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Adult Learning Principles Used with Nontraditional Students in Higher Education to Enhance Learner Satisfaction and Retention

Brenda M. Smith
Lindenwood University

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in Higher Education to Enhance Learner

Satisfaction and Retention

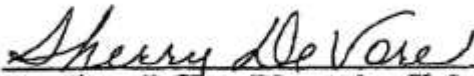by

Brenda M. Smith

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A Dissertation submitted to the Education Faculty of Lindenwood University in

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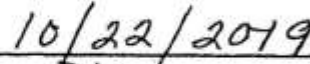
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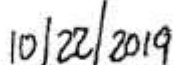
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This Dissertation has been approved as partial fulfillment

of the requirements for the degree of

Doctor of Education

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Dr. Sherry DeVore, Dissertation Chair   10/22/2019
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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

Full Legal Name: Brenda M. Smith

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Abstract

As enrollment of adult learners increases in higher education, addressing their different needs and providing resources to aid their success and retention is important. The purpose of this study was to garner quantitative data regarding adult learning principles used in higher education with nontraditional students, as reported by faculty and students, and identify if any differences exist. The theoretical framework included adult learning theories of andragogy, self-directed learning, and transformative learning. Adult learning principles and learning strategies were explored utilizing the survey instrument, Principles of Adult Learning Scale, by Gary Conti (2004). Descriptive statistics and two sample independent *t*-tests were used to analyze the data from faculty and student self-report surveys. To answer the first two research questions, participants were asked to identify the adult learning principles used by faculty and experienced by students in the classroom. Data results indicated 88% of the faculty tended to use teacher-centered methods and 12% learner-centered. For research questions three and four, the *t*-test revealed a statistically significant difference between the overall scores of the students and faculty for the categories Relating to Experience and Assessing Student Needs. Conclusions from the findings were focused on professional development, policy changes, and student input. Implications for practice included modifying the delivery format and integrating adult learning strategies in professional development regarding adult students. Recommendations for further study included expanding the survey to community colleges and using a mixed-method research design. Instruction using adult learning principles, motivating academic engagement, and embracing student input are ways to improve the satisfaction and retention of adult learners.

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Chapter One: Introduction

Nontraditional students are enrolling with more frequency than traditional students on many college campuses across the country and are becoming the norm of the college student population (Chen, 2014). According to the U.S. Department of Education (2017), enrollment projections for nontraditional students continue to increase by 20% through 2025 (p. 25). Undergraduates with at least one nontraditional student characteristic were reported to be 74% for the 2011-2012 academic year (U.S. Department of Education, 2015, p. 6). Higher percentages of nontraditional students enrolling in college have been the trend since 1995-1996 (U.S. Department of Education, 2015, p. 6). Over the past 50 years, researchers identified distinctive learning styles of nontraditional adult students and traditional students (Grabowski, Fayard, Ragen, Rush, & Watkins-Lewis, 2016).

Understanding how adults learn differently from traditional students can help educators integrate more appropriate teaching strategies into their courses (Merriam & Bierema, 2014). Changes in the campus and academic environment to understand the challenges of nontraditional students can impact the learner's chances for persistence to graduation (Bergman, Gross, Berry, & Shuck, 2014). Nontraditional students often must overcome many obstacles, such as multiple roles and responsibilities outside of the college experience (Goncalves & Trunk, 2014; Markle, 2015).

Barriers, or obstacles, to the student progressing toward degree completion in a reasonable time contribute to high attrition rates for nontraditional students (Goncalves & Trunk, 2014). Shapiro, Dundar, Wakhungu, Yuan, Nathan, and Hwang (2016) reported the median time for traditional students completing a bachelor's degree in 2014 was 5.2

years (p. 10). If delayed entry into postsecondary education occurs, which is a characteristic of a nontraditional student, the completion time to a bachelor's degree increases to a median of 6.9 years (Shapiro et al., 2016, p. 10). The length of time in completing a degree impacts the total cost, student's self-confidence, and persistence to graduation (Bergman et al., 2014).

Nontraditional students face challenges with parenting roles, particularly single parents, who often work full time and have family and work responsibilities which impact their time, energy, financial resources and focus on school (Bergman et al., 2014). Students with dependents and employment reported different childcare and work schedules as obstacles in their school experience (Bergman et al., 2014). Significant challenges and obstacles to student success and degree completion were environmental factors, external roles, and responsibilities of nontraditional learners, such as family support and housing (Grabowski et al., 2016).

According to Zeit (2014), technology and resources available to nontraditional students and their ability to utilize the technology can be a significant barrier to success. In a study by Goncalves and Trunk (2014), many nontraditional students reported social, academic, and staff relations to be positive experiences which enriched their lives and college experiences. Students' academic success and persistence toward degree completion can be improved by understanding the student perception of the curriculum and college experiences (Tinto, 2017).

In this chapter, the background for the study, theoretical framework, statement of the problem, and the purpose of the study are presented. Research questions to guide the

study are listed. Key terms for adult learning and nontraditional students in this study are defined.

Background of the Study

Malcolm Knowles is attributed with popularizing the concept of adult learning being fundamentally different than learning experienced by children (Chen, 2014). Knowles introduced the term andragogy as the antithesis of pedagogy, teaching children to learn (Knowles, Holton, & Swanson, 2015). Andragogy is a science and the art of helping adults learn, according to Knowles et al. (2015). The study of teaching and learning began centuries ago in ancient Rome and extended through the 20th century (Chen, 2014; Knowles et al., 2015). Changes in adult learning theories started appearing in the 1930s and 1940s with experimental changes in assessment formats (Knowles et al., 2015). During the 1960s, contributions from research in the disciplines of psychology, sociology, and anthropology expanded the knowledge base for the developing theory of adult learning (Knowles et al., 2015; Merriam, 2017). Research by Houle with continuing learners focused on the internal processes of adult learning (Knowles et al., 2015). Houle's studies were described as goal-oriented, activity-oriented, or learning-oriented and were influential in the development of the adult learning theory (Knowles et al., 2015).

Adult learner characteristics include being self-directed, learning through life experiences, having a readiness to learn, and being problem-centered (Knowles et al., 2015). Researchers continue to study adult learning theories, instructional design, and the impact each has on student success (Chen, 2014). The theories of pedagogy and andragogy are different and foundational to the study of student success (Knowles et al.,

2015). Nontraditional students experience various other obstacles to success as an adult learner (Goncalves & Trunk, 2014).

Goncalves and Trunk (2014) interviewed nontraditional students to identify obstacles which prevented academic success from the individual student perspective. Previous researchers found distinctions between traditional and nontraditional students by their social and academic involvement, mindset, and age (Grabowski et al., 2016). Barriers previously identified toward degree completion included factors related to gender, socio-culture, environmental factors, and full vs. part-time enrollment (Grabowski et al., 2016).

Theoretical Framework

Theoretical frameworks of this study included adult learning theory, andragogy, and effective teaching strategies for adult learners to improve nontraditional student retention and learner satisfaction. Andragogy refers to a learning theory and came from the Greek word *andragogos,* which means teaching adults (Ekoto & Gaikwad, 2015; Knowles et al., 2015). Adults learn differently than children, and teaching adults should be different than teaching children (Knowles et al., 2015). Historically, andragogy stems from Plato's philosophy of self-directed life-long learning (Ekoto & Gaikwad, 2015). Learning must be relevant to real-life situations and be problem and performance-centered for adults (Ekoto & Gaikwad, 2015). Attributes of adult learners include being self-directed, ready to learn, and goal-oriented (Knowles et al., 2015).

Learning by experience and utilizing prior experiences in learning are foundational principles of instruction in andragogy and adult learning (Knowles et al., 2015). Adults focus more on the process of learning in addition to the content (Knowles

et al., 2015). Understanding the process of learning is a fulfillment of the need to know why learning something is important and how will it help perform a task or solve a real-life problem (Leigh, Whitted, & Hamilton, 2015). In the adult learning theory, internal motivation to learn for self-esteem and individual goal attainment increases as a person matures and becomes more self-directed (Leigh et al., 2015). Knowles's assumptions of andragogy are considered foundations of adult learning theory and are used to solve everyday life problems by self-directed persons (Merriam & Bierema, 2014).

Changes in learning roles shift from a passive to an active participant as the learner matures (Merriam & Bierema, 2014). In andragogy, the teacher's role is more of a facilitator than a presenter (Merriam & Bierema, 2014). According to Muneja (2015), positive and trusting environments allow adult learners to feel welcomed, comfortable, and respected, which improves the learning process. Adults learn better when they are interested in the content and are more likely to accept new strategies when they understand the purpose of assignments or exercises (Knowles et al., 2015). Teaching strategies found to be effective with adult learners are case studies, educational games, and role play (Ekoto & Gaikwad, 2015). Adults learn outside of the classroom setting where group discussions, applied problem-solving, interviews, and goal setting are techniques of informal learning in life and work situations (Merriam & Bierema, 2014).

