was a moderated difference in SSE, SMK and SSI between the two groups of students, but I cannot discard the possibility that the high efficacy level reposted by the adjunct instructors from the treatment group in these same categories may have impacted their students in the classroom.

Further, Bandura's (1977; 1997) dialogue of high self-efficacy can also come from the social interaction between people, in this case between adjunct instructor and student. I wrote in my observation notes: "Students and adjunct seems very comfortable with each other, there is a exchange of positive interaction (complements - positive enforcement)." They must carry a belief in oneself and belief in another' ability to teach and learn. This statement also helped me to understand the meaning the moderated difference between the two

groups of students in the SSI category. Students and adjunct were supporting each other throughout the class, with positive and constructive feedback. The students' moderated level of confidence maybe attributable to the reported high confidence level from the adjunct instructors in the treatment group.

PDS participants showed a slight increase in efficacy when applying new knowledge learned. The different results for explicit experience, mastering knowledge and social interaction between the students and adjucnts demonstrated that the intervention had a slight impact on students' confidence level.

Assertion 2: Students' Awareness of Educational Needs

The second assertion is that PDS participants better related the course content to individual and collective educational needs. This assertion is drawn from the analysis of the qualitative data. The relationship with the course content and different educational needs are reported together, sometimes in the same sentence, as the examples will show. Thus, I cannot point to a group of students seeking the same educational needs, but I can draw general conclusions.

For example, I noticed that PDS participants reported their educational needs being met from a collective approach, not only were their needs met but they also reported awareness of other students needs. The following are examples of students' responses in different classes: "She brought supplemental material to fulfill everybody's request", "He went far and beyond to incorporate everybody's work situation", and "In addition she used our own examples to illustrate the discussions". GDS participants also reported their educational needs being met, however the statements were more individualized. The following are examples

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from students taking courses from adjunct instructors in the control group: "This instructor met my educational needs because she adapted and added with examples that covered my personal situation", "This course helped me to attain my goal of creating a strong community with my students", and "The material and the instructor experience were very much aligned with my classroom reality, which made it very useful to me". In addition I observed students in the treatment group being aware of others situation and needs. The following is from my classroom observations' notes. I wrote: "The student indicated that the example given by the instructor would help her classmate's work situation." As we see both groups of students reported their educational needs being met. However, overall students enrolled in the courses with adjunct instructors in the treatment group were attentive to personal as well as their colleges' educational needs.

This analysis is supported by the literature when Bandura & Walters (1963) describe how humans gain new or improve knowledge by contact and awareness of others. The comments made by the students in the treatment group demonstrated awareness of the collective classroom, whereas the comments made by the students in the control group were concentrated on individual awareness and needs. Both groups expressed that their needs were met. However, the students in the treatment group were more aware of each others' needs and were likely given more than one opportunity and path to absorb the content that they needed. As Bandura & Walters (1963) point out humans learn better when they are in social environments that encourage interaction. The interaction in itself is often a learning tool that points out personal strengths and weaknesses by being

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able to learn an interact with others who bring unique perspectives from one's own point of view.

Low Significance Level. It is also important to talk about the results that were not significant, because it helps to reflect that still further study. An area that did not show change or a significant improvement in the students' results was the physiological and emotional conditions (SPEC) area. Even though PDS participants reported slightly high than the GDS participants in this category, the difference had a low significance (η^2 (eta squared) 0.04).

After reflecting and analyzing results from all data sources, I believe this result is consistent with the overall setting of this study. Both group of students were exposed to the same classrooms, with the same equipment and technology. Classrooms have outdated and inadequate equipments. The treatment group was not provided with additional or better settings and tools, therefore conditions for both groups were virtually the same. This situation informs the small difference between groups, and it is also supported by the literature since Pajares (1996) defines physical condition as the environment around us, as well as the supplies and equipment available.

Further, I looked again on the data about technology. The phenomenon of technology was absent in the students' data. The fact that students did not seem to identify technology as an element that contributed in their learning process demonstrated that adjunct instructors may have not use it effectively. The reality that both groups were using and had access to similar technology, helped to explain why technology had no effect on students. The no existing data from the

students' information supports my conclusion that adjunct instructors did not have a real improvement in their use of technology; they continue using basic technology, which had no effect in students' perception.

It is possible to assert that the comprehensive blended training model used in this study impacted and influenced positively the adjuncts instructors and the students. The analysis of the results conclude that the adjunct instructors in the treatment group they were first more confident in meeting students' educational needs, second they understood the need to integrate content expertise with technology and andragogy, and third they were more aware of students' behavior and academic work. The impact was also positive for students who took classes with the adjunct instructors from the treatment group. Student were first more confident in applying the knowledge learned in class in their work place and lives, and second they related better the course content to personal and others' (collective) educational needs.

Limitations of the Study

In this chapter, I presented the arguments of the assertions that I drew from the data. The following are limitations that were considered in the discussion to the research questions asked in this action research:

1. This action research used a purposeful-convenience sampling method, which is common and supported in action research. Since, the purpose of action research is to improve a local issue. While the specific sample was appropriate and helpful in achieving the results of this study, the ability to apply the outcomes to a general population is

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limited. The convenience-sampling group was chosen because of their proximity to the researcher and because of the time limitations for writing a dissertation study. While, the limitation was minimized by the use of a quasi-experimental design with a treatment and a control group, it might be interesting to re-create this same study with a different group of participants to understand its general applicability.

2. In writing a dissertation, it is important to complete the project in a timely manner. As a result, time can either enhance the project or serve as a limitation. In this case it served in both functions. It enhanced the project by providing a set timeframe that mimics real life. It created a limitation because it would be of interest if the study were limitless and could be tracked over a few years. It would be of interest to see the long-term impact of the intervention.

3. The ACKT survey was adapted to measure two areas: 1) knowledge and 2) perception. When this instrument was adapted there were 15 items out of the 23 questions (65%) that were used to measure knowledge and perception. As we conducted the study, I began to wonder if these questions truly measure both, knowledge and perception. I learned that the instrument itself could have been strengthened by clearly separating these questions. That said, I do not believe that shifting this would have significantly altered the intervention or the purpose results. Although, it might have provided a deeper insight about the participants and the lessons they learned.