Statement of the Problem

College campuses across the country are experiencing increases in nontraditional student enrollments (Markle, 2015). Criteria for nontraditional students are being over the age of 25 years old and having one or more of seven distinct characteristics (U.S. Department of Education, 2015, p. 7). In addition to age, the components included

delayed enrollment in higher education, working full time, being financially independent, having dependents, being a single parent, and not being a high school graduate (Grabowski et al., 2016; Markle, 2015; U.S. Department of Education, 2015). Shapiro, Dundar, Huie, Wakhungu, Bhimdiwala, and Wilson (2019) reported nontraditional students in the 2011 cohort had a college completion rate of 48.9 % as compared to 64.7 % for traditional students within the same six-year period (p. 2).

Research studies of adult learning styles and characteristics of adult learners have been conducted over the past five decades (Chen, 2014; Conti, 2009; Knowles et al., 2015). A gap in the professional literature has been found in the application of instructional delivery methods, focused learning environments, and support services nontraditional students perceive to be useful and relevant to the higher education experience (Chen, 2014). Caruth (2014) found through a review of the literature on andragogy adults should be taught following the andragogy model, but higher education is not using andragogy teaching methods in the classrooms. For the effective teaching of adult learners, further research is needed to study the effect of adult learning practices and student satisfaction (Caruth, 2014).

Purpose of the Study

The purpose of this research was to gather data on the instructional practices instructors and students report to be effective with nontraditional students and student learner satisfaction outcomes. Although there is much research on the adult learning theories and instructional strategies to use with adult learners, there is less research on instructional practices instructors and students consider effective. Higher education faculty and administrators can utilize the data to improve services to the nontraditional

student population. The study can aid instructors in course redesign efforts by using the instructional strategies reported from both the faculty and student perspectives of effective learning environments to meet the needs of nontraditional students.

In this study, instructors and students reported what instructional strategies are used with nontraditional students. Research on different instructional strategies using adult learning principles and integrated into a curriculum is needed to plan for course improvements to meet student learner satisfaction and retention (Panacci, 2015). Students reported what instructional strategies were experienced in their college courses.

Research questions and hypotheses. The following research questions and hypotheses guided the study:

1. What strategies related to adult learning principles do college instructors report using in their classrooms, as measured by the Principles of Adult Learning Scale (Conti, 2004)?

2. What strategies related to adult learning principles do college students report the instructors use in the classes they have taken, as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004)?

3. What differences exist between adult learning principles reported to be used by faculty members as measured by the Principles of Adult Learning Scale (Conti, 2004) and the adult learning principles experienced by students in their classroom experiences as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004)?

$H3_0$: There is no difference between the adult learning principles the instructors report as measured by the Principles of Adult Learning Scale (Conti, 2004) and

the adult learning principles reported by students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004).

H3$_a$: There is a significant difference between the adult learning principles instructors report as measured by the Principles of Adult Learning Scale (Conti, 2004) and the adult learning principles reported by students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004).

4. What differences exist between adult learning principles reported to be used by faculty members as measured by the Principles of Adult Learning Scale (Conti, 2004) and the adult learning principles experienced by nontraditional students in their classroom experiences as measures by the Adapted Principles of Adult Learning Scale (Conti, 2004)?

H4$_0$: There is no difference between the adult learning principles the instructors report as measured by the Principles of Adult Learning Scale (Conti, 2004) and the adult learning principles reported by nontraditional students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004).

H4$_a$: There is a significant difference between the adult learning principles instructors report as measured by the Principles of Adult Learning Scale (Conti, 2004) and the adult learning principles reported by nontraditional students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004).

Significance of the Study

The significance of this study of adult learner principles used in higher education with nontraditional students will be for the faculty members and administration of a two-year university as they provide educational opportunities for their adult learner students. Identifying adult learning principles and teaching strategies used with nontraditional students will aid the faculty and administration in providing support services for the retention of the adult students (Caruth, 2014). Caruth (2014) identified a need for further study of teaching adult students using adult learning principles and andragogy practices to attain student satisfaction.

The purpose of the current study was to gather data to identify if instructors used adult learning principles. Nontraditional students also identified what adult learning principles were experienced in their learning environment. In the past 50 years, various studies of adult learning theories and instructional practices in higher education were conducted since Malcolm Knowles initiated his work in adult education and andragogy (Caruth, 2014; Knowles et al., 2015). Content-specific studies of teaching practices and adult learning principles used with nontraditional students have been conducted at traditional four-year universities (Chen, 2014). No studies were found for Midwestern two-year university faculty reporting adult learning principles used in the learning environment and nontraditional students reporting adult learning principles experienced in the learning environment.

In a study to improve instructional methods, students reported that the teachers were knowledgeable in their content area; however, their teaching methods were not interesting for the students (Fink, 2013). According to Fink (2013), the instructional

strategies higher education teachers use most often are lectures, discussions, and workbook exercises. Past researchers found adult learners have different learning needs than do traditional students and children taught by pedagogy methods (Caruth, 2014; Chen, 2017; Fink, 2013; Knowles et al., 2015).

Adult students attend college for specific needs of instruction or training (Caruth, 2014; Knowles et al., 2015). According to Fink (2013), developing an interesting course title is not enough to keep students engaged. If the quality of instruction is lacking, the students tend to rate the overall educational experience the same (Fink, 2013). The satisfaction and motivation of the adult learner with the total learning experience are important to administrators and faculty for improving retention and graduation rates (Wlodkowski & Ginsberg, 2017).

Definition of Key Terms

For this study, the following terms are defined:

Active learning. According to Brame (2016), active learning involves students taking a more participatory role to construct knowledge and understanding with activities including higher-order thinking.

Andragogy. Knowles et al. (2015) defined andragogy to be "the art and science of helping adults learn" (p. 41).

Effective learning. Learning which takes place by constructing meaning through an activity directed by the learner who is aware of the process and strategies for learning (Watkins, Carnell, & Lodge, 2007).

Learning environment. According to the Glossary of Educational Reform (2013), learning environments are diverse physical locations, contexts, and cultures in which students learn.

Nontraditional student. A nontraditional student is defined as having any one or more of the following characteristics: delays enrollment following high school, attends part-time, works full-time, is considered financially independent, has dependents other than a spouse, is a single parent, completed high school with a GED, and is age 25 or older (Chen, 2014; Goncalves & Trunk, 2014; Zeit, 2014).

Pedagogy. Knowles et al. (2015) defined pedagogy as "the art and science of teaching children" (p. 41).

Persistence to degree completion. Tinto (2017) described persistence to degree completion as continuing to pursue a goal while facing challenges.

Retention. According to York, Gibson, and Rankin (2015), an institution's measure of which students persist in an educational program during his or her academic career is expressed as retention.

Role conflict. Markle (2015) explained role conflict to be student experiences meeting the demands of one role to be made more difficult by the demands of another.

Self-efficacy. According to Tinto (2017), self-efficacy will influence the way a person approaches tasks, goals, and challenges.

Self-directed learning. Knowles et al. (2015) identified self-directed learning as a process in which the individual takes the initiative to determine his or her individual learning needs, set goals, identify resources for learning, choose strategies to reach the goals, and evaluate learning outcomes.

Traditional student. In the report from the U.S. Department of Education (2015), a traditional student is identified as one who had a high school diploma, enrolled full time within a year after finishing high school, dependent upon parents for financial support, and either did not work during the school year or worked part-time.

Transformative learning theory. Scheele (2015) described transformative learning as making meaning of content knowledge, values, beliefs, and experiences based on one's perspective. Jack Mezirow was credited with the early studies of transformation learning, which began in the 1970s (Scheele, 2015).

Delimitations, Limitations, and Assumptions

The scope of the study was bounded by the following delimitations:

Time frame. Approval was granted from the Dissertation Committee and the Institution Review Boards of Lindenwood University and the rural, public Midwestern two-year university in the spring of 2018. The survey items were entered in the Qualtrics (2018) software during the 2018 summer. Data collection and analysis for the study were conducted through the fall of 2018.

Location of the study. The study was conducted at a rural, public Midwestern two-year campus of a four-year university system.

Sample. The population sampled involved two groups, nontraditional students and faculty members. The sample for the two groups was selected from the total populations of faculty and students of the two-year campus using a cluster sampling method. Random selections for the approved number of participants meeting the study were made from the contact list generated through the campus Institutional Research Office.

Criteria. One sample surveyed was the nontraditional students who had completed at least one semester during the previous three semesters of the General Studies Associate of Arts Degree at a rural, public Midwest two-year campus of a four-year university system. The second sample group was the faculty members who had taught at least three years at the rural, public Midwestern two-year campus of a four-year university system.

The following limitations were identified in this study:

Sample demographics. According to the data extracted from an internal census summary, the sample population of nontraditional students was 27% of the total campus population (Institutional Research Office of Academic Affairs, 2017, p. 1). A limitation identified in this study was the perspectives of the individuals completing the self-report surveys. Another limitation of this study was the small sample size, which decreased the potential for inferences to populations of adult learners. Creswell (2014) identified the ability to generalize a sample to a population as a limitation of a study. The sample of nontraditional students attending a rural, public Midwestern two-year university campus of a four-year university system indicated a location limitation (Creswell, 2014).

Instrument. Permission was granted by the developer (see Appendix A) for the faculty survey instrument to be the Principles of Adult Learning Scale and the survey instrument for the students to be the Adapted Principles of Adult Learning Scale. According to Fraenkel, Wallen, and Hyun (2015), survey research may have internal validity threats or limitations of mortality, location, instrumentation, and instrument decay. An instrument limitation of the survey can occur if the questions are misleading, insensitive, or cause the individuals completing the survey to respond with a biased

answer (Fraenkel et al., 2015). Participants completed a self-report survey instrument for this research. Self-report surveys can be a limitation as participants may not be completely honest with their answers (Fraenkel et al., 2015).

The following assumptions were accepted:

1. The responses of the participants were offered honestly and without bias.

2. The responses of the participants were based on the interpretation of the survey items.

Summary

Enrollment of nontraditional students in higher education institutions continues to increase (Chen, 2014). Adult learning methods incorporated into the curriculum and classroom by faculty can impact the nontraditional student's sense of belonging, learner satisfaction, and academic success (Markle, 2015). Colleges would benefit by addressing the challenges identified by research and focusing on the needs of nontraditional students (Goncalves & Trunk, 2014). However, pedagogy methods of college faculty continue to be the same instructional methods and learning experiences used from the time of ancient Rome through to the twentieth century (Knowles et al., 2015). Nontraditional students report obstacles academically and environmentally, which impact student success and persistence to graduation (Markle, 2015). As more research is conducted regarding nontraditional students and adult learning theories, the application of this research could improve effective learning, retention, and graduation rates of university students (Markle, 2015).

In Chapter One, the concern of increased enrollment of nontraditional students on college campuses was introduced. Instruction to students with adult roles and

responsibilities outside of the classroom is different than the instruction to traditional students who just graduated from high school (Goncalves & Trunk, 2014). The background of the study included a brief historical view of research and the development of adult learning theories and instructional strategies found to be effective with adult learners. The theoretical framework was based on adult learning theories and instructional strategies for adult learners. Learner satisfaction and retention of students were supporting components of the study.

The purpose of the study was to contribute to the knowledge base and assessment of adult learning principles and effective instructional strategies which meet the needs of nontraditional students and improve learner satisfaction and retention. Instructors and students of a rural, public Midwestern two-year college were the participants of the study. Through the data garnered in this study, the research base will be expanded regarding what strategies higher education instructors report as being used with nontraditional students. The data were analyzed for the learning strategies nontraditional students reported receiving in their higher education experience.

Chapter Two includes a review of literature for nontraditional students, adult learning theories, and instructional strategies to use with adult students. Retention and student satisfaction are reviewed regarding nontraditional student persistence to graduation. In Chapter Two, adult learner needs, and the academic experience in support of nontraditional students are reviewed.

Chapter Two: Review of Literature

Higher education institutions are experiencing increased enrollment of nontraditional adult students and need to provide educators with strategies and teaching models which are effective (Chen, 2014). Adult students have personal, family, academic circumstances, community involvement, and social roles much different than the traditional students which attend college right after high school (Osam, Bergman, & Cumberland, 2017). Many nontraditional adult learners are married with children or may be single parents and work long hours to support their family, which shifts their focus from academic concerns being their main priority (Bowers & Bergman, 2016).

Awareness of the identified increase in student enrollment of nontraditional adult student learners is valuable information for administrators and educators of colleges and universities (Dauer & Absher, 2015; Grabowski et al., 2016). Providing for academic and social needs of this population demonstrates that the college is making efforts to connect with the students to enhance their higher education experience (Grabowski et al., 2016). Working with faculty and staff to understand and facilitate effective interactions, expectations, and experiences for the adult learner will also enhance the student's satisfaction with the institution (Cochran & Brown, 2016).

In Chapter Two, a review of the literature which guides the formation of this study is provided. The chapter begins with the theoretical framework of the adult learning theory, followed by a summary of the learning theories andragogy, self-directed learning, and transformative learning. Adult learner characteristics and teaching strategies recommended for use with adult learners are reviewed, followed by issues of

retention, and student satisfaction. The chapter concludes with a summary of the review of the literature.

Theoretical Framework: Adult Learning Overview

Adult learning is complex and occurs as individuals experience life in both formal and informal settings with various groups and organizations (Knowles et al., 2015). Adult learning and education prepare individuals to develop new knowledge, skills, and competencies for challenges and promote change for social and individual improvements (Iversen, Pedersen, Krogh, & Jensen, 2015; Merriam, 2017). Through building relationships and experiencing various life situations, adults create meaning (Merriam, 2017).

Adult learning experiences are used to promote life-long learning (Rachal, 2015). According to Merriam (2017), adult learning studies identified two pathways or perspectives: contextual and critical. Contextual learning involves educational psychology with an emphasis on where learning takes place or the learning environment (Merriam, 2017). Jarvis (2018) believed the social context of the learning experience also influences the meaning of the experience for the adult learner, such as being aware of the physical surroundings, people, or other sensations when listening to someone speak. Critical perspectives are focused more on the learning tasks such as challenging everyday realities, contesting injustice, unmasking power in our daily lives, and reclaiming reasoning (Merriam, 2017).

Understanding how adult learning is viewed in other countries expands one's knowledge of how to teach adults (Merriam, 2017). Results of international research in education showed meaningful learning takes place when students are engaged and the

content is relevant (Iversen et al., 2015). Research on adult learning in Western countries has been focused on cognitive development, while other cultures included physical, cognitive, spiritual, and emotional development (Merriam, 2017).

According to Iversen et al. (2015), meaningful learning involves the whole person concept utilizing physical, cognitive, and emotional processes instead of limiting learning to the cognitive domain. Western cultural references for traditional learning are framed around formal education in the classroom for children (Merriam, 2017). In western cultures, the learning process of pedagogy is used for teaching children through teacher-centered activities, while andragogy is promoted for teaching adults through discussion and learner-centered activities (Knowles et al., 2015; Merriam, 2017).

Non-western countries consider adult education as a way toward the support of community responsibilities (Merriam, 2017; Wlodkowski & Ginsberg, 2017). According to Merriam (2017), non-western cultures, compared to western cultures, are more holistic regarding where learning takes place and what is learned. Learning involves a broad perspective from the internal perception of the individual learner to the external culture where learning takes place (Jarvis, 2018).

For higher-level thinking or meaningful learning to take place, first, a basic understanding of content knowledge is required (Hattie & Donoghue, 2018). The study of learning can be a life-long process as life situations create change (Jarvis, 2018). The increasing numbers of adult learners enrolling in higher education change the demographics of the student population and requires faculty to understand the responsibilities and challenges of adult students (MacDonald, 2018).

The research in adult education has contributed to the identification of adult learning theories and methods which aid in their implementation (Merriam, 2017). Andragogy, self-directed learning, and transformative learning are methods the adult educator can use to learn to work with adult students successfully (Merriam, 2017). Exploring and understanding learning theories result in making better decisions regarding learning experiences (Knowles et al., 2015).

Adult learning theories. Andragogy is a learning theory based on the learner, learning principles, and assumptions of how adults learn (Knowles et al., 2015). Andragogy emphasizes education processes and learner characteristics (Knowles et al., 2015). Chen (2017), described andragogy as a collaborative and problem-based approach to learning, which emphasized teacher and learner equality.

Self-directed learning is a process where the individual learner identifies needs, sets goals, plans, implements, and evaluates the outcome (Grover & Miller, 2014; Knowles et al., 2015). Researchers continue to study self-directed learning since Tough first introduced his research in 1967 with further studies for identification and definition through the 1970s (Boyer, Edmondson, Artis, & Fleming, 2014; Merriam, 2017). The self-directed learner often is characterized by a high level of personal motivation and the ability to identify personal needs and wants (Grover & Miller, 2014).

Transformative learning is a cognitive process of making meaning from information in experiences that make a shift or change in perspective, belief, or attitude (Cranton, 2016). Around the turn of the century, Mezirow introduced transformative learning as a ten-step process (Merriam, 2017). According to Merriam (2017),

transformative learning begins with sudden or dramatic experiences and explores new ways to deal with changes in beliefs, attitudes, or perspective.