4. I am the supervisor of many of the adjuncts instructors who

    participated in this study. This relationship helped to generate a great

    deal of participation in the study. I personally conducted the training,

    guided the support group meetings, and conducted the classroom

    observations. Since I have a relationship with the participants and a

    position of power, it is possible that it might have influenced the

    participants' behavior and answers. Additionally, since I am the

    director of the program in which I implemented the intervention, I

    have a lot of knowledge about the dynamics of the institution, its

    culture and its issues. Although, this limitation was minimized by the

    use of different data collection and member check points, it could be

    considered as a limitation as personal knowledge can affect the

    analysis and conclusions.

Although the two groups of adjunct instructors where somewhat different at pretest, there were no reasons to believe these differences influenced the outcome of the study. Thus, being aware of the limitations helped me throughout the analysis of the responses, the results, and the research questions.

Chapter 6

CONCLUSION

This chapter will present conclusions derived from the study of this

dissertation. First, I will review the purpose for this study and how the

implementation of this intervention helped to answer the research questions.

Then, I will discuss the lessons learned from the literature review and the data.

Next, I will present and discuss the implications that this action research had for

the participants (adjuncts, students and me) and for my work place. In summary,

I will present recommendations for future cycles of action research and for

continuous improvement opportunities associated with higher education and the

dynamic interplay between student, teacher and content.

Research Purpose

The program that I direct relies on adjunct instructors to deliver the

academic content of the classes. As the director of the program, it is important

that I set the expectations for how learning is to occur as well as ensure that

adjunct instructors are prepared before they enter the classroom. The purpose of

this study was to discover if a professional development intervention done with

the instructors would transfer into measurable classroom results. I wondered if

the instructors would feel more confident in their approach to teaching and

increase their perception of meeting their students' educational needs. I wondered

if the students would be impacted by the behavioral shifts of the adjunct

instructors and would increase their own perceptions of having their educational

needs met.

More than a year later, I was able to turn my thoughts from speculation to confirmation. The intervention positively impacted the treatment group; both adjunct instructors and their students reported increases in their confidence levels. As the director of the program, I am charged with meeting each student's educational needs; this goal is achieved through choosing and supporting a well-prepared and confident group of adjunct instructors. The results of this study assure me that I must continue providing training and support to my adjunct instructors. This action is the necessary link between my program and its goal of meeting students' needs. Providing professional development to adjunct instructors raises their confidence level and in turn increases the confidence levels of the students, which is an important part of meeting the students' educational needs.

Lessons Learned from Literature, Data and Community

The literature review gave me the necessary foundation to understand the need to conduct this study, revealing the importance of effective preparation of adjunct instructors. Researchers (Blandford, 2000; Leven, 2003; Male, 1997; Speck & Knipe, 2005) noted that successful interventions must include intentionally designed, specific steps in order to achieve the intended results. Their research helped me to recognize the importance of utilizing a theoretical framework to support the study.

With regard to the theoretical framework for this study, I sought a specific model that would help my adult learners achieve the intended results. While many theories focused on learning transfer, Bandura's Social Learning Theory

(SLT) revealed that a collaborative approach is important and preferable when working on preparation and improvement of skills in adults. Malcolm Knowles' (1970) work on the unique characteristics of adult learners, known as andragogy, further augmented this method by specifically honing in on methods that would be transferrable to the classroom.

The data collected was rich with information that addressed findings beyond my research questions. More than simply learning about what the instructors might need in terms of professional development, I also learned about their expectations of the institution (as represented by my leadership) and about my role as an educational leader. Specifically, the adjuncts stated that they wanted me to set the expectations for their work and to guide them throughout the semester. I learned that as an educational leader, I do not need to micromanage the adjunct instructors as long as they have the tools to perform their job with confidence. My role is to be clear about classroom expectations and goals. In addition, as an educational leader, I need to be available to adjunct instructors as a mentor, to discuss instructional issues and solutions. The study's intervention brought me closer to my adjunct instructors, both personally and professionally.

As I listened to the instructors' stories and reflected on the data, it also became clear that an assumption I had made from the start was incorrect. I assumed that if students were taking a specific class–for example, reading comprehension–the content itself was their educational need. However, defining educational needs is not as simple as I had thought. These needs are often as distinct as the individuals themselves. I learned that some students may be

seeking co-curricular learning, leaning from the course curriculum, and are taking the subjects to achieve other unexpected goals, such as changing careers. In much the this study provided new lessons to me, each course a student takes provides the foundation for learning both the topic at hand as well as corollary information. The corollary learning may emerge as improvements to efficacy, technology, writing, or networking. Educational needs are demonstrated in a variety of forms and can be met in ways beyond the specific content addressed in a course.

Another assumption I had, that was proven inaccurate by the research, concerned technology. I expected that after the intervention, adjunct instructors would use technology consistently in their classroom and students would notice the benefits of technology in their learning process. I was aware from the beginning of this study that the adjuncts were not using technology in their courses very often or very effectively. This lack of technology use informed my decision to use the Technology Pedagogy Content Knowledge (TPACK) framework (Koehler & Mishra, 2008) as the foundation to create my own Andragogy Content Knowledge Technology (ACKT) framework. Through the literature review I learned how important the selection of the appropriate framework would be for the intervention. I intentionally chose a framework that addressed technology since I felt that the instructors' use of technology needed to be improved as much as their awareness of andragogy did.

After completing the action research intervention, I gained a deep knowledge that went beyond preparing adjuncts to use technology and andragogy in the classroom. In the area of technology, I learned that adjunct instructors

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often did not have either the skills to effectively integrate technology or the access

to the equipment. Introducing technology to an adjunct does not automatically

translate into an instructor's knowing the best time and method for incorporating

this technology into a classroom setting. I learned that having a solid framework

is crucial to establishing and sustaining a professional development program that

prepares instructors to use technology in a natural and seamless way during

content delivery so that it is a support tool rather than the focus of a class.

Therefore, the ideal state is one in which technology and teaching methodology

are integrated into the content delivery so that the students more easily absorb the

content because the adjuncts understand the best ways to use both technology and

andragogy in their classrooms. Awareness of technology alone is not sufficient to

ensure its successful application. Based on this knowledge, I will work to model

the appropriate use of technology in my ongoing professional development

program for adjuncts. In addition I will look for opportunities for other

instructors who are proficient in the use of technology to share their methods for

incorporating technology in their classrooms. I understand that modeling alone

will not be sufficient to make all adjunct instructors proficient in the use of

technology so I also plan to propose to the institution implementing a professional

development program for adjunct instructors with allocated budget and resources.