Andragogy. Historically, andragogy was first known to be used in 1833 by the German editor Alexander Kapp, to describe Plato's learning theory that learning continues to occur into adult life (Blackley & Sheffield, 2015; Knowles et al., 2015). Kapp wrote *Plato's Educational Ideas* about the values of education, including components such as lifelong learning with character education, life experiences, and self-reflection (Chen, 2014). Two men often included in discussions about the formation of American adult education philosophy and literature were Eduard Lindeman and Malcolm Knowles (Rachal, 2015).

In 1926, Lindeman traveled to Germany and returned with the concept of andragogy (Henschke, 2016). According to Rachal (2015), Lindeman was concerned about social changes and believed undereducated people became influenced easily. Lindeman advocated an educated population or society was less likely to fall for messages of hate and fear by people in power (Rachal, 2015).

Lindeman's legacy to American adult education literature was an essay entitled, *The Meaning of Education* (Rachal, 2015). In the essay, Lindeman wanted to educate the citizens to preserve the government and begin social change through adult education (Rachal, 2015). According to Knowles et al. (2015), andragogy was introduced in the United States by Lindeman as a method of teaching adults.

 Knowles' work in adult education theories in the 1960s was influenced by Lindeman and created a renewed interest in the European concept of andragogy (Knowles et al., 2015; Merriam, 2017). Knowles had experience with adult educators,

adult basic education, and literacy programs in the United States, which helped build the foundation for andragogy across the country (Henschke, 2016). Knowles emphasized the characteristics of learners and learning processes in adult education and andragogy rather than content design and research (Henschke, 2016; Merriam, 2017).

Knowles et al. (2015) identified five basic assumptions of andragogy. The andragogy principles described adults as self-directed learners who have a need to know, bring a wealth of experience to the learning situation, are ready to learn, prefer problem-centered learning, and are best motivated by internal factors (Knowles et al., 2015). By 1970, andragogy was established in the United States with Knowles' published book, *The Modern Practice of Adult Education: Andragogy vs. Pedagogy* (Henschke, 2016; Merriam, 2017).

Knowles was instrumental in the development of human resources in the corporate sector from 1971 to 1973 (Henschke, 2016). Human resource assessments and testing of andragogy principles in the United States and other countries continued as Knowles developed materials in adult basic education and literacy programs for the State Department of Education in Maryland (Henschke, 2016). In recent years, research studies identified how increased age impacts learning performance tasks and scores on intelligence tests (Merriam, 2017). According to Henschke (2016), over 500 research documents and articles covering andragogy are in a centralized collection.

Rachal (2015) determined Knowles' focus in adult education was more on individual change, unlike Lindeman's broader goal of social change. Two concerns of andragogy critics were the generalizations of andragogy for all adults and the changing role of the educator (Ekoto & Gaikwad, 2015; Merriam & Bierema, 2014). Debates of

andragogy as learner-centered and pedagogy as teacher-centered continue in the education world because clear explanations of how andragogy affects learning are lacking (Cochran & Brown, 2016; Ekoto & Gaikwad, 2015). In andragogy, the educator's role changes from a disseminator of knowledge to a facilitator, and the education process changes to a customer service business model (Merriam & Bierema, 2014).

Adults learn differently than children, and Knowles made the argument for andragogy versus pedagogy based on a comparison of how each teaching method addressed the basic assumptions (Knowles et al., 2015). Pedagogy places the responsibility of instruction of children on the teacher (Cochran & Brown, 2016; Knowles et al., 2015). Basic principles of pedagogy include the assumption the learner has little or no experience, and the teacher takes responsibility and evaluation of the learning (Knowles et al., 2015). Children are analytical learners because they have limited experiences (Knowles et al., 2015).

Pedagogy is subject-based, and the learner is told what to learn to advance to the next level of mastery-based on what society expects (Merriam & Bierema, 2014). In pedagogy, the learning orientation is dictated by subject matter, and the content is sequential (Knowles et al., 2015). Motivation is based on external pressures, such as grades or consequences (Knowles et al., 2015). When using traditional pedagogy methods, the teacher evaluates the student's learning process through grades or other assessments (Cochran & Brown, 2016; Knowles et al., 2015).

In andragogy, the instructor becomes the facilitator of learning and more of a guide for the learning process (Knowles et al., 2015; Merriam & Bierema, 2014).

Andragogy methods encourage the adult learner to self-reflect or evaluate past experiences and learning (Cochran & Brown, 2016; Knowles et al., 2015). For over four decades, andragogy has been used to teach adults, but still lacks acceptance in the higher education community (Caruth, 2014).

Self-directed learning. Self-directed learning is a process for the enhancement of skills and supportive attitudes for learning, which are practical and productive for adult learners and workers throughout their lifetimes (Guglielmino, 2014). According to Knowles et al. (2015), adult learners are self-directed and identify their own needs, set learning goals, identify resources, then select strategies for learning and evaluating the outcomes. Through self-directed learning, individuals can adapt to the demands required by employers in the information age (Egizii, 2015).

Learner readiness and overall positive relationships are characteristics exhibited by self-directed learners (Guglielmino, (2014). Self-directed learning involves the learner taking control of the topic, gathering and analyzing the information, determining how to evaluate the outcome, and forming new knowledge (Boyer et al., 2014; Knowles et al., 2015). In Tough's study of self-directed learners completed over one year, the adults took part in informal learning an average of 100 hours outside of a classroom setting and without a teacher (Merriam, 2017).

Self-directed learning focuses on improving the learning process and may not involve formal teaching environments (Merriam, 2017). Successful self-directed learners tend to be more intellectually engaged and have a personal preference for learning for the sake of learning (Egizii, 2015). Learning by self-direction may involve informal everyday events of adult life, higher education, or online self-improvement courses

(Merriam, 2017). Higher education institutions can utilize self-directed learning to improve programs and meet the needs of students, communities, and employers (Egizii, 2015).

In a 1977 study of self-directed learning, Guglielmino designed a rating scale using self-reports of learners of overall relationships, learner readiness, and workplace performance (Boyer et al., 2014). Guglielmino (2014) described a self-directed learner as proactive, resourceful, and one who takes responsibility for learning. According to Egizii (2015), self-directed learning is a way to personalize learning opportunities, and post-secondary institutions should support this process for adult learners.

Schools and universities need to prepare adults to enter the workplace and society as work-ready and equipped to contribute to the global economy (Egizii, 2015). The challenge for educational institutions is to re-focus or target adult learners to be successful as global citizens (Egizii, 2015). To be successful in the digital age, adult learners need motivation for continuous and self-directed learning (King, 2017; Merriam & Bierema, 2014). According to King (2017), adult learning principles are seldom addressed in teaching strategies utilizing technology.

One's stage of life, personal interest in a subject, and motivation are essential concepts in the adult learning process (Egizii, 2015). Guglielmino (2014) determined research supports that self-directed learners are also high performers in the workplace. Luke and Justice (2016) believed adult learners return to school for knowledge and skills to remain competitive in the workforce.

In Guglielmino's (2014) study, workers experiencing changes and requirements to participate in problem-solving received different scores on the Self-Directed Learning

Readiness Scale. The workers receiving higher scores on the Self-Directed Learning

Readiness Scale dealt with more changes and problem-solving requiring creativity than

the workers with average scores (Guglielmino, 2014). Individuals need to be able to

acquire information, compete with others in the workplace, and contribute to the

organization to be a global citizen and survive in the information age (Egizii, 2015).

Self-directed learning utilizes reflection to assess one's progress and then adjust

or modify for continued improvement (Guglielmino, 2014). Self-directed learning is

unique because the center of control is placed upon the learner rather than the teacher

(Boyer et al., 2014). Teachers implementing self-directed learning need to be more of a

facilitator of the learning process, providing support and resources for students (Boyer et

al., 2014; Egizii, 2015).

Workers with higher levels of internal control and motivation are more likely to

take the opportunity and invest efforts in self-directed learning when they believe the

results will meet their goals (Boyer et al., 2014). According to Boyer et al. (2014),

workers receiving support for their willingness to participate in self-directed learning

tend to improve self-efficacy and job performance. Theories of adult learning suggest

self-directed learning provides greater satisfaction when the learner determines what is

needed to achieve his or her goals, how to use resources to attain those goals, and

evaluate the process of reaching the goals (Knowles et al., 2015).

According to Knowles et al. (2015), principles of learning for adults include their

need to know why, self-directedness, and life experiences which frame their learning.

Learning experiences can help adults make sense of prior experiences and develop a new

sense of identity (Foote, 2015). Adult learners are challenged by new information and

critical thinking in the context of their experiences, personal beliefs, and ideas (King, 2017; MacDonald, 2018). Readiness for self-directed learning is a characteristic affected by the individual believing change can be achieved through personal efforts and abilities (Boyer et al., 2014).

Transformative learning. Education should challenge an individual's views and opinions (Foote, 2015). One of the theories considered foundational in the adult learning process is known as transformative learning (Merriam, 2017; Weber, 2018). According to Christie, Carey, Robertson, and Grainger (2015), Mezirow's theory of transformative learning aids the individual to describe or understand the meaning of experiences which challenge prior beliefs and values, influence opinions, or question personal attitudes.