Finally, I learned the importance of community. Based on Bandura's SLT

I realized that adults learn from each other, so I implemented focus groups as part

of the intervention to create a community of practice. I did not realize until I

began reflecting on my own journey of development that I too was on a path

parallel to the adjunct instructors. My professional growth was supported and I

gained the confidence necessary to finish this research due in part to the Learning

Scholar Committee (LSC). My professors and peers in the LSC pushed me to

think deeply, to grow my breadth of knowledge, and they provided me

constructive criticism. In addition my professors provided me the tools and

strategies to succeed. They also cast light on the possible paths toward

understanding and allowed me to reach my own conclusions. Most importantly

the LSC gave me the confidence to see myself finishing this work and to continue

to grow as a lifelong learner. My experience in this program and especially as an

LSC member has shown the value of learning in community with others. I plan to

continue learning in community both at work and with my LSC colleagues.

Implications of the Study

This study has many implications for the institution where I work, for me

as an educational leader, for the adjunct instructors and for our students. This

action research is an initial step in understanding the importance of adjunct

instructor preparation and support.

Implications for the institution. The institution is preparing for

reaccreditation in 2014. The findings of the study can provide useful information

at the local level (self-study), which can be used to demonstrate to the

accreditation committee our initiative to prepare and maintain the quality of our

adjunct instructors. The findings of this study convinced me that my institution

will benefit in many ways by adopting a program of adjunct instructor

preparation. First, adjunct instructors are the primary face of an educational

institution to its students; the students are largely influenced by the performance, skills and personalities of the instructors, even more than the institution's administration. A professional development program like the one used in this study is beneficial because the data of this study showed that the preparation process enhanced the instructors' effectiveness by increasing their confidence levels and their understanding of the institution's expectations. Implementing this type of program will also aid the institution in communicating its educational goals, vision and classroom expectations to both its adjunct instructors and its students. Establishing a preparation program will also offer the institution the opportunity to bring together adjunct instructors who may have never had the chance to meet by creating a community of practice. The community of practice gives both the institution's administration and its adjunct instructors the opportunity to create an environment that supports collaboration and mentorship, so that everyone benefits. Finally, this type of intentionally designed program will help the institution demonstrate its commitment to a culture of continual improvement and to the value of its adjunct instructors' professional and practical skills. The next step is for me to prepare a proposal to the institution outlining the resources required (personnel and budgetary), and the timeline to implement and achieve benefit from an adjunct instructor PD program. The institution's annual faculty symposium is planned for October. I will present the findings of this study at the symposium and will propose funding in our next budgetary plan cycle starting May to June of this year.

Implications for me. As an administrator of a continuing education program, this study gave me the opportunity to become a better manager by looking deeply into the adjunct instructors' roles, needs and their impact on students' performance. I better understand now what I can do to support the adjuncts; for example, I now know that they need assistance in choosing supplemental material for their classes and that they need more time for class preparation than was historically provided. For me, this study promoted a deeper relationship with the adjunct instructors at my institution and served as the impetus to create a culture of mentorship wherein the adjuncts now feel comfortable in reaching out to me for support. This action research study built the foundation for the development of adjunct instructor preparation and positioned me as a leader within my team of adjunct instructors. In summary, I learned that I need to allocate more of my time to adjunct professional development in order to build and maintain a highly functioning qualified team of instructors.

Implications for the adjunct instructors. Before this intervention, the adjunct instructors in my program were given the task of teaching without much direction. This intervention showed them that the impact of their work will be maximized by engaging with and receiving the support of the institution. Now that the adjunct instructors have met and formed a community of practice, they have the opportunity to continue this interaction informally and benefit from each other's ideas and support. This research opened the door of technology for many adjunct instructors; now they have the chance to continue exploring its use in the

classroom. For adjunct instructors there is now an opportunity to feel supported

by the institution, to collaborate with each other and to continue to develop and

adapt to the changing needs of the classroom.

An interesting consequence of this action research occurred for adjunct

instructors who did not receive the treatment. The instructors in the control group

are now starting to hear that some of their peers received professional

development training from the institution and are inquiring about when they can

receive the training. All adjuncts instructors are starting to expect that they will

receive training and preparation. I am planning to make the material available to

all adjunct instructors over the next few months so that I can leverage their

interest in the topic and grow the adjunct community of practice.   The impact on

the control group is one dimension of the research that I did not predict, but I am

happy that the control group is curious and interested in participating in the

development opportunity.

Implications for the students. I believe that the students' success in the

classroom is the main goal of an educational institution. This study showed that

preparing the adjunct instructors through a professional development program

directly affects the students in the classroom. Students benefit from more

confident adjunct instructors who believe they are well prepared to meet their

students' educational needs. Students receive consistent messages about their

learning because instructors regularly receive the same message regarding the

institution's educational goals and vision. Students achievement is a combination

of well-prepared instructors and a consistent environment that supports students'
needs.

      A summary of the implications of this study. It is my hope that this
study and its results will demonstrate to my institution the positive benefits of
implementing a professional development program for adjunct instructors. For
me, the research has solidified my role as an educational leader within my
organization. When I started this program I was the coordinator of the
professional development department, throughout the past three years I have
moved to the manager position and on to the director of the program. Finding
myself among experienced professional and faculty intimidated me in the
beginning. I remember being quiet and not interacting much during meetings,
sharing my ideas and opinions was something that I was not confident to do.
However, whenever I was asked for input on issues, or invited to join committees,
I gave my input and happily joined and lead projects. My involvement at work
increased as I progressed through this program. I started to recognize that my
peers both at work and at school valued my opinion. My timid position evolved
to a more secure and participatory attitude and I think a reason for my fast
evolution came from the exposure this program provided me. Recently, I was
invited to become the faculty chair for the southwest site. For the adjunct
instructors, it has provided a tool for collaboration and support. In the end, the
most important result is for our students, who provided feedback on the
effectiveness of the classes they attended and on their own personal achievements.

Opportunities for Development

I have been the director of this program for the past two years; this action research study was the most profound experience that I have had as a researcher, practitioner, leader and learner in that time. The action research cycle is a fast process that requires fast decisions, quick responses and time for reflection. Even though I view the action research as a success, if given the opportunity to repeat the project, I would do a few things differently.