A transformative learning experience challenges an individual's current beliefs about the world and creates the need for changes in one's behavior or ideas (Chen, 2017; Christie et al., 2015; Illeris, 2015). Transformative learning is an informal learning style which can change students when they engage in challenging education (Weber, 2018). Transformational learning can occur in small steps or by significant life events (Foote, 2015).

Adult learners experience transformative learning outside the classroom in everyday life through cognitive and emotional changes (Chen, 2017). According to Merriam (2017), the situation or context of learning and related emotional experience impacts the learning process. In studies conducted about adult learning, adult students experiencing transformative learning reported to be more satisfied with their educational progress, which resulted in more students persisting to graduation (Weber, 2018).

Transformative learning increases the likelihood of student persistence to enter a chosen field of work with self-efficacy and higher performance in the learning community (Weber, 2018). Learning communities may be formal or informal and involves other adults who share a common interest, such as family, social groups, and co-workers (Merriam, 2017). Mezirow's theoretical framework for transformative learning is based on his research in 1978 for the United States Department of Education of middle-aged women returning to higher education and the personal effect of their studies (Christie et al., 2015; Illeris, 2015).

Mezirow identified a series of 10 steps for transformative education to occur (Christie et al., 2015). The first four steps of the transformative learning process include a disorienting dilemma, self-examination, a sense of alienation, and sharing a discontent with others (Christie et al., 2015). Next, the learner reviews the options of new behaviors, finds new ways to build confidence, then plans a course of action (Christie et al., 2015). Adult learners are concerned with how new information fits into their experiences and the relevance of the data in their lives (Knowles et al., 2015).

In the last steps, the learner utilizes knowledge to implement plans then begins experimenting with the integration of new behaviors and roles (Christie et al., 2015). Transformative learning is a complicated process requiring the brain's neural networks to re-learn and change prior information (Knowles et al., 2015). An individual rarely undergoes transformative change unless he or she views it as a necessity (Christie et al., 2015). Mezirow's colleague, Stephen Brookfield, recommended the consideration of emotional, social, and political conditions in addition to the 10 steps of transformative learning (Mezirow, 2018). Critical thinking and inquiry transform the adult learner with

empowerment and self-directed learning (Weber, 2018). As adult learners connect with content in their field of study or interest, they become more motivated and engaged learners (Weber, 2018; Wlodkowski & Ginsberg, 2017).

Adult Learners

Over the past few decades, nontraditional adult learners have become a growing population of students on college campuses who attend college full-time or part-time (Bowers & Bergman, 2016). Universities use an accepted definition for a nontraditional adult student or learner as one over 25 years of age, working, married, not starting college directly after high school, or returning to college after time away (Bowers & Bergman, 2016). According to Tilley (2014), the most common characteristic found in literature reviews used to identify a student as nontraditional was being 25 years of age or older.

Changes in federal legislation of the sixties brought increased opportunities for participation of diverse populations of adult learners in higher education (Grabowski et al., 2016). New legislation provided federal student aid to females, individuals with lower socioeconomic status, and minority students increasing diversity enrollments in institutions of higher education (Grabowski et al., 2016). Often, characteristics which are used to define nontraditional students can also be obstacles to their full participation or success in higher education (Chen, 2014).

Traditional student and adult learners require different services based on diverse needs (Caruth, 2014). Compared to traditional students, nontraditional students experience more external demands, which create more stress when adult learners return to school (Tilley, 2014). Nontraditional students return to education after a life-changing event such as divorce, separation, and job loss (Bruce-Sanford, Heskeyahu, Longo, &

Rundles, 2015). Some universities have created policies specific to the retention of adult learners in higher education (Bergman et al., 2014).

In a report from the U.S. Department of Education (2015), undergraduate adult student enrollment for students with dependents is recorded to be 27.5%, which is at the highest level since 1995 (p. 6). The increase in enrollment of nontraditional students is attributed to factors such as career advancement, employment demands, job losses, improved standard of living, veterans, and retirement or early retirement packages (Grabowski et al., 2016). According to Grabowski et al. (2016), adult learners and nontraditional students focus on career and academic motives for education and training rather than social factors identified by traditional students.

Nontraditional students have high internal motivation standards for success and create high personal anxiety levels (Tilley, 2014). Past experiences and knowledge of the community, employment, and balancing family life with work can make the adult learner a valuable resource and mentor for traditional students (Caruth, 2014). According to Grabowski et al. (2016), a self-directed adult learner takes charge of his or her learning, like a consumer buying a product. Adult learners experience a lack of confidence from high anxiety levels and need reassurance their choice to pursue higher education is acceptable (Tilley, 2014).

Adult learners consider themselves as consumers of services from higher education institutions, and they will shop for services of the institutions (Grabowski et al., 2016). Adult learners seek to save money and get the best deal for the experiences benefiting them, such as increased salary or promotion (Grabowski et al., 2016). Institutions which seek to serve adult students to become engaged with learning content,

be transformed with more in-depth learning, develop new workforce skills, and acquire adaptable degrees have more adult learners persist to degree completion (Weber, 2018). A trained workforce or workers willing to develop new skills is essential to remain competitive with advanced technology (Acedo & Hughes, 2014; King, 2017).

Adult learners and universities can take advantage of information technology advances which provide opportunities for collaborative and group teaching, shared projects, research, and feedback with individual students anywhere in the world in one online class (Rubin, 2018). Online programming allows adult students to learn from experts not found on local campuses and participate in projects to gain experience for workplace advancement (Rubin, 2018). Technology advances in the 21st-century require highly educated individuals (Acedo & Hughes, 2014).

According to Edwards, Sieminski, and Zeldin (2013), people who attain higher levels of education tend to engage in continuing education or training opportunities. Status, culture, and power are part of the adult learner's profile when middle and upper-income adult learners participate in education and training (Edwards et al., 2013). Hattie and Donoghue (2018) described the science of learning as successful learners being flexible and knowing when to apply different ways of learning to different situations, while the art of teaching is knowing which learning strategies work and how to use them with individual learners.

Teaching Strategies for Adult Learners

Children and adult learners need different methods of instruction (Caruth, 2014; Chen, 2014; Knowles et al., 2015). Instructional methods to make learning exciting and relevant to adult learners include incorporating audio-visual aids, active learning,

experiential learning, and reflective learning (Palis & Quiros, 2014). Over the past four decades, research regarding the application of andragogy for teaching adults in business and industry and higher education resulted in teaching strategies using various adult learning practices (Caruth, 2014).

Higher education institutions fall short regarding nontraditional adult students who may not fit in with the university life focused on the traditional student (Knowles et al., 2015; Rodgers, 2016). Adult learners enter higher education with different motivations than traditional students often due to different life experiences and needs (Luke & Justice, 2016). There is a positive relationship between motivation and academic success for adult learners in a traditional educational setting (Knowles et al., 2015; Luke & Justice, 2016; Wlodkowski & Ginsberg, 2017). Quality of curriculum, interactive classrooms, hands-on-learning, positive learning environment, the reputation of the instructor, and quality of instruction are factors identified by students which are critical to academic success (Sogunro, 2014; Wlodkowski & Ginsberg, 2017).

Researchers found the lecture method was still the most commonly used instructional delivery method in academic settings despite the method being passive, disconnected to student's needs, and lacking relevancy (Fink, 2013; Palis & Quiros, 2014). The lecture method is suited for large groups of students and is the least costly instructional delivery format (Palis & Quiros, 2014). Higher education administrators and educators are holding on to traditional pedagogy methods of teaching for the cost-effectiveness of instructing larger numbers of students and are resistant to change instructional habits (Fink, 2013; Knowles et al., 2015).

Knowles believed few institutions of higher education use andragogy models, and the institutions remain primarily teacher-centered based on organizational efficiency (Caruth, 2014). Higher education institutions are youth-centered and maintain instructors who use pedagogy strategies to teach traditional students, ages 18-24 years old (Chen, 2014). Instructional methods of pedagogy are often teacher-centered and require memorization as a means of information transfer (Caruth, 2014; Knowles et al., 2015).

Past formal educational experiences may have been negative for the nontraditional student based on teacher-centered authority or rote memorization assessments (Fink, 2013; Knowles et al., 2015). Negative experiences in learning environments make it difficult for learners to succeed (Knowles et al., 2015; Sogunro, 2015). Administrators of educational institutions must address nontraditional students' learning needs by switching from traditional pedagogy methods to adult learning approaches since adult learners constitute nearly half the population of higher education (Chen, 2014; Malm, 2018).

Nontraditional students are likely to enroll in college with educational goals to seek job skills, obtain a specific degree or certificate for employment purposes, or enhance their status in life (Zeit, 2014). Business and industry, military, for-profit workshops, and distance education programs utilize teaching techniques for adult learners more than traditional institutions of higher education (Bowers & Bergman, 2016). Instructors and trainers can be more effective in selecting appropriate instructional methods with an increased awareness of the adult learner's needs (Caruth, 2014).

The first design element for the instruction of the adult learner is creating a cooperative learning climate by circular seating arrangements, emphasizing learning is

pleasant, and offering to be supportive of creating an atmosphere of mutual trust

(Cochran & Brown, 2016; Knowles et al., 2015). Second is planning the goals mutually

between the learners and facilitators to aid in building commitments to which they have a

contributing role (Knowles et al., 2015). Mutually assessing learner needs and interests

and formulating learning objectives based on individual learner needs and interests are

the next two design elements (Cochran & Brown, 2016; Knowles et al., 2015).

Knowles' fifth design element is planning and following activities to achieve the

learning objectives (Knowles et al., 2015). Instructors should encourage learners to

identify resources and strategies to accomplish objectives (Merriam & Bierema, 2014).

The sixth element in the instructional design is carrying out the design to meet the

objectives (Knowles et al., 2015). Managing materials and resources, evaluating the

quality of the learning experience, and re-diagnosing learner needs for continued learning

completes the practices for instructors to use with adult learners (Knowles et al., 2015).

Adult learners have more complicated lives than children and learn better by case

studies of experiences and using problem-solving skills (Caruth, 2014; Chen, 2014;

Knowles et al., 2015). Additional andragogy principles identified by Knowles and still

accepted in the adult education community are the readiness to learn, orientation to

problem-based learning, and motivation to learn (Cochran & Brown, 2016). The adult

learner is more independent and will need to know the purpose behind the learning

objective for it to be worthwhile (Sogunro, 2015).

Life experiences of adult students help them to participate in class discussions and

apply lessons learned from life (Cochran & Brown, 2016). Adults enjoy solving

problems when the task is relevant and will help them deal with issues (Sogunro, 2015).

Problem-centered learning with the immediate application provides the adult learner with challenges to make the task authentic and worthwhile (Knowles et al., 2015). Selecting real-life problems as a learning strategy with adult students is different than a learning strategy for traditional academic test-taking situations (Conti, 2009). Internal motivation is a factor of personal responsibility the adult learner wants to meet to be successful (Knowles et al., 2015; Wlodkowski & Ginsberg, 2017).

Motivation in the adult learning environment is influenced by the awareness or feeling of inclusion, cultural acceptance, and a respectful social community (Wlodkowski & Ginsberg, 2017). Individual differences in adult learners and how each adult interacts with learning experiences requires flexibility in adapting theories and experiences for more significant impact on the adult learner (Knowles et al., 2015). Adult learners judge the teacher-student relationship early in the learning experience, and feeling safe in the learning environment allows increased cognitive and memory functioning (Wlodkowski & Ginsberg, 2017).

Adult learners have responsibilities and autonomy outside of the classroom, where they make decisions daily that affect people other than themselves (Cochran & Brown, 2016). Life experiences of adult learners can be both positive and negative in the learning environment (Bergman et al., 2014; Sogunro, 2015). Treating the adult learner with respect and acknowledging the value of his or her life experiences builds the student's confidence and encourages self-efficacy (Knowles et al., 2015; Wlodkowski & Ginsberg, 2017).

Andragogy learning theory characterizes adult learners with a readiness to learn, resulting in more of an active role in the learning process (Cochran & Brown, 2016).

Active participation in self-directed learning strategies include teachers designing

student-centered activities for the application of new concepts and new experiences

(Egizii, 2015). When learning new content, the adult learner draws on past experiences

as a resource to connect the application and retention of knowledge (Chen, 2014; King,

2017). The quality of the adult learner's experiences can be challenging and beneficial

(Knowles et al., 2015). Challenges of adult learners include different academic skill

levels and limited experiences in problem-solving or critical thinking (King, 2017). Past

successful academic experiences can motivate and empower the adult learner to accept

new challenges, overcome difficulties, and promote persistence in programs (Fink, 2013;

King, 2017).

The development of self-knowledge of interests, talents, and how they learn is

important for adult learners in gaining confidence and motivation to continue learning

(Caruth, 2014; Knowles et al., 2015). Self-directed learning strategies include teachers

designing student-centered activities for the application of new concepts (Egizii, 2015).

Adult learners prefer choices for flexibility because they tend to have barriers to

overcome, which traditional students do not (Chen, 2014). Positive reinforcing

environments enhance learning for adults (Knowles et al., 2015). When adult learners

can make meaningful choices related to their needs, their reflections are more intense and

learning more in-depth (Chen, 2014).

According to Chen (2014), three foundations of adult learning are having a

transformational personal development, being a self-directed learner, and critical

reflection. Adult learners can study the learning process; however, they learn by what

methods and interaction processes are best for them (Caruth, 2014; Illeris, 2018). To be

competitive in the 21st-century workforce, adult learners need to be more engaged in planning their own educational experiences and reflecting on the outcome of the experience (Caruth, 2014). Masika and Jones (2016) recommended reorganizing and enhancing student engagement processes, which contribute to improving retention and addressing the needs of diverse student groups.

Retention and Student Satisfaction

Student retention studies began over 40 years ago with the focus on the psychological preparedness, motivation, skills, and individual attributes of the student (Tinto, 2017). Tinto (2017) found through his research on retention, student involvement is crucial during the first year of college. Changes to student retention efforts occurred through the years with the realization factors outside of the college environment, as well as the involvement in the classroom, impact student retention (Dauer & Absher, 2015; Sogunro, 2015).

According to Bergman et al. (2014), administrators and student affairs professionals in higher education institutions need to know why students leave, but more important is to know what they can do to help students to persist to complete a degree. Nontraditional students lack the confidence and readiness traditional students have upon entering colleges and universities (Dauer & Absher, 2015). Classroom faculty are critical to increasing student retention, and yet most faculty members have little preparation in adult learning principles (Sogunro, 2015).

Student retention has become big business as student tuition generates revenue making it important for everyone, including administration, faculty, and staff to join in the collaborative efforts to help nontraditional students succeed (Bowers & Bergman,

2016). According to Dauer and Absher (2015), institutions can no longer continue to offer the same services in the same manner to all students because nontraditional students have diverse needs. Administration, faculty, and staff in higher education face a competitive market in today's global economy (Malm, 2018; Rubin, 2018).

In the past decade, higher education administrators experienced declining enrollment trends, while the cost for personnel, technology, and infrastructure increased (Malm, 2018). State and federal funding decreased during the last decade based on student enrollment, retention rates, and graduation rates (Malm, 2018). Guidelines from state and federal agencies emphasize increasing postsecondary degree attainment (Culp & Dungy, 2014). Therefore, higher education institutions must improve support for the increasing adult learner student population to be successful (Culp & Dungy, 2014).

Barriers to success in higher education reported by nontraditional adult students have included stress from financial obligations, family support, childcare arrangements, transportation, employment demands, and time management needed to balance family, work, and school (Grabowski et al., 2016). According to Markle (2015), years away from school, deficient study skills, new technologies, feelings of isolation, and time for degree completion also affect the nontraditional adult learner's participation and retention in higher education. Adult students may have academic issues such as poor academic preparation, few or no required courses offered at convenient times, or not understanding the expectations of instructors and commitments of being a student (Bergman et al., 2014).

Traditional students spend time involved in social activities on campus, such as sports and Greek life, while the nontraditional students' emphasis is more on the learning

experience (Grabowski et al., 2016). Obstacles for the adult learner can reduce the satisfaction with the college experience and includes such factors as students not feeling like they fit in socially, lacking access to technology, scheduling conflicts, and course availability (Goncalves & Trunk, 2014). Issues inhibiting academic success and satisfaction in the college experience by the nontraditional student include inflexibility of administrators regarding special issues of the nontraditional student, feelings of isolation, and a lack of student activities and organizations to meet the needs of nontraditional students (Goncalves & Trunk, 2014).

Improving retention and attrition rates. Adult learner needs are different, and attrition rates are higher than the traditional-aged student (Goncalves & Trunk, 2014). Retention rates are lower for students not satisfied with their experience in higher education (Bergman et al., 2014; Malm, 2018). Bergman et al. (2014) identified the influences and causes of student retention and attrition. Influences on student retention included academic advisement, faculty support, financial aid, flexible scheduling, online programming, flexible pacing of coursework, and student services (Bergman et al., 2014). Researchers identified reasons for student attrition, which included high cost, financial aid requirements or loss of financial aid, lack of confidence in academic abilities, lack of academic support, and overwhelming coursework in addition to working full-time (Bergman et al., 2014).