First, I would take more time to create an improved instrument to measure the adjuncts' perceptions of their confidence levels. I used a single instrument, and I did not have sufficient time to critically evaluate and update this tool. I was not able to consider all of the consequences of using one tool to measure multiple areas. Specifically, I would add more qualitative questions to the instrument. I would use more understandable and precise language to provide a clearer understanding of the question and to narrow the participants' responses. For example, I would break the open-ended question into two questions: (a) Describe a lesson where technology was included to maximize adult learner content knowledge, (b) Explain how you use technology to support experiences that expand adult students learning. By breaking out the question into multiple questions and changing the word choice I will be better able to measure one's perception of efficacy and efficacy that translates into tangible results. This research was able to obtain good data, which helped in answering the research question, but today I understand that the instruments could be more clearly

written to aid the participants. I believe I could capture and receive more accurate responses with improved instruments.

Second, I would give more time for the adjunct instructors to interact. I recognize that requesting them to meet face-to-face required time and travel. More time for interaction does not necessarily require physical meetings. I would incorporate a virtual meeting through an online management system such as Blackboard where adjunct instructors could post questions, share concerns and relate successes. I could use technology to continue the collaboration beyond the focus group meetings to a place where support is always available. Leveraging technology for collaboration would also be a way to demonstrate and model the use of technology.

Third, I would build on the coaching model. One component of the innovation was to coach adjunct instructors through feedback after classroom observation. I would expand the coaching model by requiring adjunct instructors to present a mini lesson at the beginning of the treatment, where a panel of three to four educators would assist and provide coaching feedback to help adjunct instructors to transfer adult characteristics and technology to the classroom more efficiently. If possible this observation of explicit modeling of the adjunct instructors' instruction skills could be done in their work environment, where a supervisor would go and visit an adjunct instructor at their work place. At the conclusion of the observation the supervisor provides direct coaching and feedback to the adjunct instructors to help them relate and adapt to the expectations of the adult learners classroom.

Finally, I would diversify the technology knowledge approach. In this innovation I approached technology at one level, assuming that adjunct instructors would have basic knowledge of technology that could be applied directly into their classroom. However, adjunct instructors joined this innovation at many different levels of understanding regarding technology application. So, to maximize and advance each adjunct instructor I would create three levels of training exploring technology application. The first level would be basic technology working knowledge such as the use of the institution faculty portal, access to the online library for faculty and students, and basic use of PowerPoint and Word. The second level would be intermediate technology application such as the use of Blackboard shells, online discussion forums and incorporation of outside sources, links and videos. The third level would be an advanced technology application incorporating the identification, analysis and evaluation of new technology tools, and the development of leadership skills to support local and global learning communities on the use of technology. Adjunct instructors would participate at each level and take them as many times as necessary to fully master technology application skills to enhance classroom instruction.

Opportunities for Next Cycle of Action Research

This action research provided preparation for adjunct instructors who serve the continuing education program that I direct. I plan to continue this action research by first offering the professional development training to all adjunct instructors. I will start with all adjunct instructors at my location and then expand to our main campus and satellite campuses. Secondly, I plan to refine the survey

instruments to gain more clarity in responses to better inform further cycles of research. Thirdly, this action research can be expanded by addressing the content knowledge proficiency of the instructors. As the director of professional development, I see this action research as an ongoing study of continuous improvement. I am sure as I continue with the research steps, other opportunities for improvement will be discovered, and corresponding treatments will be developed.

Time is always a constraint to action research. With more time, better instruments could have been developed. With more time, other collaboration opportunities could have been made available to the instructors. The constraint of time is also a resource. The lack of time pushes the researcher to take action and make decisions within the time given. By taking action, something is measured, a portion of research is completed. Action research is an opportunity to start working on everyday problems. It is a process of continual improvement where through the use of creativity and practical applications, outcomes are measured and evaluated, and then the researcher identifies areas for development for the next cycle of action research.

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APPENDIX A

NATIONAL STAFF DEVELOPMENT COUNCIL STANDARDS

NSDC STANDARDS FOR STAFF DEVELOPMENT
Adopted by the Arizona Department of Education

CONTEXT STANDARDS

Learning Communities:
Staff development that improves the learning of all students organizes adults into learning communities whose goals are aligned with those of the school and district.

Leadership:
Staff development that improves the learning of all students requires skillful school and district leaders who guide continuous instructional improvement.

Resources:
Staff development that improves the learning of all students requires resources to support adult learning and collaboration.

PROCESS STANDARDS

Data-Driven:
Staff development that improves the learning of all students uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement.

Evaluation:
Staff development that improves the learning of all students uses multiple sources of information to guide improvement and demonstrate its impact.

Research-Based:
Staff development that improves the learning of all students prepares educators to apply research to decision making.

Design:
Staff development that improves the learning of all students uses learning strategies appropriate to the intended goal.

Learning:
Staff development that improves the learning of all students applies knowledge about human learning and change.

Collaboration:
Staff development that improves the learning of all students provides educators with the knowledge and skills to collaborate.

CONTENT STANDARDS

Equity:
Staff development that improves the learning of all students prepares educators to understand and appreciate all students, create safe, orderly, and supportive learning environments, and hold high expectations for their academic achievement.

Quality Teaching:
Staff development that improves the learning of all students deepens educators' content knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards, and prepares them to use various types of classroom assessments appropriately.

Family Involvement:
Staff development that improves the learning of all students provides educators with knowledge and skills to involve families and other stakeholders appropriately.

APPENDIX B

SUPPORT GROUP PROTOCAL 1

SUPPORT GROUP PROTOCAL 1

Date: _____

Attendants:

_____

_____

_____

_____

_____

_____

1) Distribute any handout material	Consent form, and worksheet
2) Welcome, thanks, purpose and goal of the section	Thanks you all for being here and Thanks again for agreeing to participate in this research. You all know me and as we have agreed before this is the 1st of two Support Group meet that I will be holding for this research. We will be here for about an hour. The purpose of the Focus Group is for us to discuss and get everybody opinion and feedback on the application of the ACKT framework. Basically, how you are doing after our training. I have few questions for the group, I am leading the group, but I am not here to convince you of anything or try to change your opinion. I am here to ask everybody questions and mediate our discussion. I am recording this section for my report and analyzes later.

3) Ground rules	To allow our conversation to flow more freely, I'd like to go over some ground rules.
	1. Please talk one at a time and avoid side conversations.
	2. Everyone doesn't have to answer every single question, but I'd like to hear from each of you today as the discussion progresses.
	3. This will be an open discussion … feel free to comment on each other's remarks.
	4. There are no "wrong answers," just different opinions. Say what is true for you, even if you're the only one who feels that way. Don't let the group sway you. But if you do change your mind, just let me know.
	5. Just let me know if you need a break. The bathrooms are located to the right and down the hall on the left.

4) Introduction of participants	I believe everybody already know each other, from our training, but could you please tell:
	-Name.
	-How long you have been teaching adults.
	-The area that you teach as adjunct instructor.

SUPPORT GROUP PROTOCAL 1

5) Support Groups 1st meeting questions	(Environment) Could you give me an example where you apply real life context and work place in your teaching? How would you create a respectful relationship among adult learners and yourself, in a safe learning atmosphere? (Syllabus) How would you empower adult learners to have control and influence in their learning process? Using adult learners' past and current experience as a resource for learning, how would you take advantage of these aspects in your classroom?

6) Questions that may emerge	Note to myself: Take note of questions that may emerge during the conversation.

7) Participants questions	After this discussion or from what you have been doing in to implement the ACKT framework to their syllabus and classroom: Does anyone have any questions or anything to ask each other or myself? Any additional thoughts? Do you all have clear ideas on how to incorporate it to your syllabus and classroom environment?

8) Closing	Thanks for coming today and talking about your experience with the ACKT framework in your adult classroom. Your comments have giving me a lot good information and different ways of see the real use of the framework.
	I thank you again for your time.

APPENDIX C

OBSERVATION PROTOCAL

OBSERVATION PROTOCAL

ACKT Framework
Observation Protocol

This observation protocol will be used to guide the researcher during the ACKT framework implementation period. The classroom observation will take place after the training and first focus group meeting. It has the goal of monitoring the usage of the ACKT framework into the classroom. It will also be as a feedback guide tool between the researcher and the observed adjunct instructor.

(*Fill this out prior to observing classes.*)
Background Information
Adjunct Instructor: _____ Date: _____
Course name: _____ Course #: _____
Class period or time of class: _____

Students Information:
Total students #: _____ Male: _____ Female: _____

Classroom Information:
Please describe the classroom:
_____
_____
_____

(*Fill this out as you are observing classes.*)

Purpose (objectives):

| |
| |

Intended outcomes:

| |
| |

Materials Used: (Technology – Hands on material)

| |
| |

Classroom environment:

| |
| |

Activity/Task: Content; nature of activity, what students doing (engagement), what adjunct instructor doing; interactions. - Group (   ) or Individual (   )

| |
| |

OBSERVATION PROTOCAL

Adjunct Instructors:

Technology:
Use technologies that enhance the teaching approaches for a lesson.
( ) Yes ( ) No
How:_____

Select technologies in the classroom that enhance what he/she teaches, how they teach and what adult students learn.
( ) Yes ( ) No
How:_____

Teaching:
Empower adult learners in their learning process:
( ) Yes ( ) No
How:_____

Create a respectful relationship among adult learners and yourself, in a safe learning atmosphere:
( ) Yes ( ) No
How:_____

Using adult learners' past and current experience as a resource for learning:
( ) Yes ( ) No
How:_____

Kept adult learners stimulated and involves:
( ) Yes ( ) No
How:_____

Mentored and provided leadership to the adult students:
( ) Yes ( ) No
How:_____

Content:
Demonstrated and showed knowledge of the subject:
( ) Yes ( ) No
How:_____

General Notes:

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APPENDIX D

OBSERVATION RUBRIC

OBSERVATION RUBRIC

Classroom Observation Rubric

Group: ☐ Treatment or ☐ Control

Dates: _____

Instructors #: _____

Part 1: Social Interaction

a) **Collaboration:** Interaction among a group (Look for interaction, connections between instructors, students and students among students)
( ) Observed   ( ) Not Observed

Notes:

b) **Dynamic:** Level of engagement in the classroom (Look for the vibrancy of the interaction between instructors, students and students among students)
( ) Observed   ( ) Not Observed

Notes:

c) **Communication:** Level of clarity of communication (Look for evidence that an instructor clearly communicates the expectation for the class)
( ) Observed   ( ) Not Observed

Notes

OBSERVATION RUBRIC

Classroom Observation Rubric

Instructors #: _____

Part 2) Adult Learner Characteristics

c) **Use of life experience**
                              ( ) Observed   ( ) Not Observed

Notes:

d) **Respectful environment**
                              ( ) Observed   ( ) Not Observed

Notes

e) **Practical application**
                              ( ) Observed   ( ) Not Observed

Notes:

Part 3) Technology

f) **Use of technology**
( ) Observed and applied ( ) Observed but not applied ( ) Not observed

Notes:

APPENDIX E

SUPPORT GROUP PROTOCAL 2

SUPPORT GROUP PROTOCAL 2

Date: _____

Attendants:

_____

_____

_____

_____

_____

_____

1) Distribute any handout material	Consent form, and worksheet
2) Welcome, thanks, purpose and goal of the section	Thanks you all for being here and Thanks again for agreeing to participate in this research. This is the second and final support group meeting. We will be here for about an hour. The purpose of the support Group is for us to talk about your experience using the ACKT framework.

| 3) Ground rules | To allow our conversation to flow more freely, I'll like to remind you our ground rules.

 1. Please talk one at a time and avoid side conversations.
 2. Everyone doesn't have to answer every single question, but I'd like to hear from each of you today as the discussion progresses.
 3. This will be an open discussion … feel free to comment on each other's remarks.
 4. There are no "wrong answers," just different opinions. Say what is true for you, even if you're the only one who feels that way. Don't let the group sway you. But if you do change your mind, just let me know.
 5. Just let me know if you need a break. The bathrooms are located to the right and down |

	the hall on the left.

SUPPORT GROUP PROTOCAL 2

4) Support Groups 2nd meeting question	Think back over the past 18 weeks, and what can each of you tell this group about your experience in this research?

APPENDIX F

ANGRAGOGY CONTENT KNOWLEDGE TECHNOLOGY SURVEY

ANGRAGOGY CONTENT KNOWLEDGE TECHNOLOGY SURVEY

ACKT Survey

Thank you for taking time to complete this questionnaire. Please answer each question to the best of your knowledge. Your thoughtfulness and candid responses are greatly appreciated. This survey is anonymous and your responses will be kept confidential and will not influence your position as an adjunct for this institution.