Manyanga, Sithole, and Hanson (2017) reviewed over eight decades of retention strategies. Retention strategies practiced and identified as critical factors for student success were student-faculty interaction, prompt feedback, active learning teaching methods, time-on-task, communication, high expectations, and respect for diversity

(Manyanga et al., 2017). Student retention and noncompletion are economic concerns internationally for both students and institutions (Masika & Jones, 2016).

When institutions are reactive and not proactive, this creates concern regarding retention policies (Manyanga et al., 2017). Many institutions base their students' first-year experience programs and orientation strategies on involvement to prevent student isolation and departure (Manyanga et al., 2017). In institutions where reductions of staff, faculty, and resources occur, it is still critical to provide engagement between faculty and students and peer-to-peer interactions, seek ways to cultivate for adult students a culture of belonging toward the institution, and encourage social identity with student groups (Masika & Jones, 2016).

Motivation, external or internal, is a critical factor for the success of adults to learn (Knowles et al., 2015). Adult learners return to school for various reasons, such as increased earning potential, career advancement, self-satisfaction, or to be a role model for a family member (Stevens, 2014). According to Stevens (2014), attentiveness to adult learners shown by instructors and advisors gives support and understanding for their life choices and pursuit of career goals.

Initiatives to encourage full-time attendance by students have been found to be successful in meeting the needs of adult learners on college campuses across the country (Center for Community College Student Engagement, 2017). Students attending full-time at college are more likely to be successful because they spend more time on campus and have greater opportunities to meet with other students and faculty to build connections outside of the classroom (Center for Community College Student

Engagement, 2017). Confidence level and readiness to learn are important factors in the academic success or attrition of adult students (Bruce-Sanford et al., 2015).

According to Lin (2016), research studies reviewed from the past two decades revealed major challenges for female adult learners. Challenges to female adult learners not experienced by traditional female students were multiple role responsibilities, a generation gap, communication, and little involvement in social experiences (Lin, 2016). Changes in the role of the mother, who is self-sacrificing and gives total commitment to caring for family members, is incompatible with the working mother's role in today's culture (Markle, 2015).

Female adult students in higher education face challenges of low self-confidence, lack of social support, insufficient family support, along with multiple role responsibilities (Lin, 2016). Significant challenges for nontraditional female students are responsibilities for young children and family commitments, which lead to anxiety, depression, and other issues influencing their academic experience (Lin, 2016). Women with higher grade point averages, part-time enrollment, and higher levels of confidence are likely to persist further toward completion of a degree (Markle, 2015).

Adult learners characteristically have more internal motivation to attain their educational goals than traditional students (Knowles et al., 2015). From research conducted on learning principles, it was discovered that intellectual power or ability does not decline with age, but the rate of learning declines (Knowles et al., 2015). Female adult learners have lower self-confidence in their learning ability and higher test anxiety than traditional female students (Lin, 2016).

Family support for female adult learners influences their retention and academic success in higher education (Lin, 2016). Faculty and peer social support positively impacts academic experiences and influences adult learner satisfaction (Lin, 2016). Academic performance, campus involvement, and satisfaction with the college experience improve with assistance from faculty and peers, support groups, and tutoring (Lin, 2016). Women reporting greater satisfaction in their higher education experience are more likely to persist to completion of their degree (Markle, 2015).

Research of nontraditional students yielded different expectations for men and women's roles as students (Markle, 2015). Women tend to feel guilty for taking time away from their family to study, while men do not report feeling guilty for neglecting their family responsibilities (Markle, 2015). Adult learner attitudes can influence behaviors in the learning environment and the expected outcomes (Illeris, 2018; Wlodkowski & Ginsberg, 2017). Men receive free time to study and do not report fewer responsibilities, while nontraditional female students report little or no change in household duties and responsibilities (Markle, 2015). Colleges and universities would benefit to assist female adult learners in ways to gain self-confidence in academic performance and balancing life, work experiences, and multiple family responsibilities (Lin, 2016).

Male nontraditional students considered their participation in higher education an investment in the family (Markle, 2015). Female nontraditional students considered their participation in higher education as an investment in personal achievement (Markle, 2015). According to Lin (2016), higher education counselors, faculty, and administrators would benefit if trained to assist female adult learners with their specific needs. Markle

(2015) found women experience no decrease in the expectations in their roles to raise children and manage households while participating as a student.

Instructors who are understanding and provide flexible schedules, alternate due dates, and relevant assignments have a significant influence on female adult learner retention (Lin, 2016). Student preparation for class impacts academic success and retention, and in one study, over 90% of adult students responded they had insufficient time to study (Stevens, 2014, p. 70). Faculty members who make positive connections with nontraditional students both in the classroom and through the campus environment for academic success and personal satisfaction tend to increase student retention (Lin, 2016).

According to Dutcher (2016), the faculty member's role is critical in the retention of nontraditional students. In Dutcher's study (2016), faculty and nontraditional students identified activities faculty conducted to improve retention of nontraditional students and how higher education institutions can support the faculty's work to duplicate the practices. Themes of faculty behaviors identified for supporting adult learning and retention were appropriate classroom time, instructor expertise, empathy, clarity, course work, and experiences along with building relationships (Dutcher, 2016; Illeris, 2018; Wlodkowski & Ginsberg, 2017).

From his study, Dutcher (2016) determined faculty support, encouragement of students, and building a sense of community increased nontraditional student retention. Also, nontraditional students reported relevant coursework and classroom experiences as significant reasons for retention (Dutcher, 2016). Nontraditional students' support from peers, academic experience, self-determination, and motivation from faculty members

were among the important factors identified on surveys for student retention (Dutcher, 2016; Johnson, Taasoobshirazi, Clark, Howell, & Breen, 2016). Higher education instructors need professional development using methods of andragogy to effectively teach and retain adult learners (Caruth, 2014; Dutcher, 2016; Knowles et al., 2015). Duplicating best practices to increase retention and meet nontraditional student needs are essential for higher education institutions to remain competitive (Dutcher, 2016).

Strategies which can improve student retention include having student-centered curricular, engaging activities at the institution, building on life experiences, accelerated learning programs, and accommodating class schedules (Bergman et al., 2014; Bowers & Bergman, 2016). Addressing the needs of nontraditional students to improve retention rates are challenges for educators (Grabowski et al., 2016). Successful academic and social experiences encourage students to persist in their goal to complete a degree or certificate (Sogunro, 2015).

Study groups and group projects are identified as education enhancement factors for adult learners (Stevens, 2014). According to Stevens (2014), over 90% of survey participants preferred participating in group work voluntarily, with more than 70% opposed being assigned to a group project by the instructor (p. 72). If a student experiences rejection by faculty, administration, or peers, he or she is more likely to seek a more supportive learning environment (Grabowski et al., 2016). Rabourn, BrckaLorenz, and Shoup (2018) found adult learners often begin at one institution and transfer to another institution before finishing a degree. Many students experience stress as they try to balance student responsibilities with those of family and work (Markle, 2015).

Student satisfaction. Adult learners are looking for student services such as advising and career centers, evening and weekend office hours, childcare on campus, support groups, family-friendly activities, and customer service (Rodgers, 2016). Faculty may create a stimulating classroom learning environment with mutual trust and engaging activities, but the lack of student support outside the classroom can negatively impact student satisfaction and evaluation of the college experience (Sogunro, 2015). College administrators utilize satisfaction surveys to attain student perceptions of the campus experience, identify where the institution is performing well, and determine areas for improvement, including retention efforts (Rodgers, 2016). Strengths and weaknesses can be analyzed from the surveys to prioritize resources for students (Rodgers, 2016).

According to Noel-Levitz (2016), adult learners in over 50 colleges and universities identified needs which contribute to satisfaction and retention (p. 1). Universities and colleges need to emphasize career counseling, resources for study skills, online resources, and affordability to improve the satisfaction of adult learners (Noel-Levitz, 2016). Serving the needs of adult learners requires more than just providing services, colleges and universities must encourage nontraditional students to use support programs available (Dauer & Absher, 2015).

Stevens (2014) conducted a longitudinal study of adult learner perceptions, attitudes, and preferences of learning in higher education over three years across six regions in the United States. According to Stevens (2014), of the participants completing the self-report instrument, *Adult Learner Assessment Trending,* over 75% did not feel the higher education systems in place were meeting their needs (p. 65). Schroeder and

Terras (2015) found the advising needs of graduate adult learners are different and more complex than those of traditional students.

According to Bruce-Sanford et al. (2015), adult students are more satisfied with the institution and complete their degree if they feel socially connected with support and understand the processes of college campuses. Instructor support through giving specific directions, providing encouraging feedback, academic advising for educational options, or providing access to grades can keep students enrolled and ensure their academic success when they feel a personal connection (MacDonald, 2018). Adult learners prefer instructors who integrate content and instructional strategies with adult learners' work experience (Stevens, 2014).