1. Your mother's middle name: _____

Demographic Background
2. Gender
( ) Female   ( ) Male

3. Age
( ) 21 – 30 ( ) 31 – 40 ( ) 41 – 50 ( ) 51 – 60 ( ) 61 – 70 ( ) 71 - 80

4. What is your highest level of education?
( ) Bachelors ( ) Master ( ) Doctorate

5. Area of Specialization (Select all that apply to you)
  ( ) Reading   ( ) Gifted   ( ) Math
  ( ) Bilingual/ESL/SEI   ( ) Spanish   ( ) Technology (Computer courses)
  ( ) Art   ( ) Science   ( ) Music
  ( ) P.E.   ( ) Class Management   ( ) Leadership
  ( ) Curriculum & instruct ( ) General elective (others)

6. How long have you been teaching a college traditional class (face2face)?
( ) 1 – 5 years ( ) 6 – 10 years ( ) 11 – 15 years ( ) 16 – 20 years ( ) 21 – 25 years

7. How long have you been teaching an online class for this institution?
( ) I don't teach online ( ) 1 – 5 years ( ) 6 – 10 years

For this section you will need to know two definitions, technology and digital literacy,
A) For the purpose of this questionnaire, technology refers to digital technology/technologies. That is, the digital tools we use such as computers, laptops, iPods, handhelds, interactive whiteboards, software programs, etc.
B) Digital literacy is the ability to locate, organize, understand, evaluate, and analyze information using digital technology.
Please answer all of the questions considering the meaning of technology and digital technology as described above.

Yes or No (Digital literacy)
8)   Do you know how to download a file from the World Wide Webb to your computer?
( ) Yes ( ) No
9)   Do you know how to send a file that is on your computer's hard drive to someone?
( ) Yes ( ) No
10)   Do you know how to open an attachment someone sent you via email?
( ) Yes ( ) No
11)   Do you know the name of any search engines?
( ) Yes ( ) No

ANGRAGOGY CONTENT KNOWLEDGE TECHNOLOGY SURVEY

	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
TK (Technology Knowledge)					
12. I model the technology that I use in my classroom (Lesson)					
13. I know about different technologies					
14. I have had sufficient opportunities to work with different technologies					
15. I encourage students to use technology					

As an adjunct each of you are academic experts and practitioners in a specific area of content knowledge. Please answer the following questions considering your area of content knowledge.

	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
CK (Content Knowledge)					
16. I have sufficient knowledge about my area of expertise					
17. I model, to students, the necessary skills to learn a content					
18. I have various strategies of further developing my understanding in my subject area					
19. I am always looking for opportunities to give students positive feedback					

Andragogy knowledge is the information that helps us to understand the connections between teaching and learning in adulthood. Please answer the following questions considering your teaching skills, when teaching adult learners.

	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
AK (Andragogy Knowledge)					
20. I know how to involve adult learners in setting goals					
21. I know how to involve adult learners in identifying learning needs					
22. I adapt my teaching style to different learners					
23. I know how to draw out adult learners experience relevant to topic					
24. I use a wide range of teaching approaches in a classroom setting (collaborative, direct instruction, inquiry learning, problem/project based learning etc.)					
25. I know how to relate theories and concepts to adult learners					
26. I know how to organize learning material concerned with learning objects					
27. I know how to led learners choose projects relevant to own interests					
28. I model how to create a respectful environment among adult learners					
29. I allow adult learners to voice their opinions					

ANGRAGOGY CONTENT KNOWLEDGE TECHNOLOGY SURVEY

ACKT Framework

	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
ACK (Andragogy Content Knowledge)					
30. I select effective teaching approaches to guide students thinking and learning in my specific area of expertise					
TCK (Technology Content Knowledge)					
31. I use technology that increases students content knowledge and provides students opportunities to demonstrate content knowledge					
TAK (Technology Andragogy Knowledge)					
32. I choose technology that enhance the lesson					
ACKT (Andragogy Content Knowledge Technology)					
33. I teach lessons that appropriately combine content area, technology and adult learning approaches					
34. I select technology to use in my classroom that enhance what I teach, how I teach and what students learn					
35. I model how to coordinate the use of content, technologies and teaching approaches					

Have you used Andragogy Content Knowledge Technology combination in your classes?
If yes, first: describe a specific episode where you effectively demonstrated or modeled a combination the content that you taught, technologies that you used, and andragogy teaching approaches that you applied in your course, second: how did you perceive (know) that you met your students' educational needs.
Please include in your description what content you taught, what technology you used and what teaching approach(es) you applied. If you have not had the opportunity to teach with technology, content and andragogy knowledge together, please indicate that you have not.

APPENDIX G

STUDENTS EFFICACY SURVEY

STUDENTS EFFICACY SURVEY

SE Survey

Thank you for taking time to complete this survey. Please answer each question to the best of your knowledge. Your thoughtfulness and candid responses are greatly appreciated. This survey is anonymous and your responses will be kept confidential and will not influence your grade in this course.

Demographic Background

1. Gender
( ) Female   ( ) Male

2. Age
( ) 21 – 30 ( ) 31 – 40 ( ) 41 – 50 ( ) 51 – 60 ( ) 61 – 70 ( ) 71 – 80

3. What is your highest level of education?
( ) Bachelor's Degree ( ) Master's Degree ( ) Doctorate

4. In which program is this course?
( ) Professional Development (PEP) ( ) Master's Program

5. Consider the program related to this class and select one of the following areas?
( ) Reading ( ) Gifted ( ) Math ( ) Art ( ) P.E ( ) Bilingual/ESL/SEI ( ) Spanish
( ) Music ( ) Technology (Computer courses) ( ) Science ( ) Music ( ) Leadership
( ) Class Management ( ) Curriculum & Instruction (   ) General Elective (others)

After taking this class, I am confident in my ability to:

	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
Explicit Experience					
6. Model the content I learned in this class in my own work environment (Classroom).					
7. Replicate the behaviors demonstrated by the instructor.					

	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
Master Knowledge					
8. Teach the lessons and knowledge that I learned from this course.					
9. Assimilate the lessons and knowledge from this course for my own lifelong learning.					

STUDENTS EFFICACY SURVEY

	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
Physiological & Emotional					
10. Teach more effectively in any type of environment (Classroom).					
11. Manage the classroom.					
12. Establish a feeling of community in my classroom.					
13. Facilitate collaboration in the classroom					

	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
Social Influence					
14. Determine the academic needs of my students.					
15. Give students positive encouragement and feedback.					

16. How, confidante, do you feel in applying this course knowledge to your work environment or

your personal life? Please describe how this course/instructors met your educational needs?

APPENDIX H

ADAPTATIONS OF TPACK SURVEY DEMOGRAPHIC

ADAPTATIONS OF TPACK SURVEY DEMOGRAPHIC

Demographic	
ACKT Survey	TACK Survey
1. Your mother's middle name:	1. Your ISU e-mail address
2. Gender ( ) Female ( ) Male	2. Gender a. Female b. Male
3. Age rage	3. Age range
( ) 21 – 30 ( ) 31 – 40 ( ) 41 – 50	a. 18-22 b. 23-26 c. 27-32 d. 32+
( ) 51 – 60 ( ) 61 – 70 ( ) 71 – 80	4. Major
4. What is your highest level of education?	a. Early Childhood Education (ECE)
( ) Bachelors ( ) Master ( ) Doctorate	b. Elementary Education (ELED)
5. Area of Specialization (Select all that apply	c. Other
to you)	5. Area of Specialization
( ) Reading ( ) Gifted ( ) Math ( ) Art ( ) P.E	a. Art
( ) Bilingual/ESL/SEI ( ) Spanish ( ) Music	b. Early Childhood Education Unified with
( ) Technology (Computer courses)	Special Education
( ) Science ( ) Music ( ) Leadership	c. English and Language Arts
( ) Class Management ( ) Curriculum & Instr.	d. Foreign Language e. Health
( ) General Elective (others)	f. History
6. How long have you been teaching a college	g. Instructional Strategist: Mild/Moderate (K8)
traditional class (face-to-face)?	Endorsement
( ) 1 – 5 years ( ) 6 – 10 years ( ) 11 – 15 years	h. Mathematics i. Music j. Science-Basic
( ) 16 – 20 years ( ) 21 – 25 years	k. Social Studies l. Speech/Theater m. Other
7. How long have you been teaching an online	6. Year in College
class for this institution?	a. Freshman b. Sophomore c. Junior d. Senior
( ) I don't teach online ( ) 1 – 5 years	7. Are you completing an educational
( ) 6 – 10 years	computing minor?
	a. Yes b. No
	8. Are you currently enrolled or have you
	completed a practicum experience in a Pre-K-6
	classroom?
	a. Yes b. No
	9. What semester and year (e.g. Spring 2008)
	do you plan to take the following? If you are
	currently enrolled in or have already taken one
	of these literacy blocks please list semester and
	year completed
	Literacy Block-I (C I 377, 448, 468A, 468C)
	Literacy Block-II (C I 378, 449, 468B, 468D)
	Student teaching

APPENDIX I
ADAPTATION OF TPACK CONSTRUCT 1 TO ACKT

ADAPTATION OF TPACK CONSTRUCT 1 TO ACKT

Construct 1 questions regarding technology knowledge in the ACKT and TACK

surveys

ACKT Survey	TACK Survey
Yes or No (Digital literacy) 8. Do you know how to download a file from the World Wide Web to your computer? ( ) Yes ( ) No 9. Do you know how to send a file that is on your computer's hard drive to someone? ( ) Yes ( ) No 10. Do you know how to open an attachment someone sent you via email? ( ) Yes ( ) No 11. Do you know the name of any search engines? ( ) Yes ( ) No	
12. I know how to solve my own technical problems. 13. I know about different technologies. 14. I have had sufficient opportunities to work with different technologies. 15. I understand Blackboard.	1. I know how to solve my own technical problems. 2. I can learn technology easily. 3. I keep up with important new technologies. 4. I frequently play around the technology. 5. I know about a lot of different technologies. 6. I have the technical skills I need to use technology.

APPENDIX J

ADAPTATION OF TPACK CONSTRUCT 2 TO ACKT

ADAPTATION OF TPACK CONSTRUCT 2 TO ACKT

Construct 2 questions regarding content knowledge in the ACKT and TACK

surveys

ACKT Survey	TACK Survey
16. I have sufficient knowledge about my area of expertise. 17. I use critical thinking when analyzing content material. 18. I have various strategies of further developing my understanding in my subject area. 19. I am always looking for updates from experts in my content.	**Mathematics** 7. I have sufficient knowledge about mathematics. 8. I can use a mathematical way of thinking. 9. I have various ways and strategies of developing my understanding of mathematics. **Social Studies** 10. I have sufficient knowledge about social studies. 11. I can use a historical way of thinking. 12. I have various ways and strategies of developing my understanding of social studies. **Science** 13. I have sufficient knowledge about science. 14. I can use a scientific way of thinking. 15. I have various ways and strategies of developing my understanding of science. **Literacy** 16. I have sufficient knowledge about literacy. 17. I can use a literary way of thinking. 18. I have various ways and strategies of developing my understanding of literacy.

APPENDIX K

ADAPTATION OF TPACK CONSTRUCT 3 TO ACKT

ADAPTATION OF TPACK CONSTRUCT 3 TO ACKT

Construct 3 questions regarding andragogy knowledge in the ACKT and TACK

surveys

ACKT Survey	TACK Survey
20. I know how to involve adult learners in setting goals.	19. I know how to assess student performance in a classroom.
21. I know how to involve adult learners in identifying learning needs.	20. I can adapt my teaching based-upon what students currently understand or do not understand.
22. I adapt my teaching style to different learners.	21. I can adapt my teaching style to different learners.
23. I know how to draw out adult learners' experience relevant to topic.	22. I can assess student learning in multiple ways.
24. I use a wide range of teaching approaches in a classroom setting (collaborative, direct instruction, inquiry learning, problem/project based learning etc).	23. I can use a wide range of teaching approaches in a classroom setting.
25. I know how to relate theories and concepts to adult learners.	24. I am familiar with common student understandings and misconceptions.
26. I know how to organize learning material concerned with learning objects.	25. I know how to organize and maintain classroom management.
27. I know how to lead learners choose projects relevant to own interests.	
28. I know how to create a respectful environment among adult learners.	
29. I allow adult learners to voice their opinions.	

APPENDIX L

ADAPTATION OF TPACK CONSTRUCT 4 TO ACKT

ADAPTATION OF TPACK CONSTRUCT 4 TO ACKT

Construct 4 questions regarding andragogy content knowledge in the ACKT and

TACK surveys

ACKT Survey	TACK Survey
30. I select effective teaching approaches to guide students thinking and learning in my specific area of expertise.	26. I can select effective teaching approaches to guide student thinking and learning in mathematics. 27. I can select effective teaching approaches to guide student thinking and learning in literacy. 28. I can select effective teaching approaches to guide student thinking and learning in science. 29. I can select effective teaching approaches to guide student thinking and learning in social studies.

APPENDIX M

ADAPTATION OF TPACK CONSTRUCT 5 TO ACKT

ADAPTATION OF TPACK CONSTRUCT 5 TO ACKT

Construct 5 questions regarding technology content knowledge in the ACKT and

TACK surveys

ACKT Survey	TACK Survey
31. I use technology that increases students' content knowledge and provides students opportunities to demonstrate content knowledge.	30. I know about technologies that I can use for understanding and doing mathematics. 31. I know about technologies that I can use for understanding and doing literacy. 32. I know about technologies that I can use for understanding and doing science. 33. I know about technologies that I can use for understanding and doing social studies.

APPENDIX N

ADAPTAION OF TPACK CONSTRUCT 6 TO ACKT

ADAPTATION OF TPACK CONSTRUCT 6 TO ACKT

Construct 6 questions regarding technology andragogy knowledge in the ACKT and TACK surveys

ACKT Survey	TACK Survey
32. I am thinking critically about how to use technology in my classroom. 33. I can select technologies to use in my classroom that enhance what I teach and how I teach. 34. I choose technology that support adult learners process.	34. I can choose technologies that enhance the teaching approaches for a lesson. 35. I can choose technologies that enhance students' learning for a lesson. 36. My teacher education program has caused me to think more deeply about how technology could influence the teaching approaches I use in my classroom. 37. I am thinking critically about how to use technology in my classroom. 38. I can adapt the use of the technologies that I am learning about to different teaching activities. 39. I can select technologies to use in my classroom that enhance what I teach, how I teach and what students learn. 40. I can use strategies that combine content, technologies and teaching approaches that I learned about in my coursework in my classroom. 41. I can provide leadership in helping others to coordinate the use of content, technologies and teaching approaches at my school and/or district. 42. I can choose technologies that enhance the content for a lesson.

APPENDIX O

ADAPTATION OF TPACK CONSTRUCT 7 TO ACKT

ADAPTATION OF TPACK CONSTRUCT 7 TO ACKT

Construct 7 questions regarding technology andragogy knowledge in the ACKT and TACK surveys

ACKT Survey	TACK Survey
35. I teach lessons that appropriately combine the content area that I teach, technology and adult learning approaches. 36. I provide leadership to coordinate the use of content, technologies and teaching approaches.	43. I can teach lessons that appropriately combine mathematics, technologies and teaching approaches. 44. I can teach lessons that appropriately combine literacy, technologies and teaching approaches. 45. I can teach lessons that appropriately combine science, technologies and teaching approaches. 46. I can teach lessons that appropriately combine social studies, technologies and teaching approaches.

APPENDIX P

TRIANGULATION TABLE

TRIANGULATION TABLE

Triangulation of Data

RQ1. How does the implementation of a comprehensive blended training model for adjunct instructors, prior to, beginning and during teaching influence:
a. The adjuncts' perception of meeting their students' educational needs?
b. The students' perception of how their educational needs are being met?

Quantitative	
Repeated Measures Analysis of Variance (ANOVA)	
ACKT Survey PDA and GDA self assessment in their perception of meeting the needs of students (efficacy)	SE Survey PDS and GDS self-report educational needs (efficacy) being met.
Construct 1. Technology	
Construct 2. Content	Construct 2. Master Knowledge
Construct 3. Andragogy	
Construct 4. Andragogy Content	Construct 1. Explicit Experience
Construct 5. Technology Content	
Construct 6. Technology Andragogy	
Construct 7. Andragogy Content Technology	Construct 3. Physiological & Emotional Construct 4. Social Influence

Qualitative
Observation Protocol and Individual Meeting (Feedback)
My observation (ACKT Survey construct 7) on adjunct instructor's application and usage of the ACKT model in the classroom and my observation (SE Survey construct 1, 2, 3 and 4) on student's engagement with the course and instructor. I will look for evidence of effective teaching, master knowledge and community engagement.
The data collected from ACKT and SE surveys and my observation will seek support for the triangulation analyzes of the data. I will look for a synchronized pattern from what adjunct instructors report about themselves, what students believe they have received from the program, course, and their own engagement, as well as what I observe of adjunct instructors usage of the ACKT model and students engagement in the classroom.
Support group Interview Meeting (Debrief)
My notes - I will provide questions to adjunct instructors to initiate discussion among all participants so they have an opportunity to share their understanding, doubts and application of the ACKT model.
The data collected from the support group meeting will help adjunct instructors and myself to monitor and adjust the usage of the ACKT model before and during the implementation of the comprehensive blended training model.

APPENDIX Q

ANDRAGOGY CONTENT KNOWLEDGE TECHNOLOGY

CONTRUCT TABLE

ANDRAGOGY CONTENT KNOWLEDGE TECHNOLOGY

CONTRUCT TABLE

ACKT Survey Constructs

Category 1: Knowledge		Category 2: Efficacy	
Construct 1		Construct 1	
TK	Q.12 Q.13 Q.14 Q.15	EE	Q.12 Q.17 Q.28 Q.35
CK	Q.16 Q.17 Q.18 Q.19	MK	Q.14 Q.16 Q.33
AK	Q.20 Q.21 Q.22 Q.23 Q.24 Q.25	PE	Q.13 Q.18 Q.23 Q.34
ACK	Q.30	SI	Q.15 Q.19 Q.21
TCK	Q.31		
ATK	Q.32		
ACKT	Q.33 Q.34 Q.35		

APPENDIX R

STUDENT EFFICACY CONSTRUCT TABLE

STUDENT EFFICACY SURVEY CONSTRUCT TABLE

Category 1: Efficacy	
Construct 1	
SEE	Q.6 Q.17
SMK	Q.8 Q.9
SPEC	Q.10 Q.11 Q.12 Q.13
SSI	Q.14 Q.15

APPENDIX S

RESEARCH INTEGRITY AND ASSURANCE

ASU Knowledge Enterprise
Development
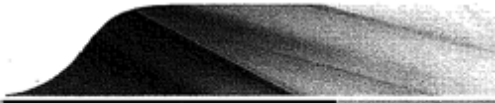
Office of Research Integrity and Assurance

for

To:	Keith Wetzel
	FAB
From:	Mark Roosa, Chair *SM*
	Soc Beh IRB
Date:	06/29/2011
Committee Action:	**Exemption Granted**
IRB Action Date:	06/29/2011
IRB Protocol #:	1106006539
Study Title:	Andragogy, Content knowledge, and Technology: A Training Model for Teaching Adults

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(1) (2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.