Adult learners look for institutions offering flexibility in scheduling, personalized instruction, and instructors and staff members who support students' needs (MacDonald, 2018). According to Stevens (2014), over 70% of adult learners select institutions by reputation (p. 72). Adult learners are more consumer-oriented and ranked higher satisfaction with schools which offered deferred payment options, refund policies, and financial aid for part-time students (Stevens, 2014).

Bruce-Sanford et al. (2015) identified services that could help meet nontraditional students' needs to enhance the feeling for students the institution cares about them, such as extending the workday for services and scheduling early and late hours or weekends for students. The flexibility of scheduling to accommodate work schedules and application of the education and training to their current job were high priorities of adult learners in student satisfaction and retention (Stevens, 2014). The instructional delivery design service the adult learners identified most favorable were online courses with

blended courses as the delivery format preferred by almost 90% of survey participants (Stevens, 2014, p. 76). According to Noel-Levitz (2016), 57% of adult learners preferred to attend classes and complete their studies on campus, while 35% preferred online classes (p. 15).

According to Hyun, Ediger, and Lee (2017), student satisfaction in the learning process of adult learners in the group and individual settings can improve with student engagement and active learning activities. Noel-Levitz (2016) identified the highest attrition rate for adult learners was 30% and occurred between the term two and term three census day (p. 4). Contributing factors for increased attrition rates were significant challenges for adult learners of reading, test-taking, and math skills (Noel-Levitz, 2016). According to Dauer and Absher (2015), persistence to completion for adult students is impacted more by the campus environment than other factors.

Dauer and Absher (2015) found more than half of the nontraditional students responding to the survey perceived their institutions as lacking in providing support for them to succeed socially while at the college or university. Ways to support students and build relationships can be accomplished by communicating with the student, remembering the student's name or their child's name, and recognizing past life experiences as necessary in their development (MacDonald, 2018). Adult students want to be treated and respected as adults (Markle, 2015).

Summary

Nontraditional adult student populations continue to increase on campuses of higher education (Malm, 2018). Adult learners have many characteristics and have different learning needs (Knowles et al., 2015). Adult learners should be taught using

appropriate and effective instructional strategies (Caruth, 2014). Adult education, as promoted by Lindeman, provided a way to address social injustices and provide a sense of equality but also promote personal change through self-actualization (Rachal, 2015).

According to Rachal (2015), Lindeman and Knowles had similar ideas about adult education in addition to the self-actualization of the individual. Both Lindeman and Knowles believed adult education to be a life-long process, to use learner-directed collaborative methods, and to use problem-solving to address life experiences (Rachal, 2015). Lindeman and Knowles discussed the different methods of teaching children and teaching adults (Henschke, 2016).

Many educators use pedagogy methods of teacher-centered learning for both traditional and nontraditional adult learners (Knowles et al., 2015). However, andragogy methods of learner-centered instructional strategies are best suited to adult learner needs (Knowles et al., 2015). According to Caruth (2014), practices in adult learning were previously researched more than the teaching of adults. Connections through technology allow research studies of new approaches to adult learning, learning theories, and instructional strategies to be conveniently disseminated internationally (King, 2017; Merriam, 2017). Continuous change in the digital age places new demands and motivation for adult learners to maintain competencies in relationships, communications, global awareness, and in the workplace (King, 2017).

Motivations for adult learners to pursue degrees or continue their education vary, including improving the socio-economic status, increasing knowledge and skills, and advancing professionally (Luke & Justice, 2016). Nontraditional students and traditional students report experiencing different stressors in their educational pursuits (Tilley,

2014). Experiences in the classroom contribute to high-level stressors for the nontraditional students, which impact learning (Tilley, 2014). Motivation influences adult learners during instruction and contributes to the learning environment (Luke & Justice, 2016).

Nontraditional student enrollment continues to increase on campuses; however, colleges struggle with improving the persistence to graduation rates of this population (Culp & Dungy, 2014). Adult learners are challenged by family obligations, financial and work responsibilities, and strive to overcome issues of computer literacy, writing and study skills, and self-efficacy (Wlodkowski & Ginsberg, 2017). Student retention strategies have been developed for educators and student affairs professionals to be used with nontraditional adult learners for success both inside and outside the classroom (Caruth, 2014).

Tinto (2017) identified the importance of faculty regarding student retention efforts and recommended integrating the research on student learning to connect with efforts of improving student retention. Adult learners are motivated by different factors such as flexibility and convenience when enrolling in college and continuing to graduation (Wlodkowski & Ginsberg, 2017). In higher education, understanding the adult learner's perspective and level of satisfaction with the current instruction is critical (Sogunro, 2015).

Chapter Two was a review of the literature related to nontraditional adult college students, the theoretical framework of adult learning theories of andragogy, self-directed learning, and transformative learning, as well as adult learner characteristics and effective

instructional strategies for adult learners. The last topics reviewed were retention and student satisfaction and the importance of both to the college administrators and faculty.

In Chapter Three, the problem and purpose of the study are reviewed. The research questions and hypotheses are provided. Next, the rationale for selecting a quantitative method is discussed, and the population, sample, and instrument chosen for the study are described. Detailed are procedures for data collection and data analysis. Ethical considerations are delineated.

Chapter Three: Methodology

The objective of this quantitative study was to gather data to compare the differences in perceptions of instructors and students of the instructional practices reported being used in higher education. Data were analyzed using inferential statistics. Results of this study provided supporting evidence to the knowledge base and theoretical framework of Knowles' adult learning principles. The study included data reported by students of the integration of andragogy principles and practices in the learning environment which contribute to learner satisfaction and retention in higher education experiences.

Researchers have reported various challenges are experienced by nontraditional students to persist in higher education (Bergman et al., 2014; Bowers & Bergman, 2016; Osam et al., 2017). According to Bowers and Bergman (2016), nontraditional students often must overcome additional obstacles not faced by their traditional student peers. Experiences in seeking a college degree are also used to define the nontraditional population and may refer to their race or gender, residence on or off campus, level of employment, and type of degree program (Bowers & Bergman, 2016). Characteristics used to identify nontraditional students in addition to being over 25 years old include: delayed enrollment in higher education, worked full time, financially independent, had dependents, single parent, and no high school diploma (Grabowski et al., 2016; Markle, 2015). According to Goncalves and Trunk (2014), the same characteristics that identify a student as nontraditional are also obstacles for the student to overcome when attending college.

Students with obstacles and responsibilities outside of the college environment have more to overcome than the traditional students to be successful (Goncalves & Trunk, 2014). Environmental challenges and responsibilities of nontraditional students include lack of child care, job demands, family commitments, and financial decisions (Bowers & Bergman, 2016). Nontraditional students who overcame their environmental challenges reported factors such as faculty support, academic advising, and flexible course options as key factors in the decision to stay in college (Bergman et al., 2014).

An awareness of factors students reported contributing to learner satisfaction and retention can aid in the development of retention strategies by higher education administrators and faculty (Markle, 2015). The results of this study provided a better understanding of the nontraditional student perception of instructional practices and their potential impact on retention rates.

Problem and Purpose Overview

The problem is nontraditional students in higher education experience obstacles and adversities to obtaining a college degree that traditional students do not face. Instructional strategies for teaching adult learners and principles of adult learning are different than those used in college classrooms with traditional students. As nontraditional adult student enrollment increases on college campuses across the country, the needs of adult learners must be addressed (Markle, 2015). The purpose of this research was to explore a previously unexamined aspect of nontraditional student adversity, which is the instructional style of the higher education faculty.

Core adult learning principles including the need to know, self-concept and prior experiences of the learner, readiness to learn, orientation and motivation to learn will apply to all learning situations and types of learning environments (Knowles et al., 2015). Researchers have studied adult learning principles and teaching techniques that address adult learning styles (Chen, 2014; Knowles et al., 2015; Merriam & Bierema, 2014). Few studies were located regarding the application of instructional delivery methods, focused learning environments, and support services nontraditional students perceive to be useful and relevant to the higher education experience (Chen, 2014).

Wilson (2005) reported a gap in adult learning research exists due to the lack of a specific measurement tool for testing the application of adult learning principles. The purpose of this research was to collect and analyze data on the instructional practices instructors and students report are used and what learning experiences nontraditional students report as preferred for their academic success. During the past five decades, research studies examined the merits of instructional strategies for use with adult learners (Knowles et al., 2015; Nessipbayeva & Egger, 2015; Williams, Walter, Henderson, & Beach, 2015). However, there is less research on reported instructional practices used and experienced by nontraditional adult learners on two-year college campuses (Williams et al., 2015).

According to Conti (2004), an educator's philosophy of teaching influences their teaching style. Merriam and Bierema (2014) described the importance of the educator identifying their philosophical foundation as a major component of successful adult education practices. The educator's philosophy of teaching is defined as their basic belief system about teaching and learning, which guides them in each situation (Merriam &

Bierema, 2014). In this study, instructors and nontraditional students reported what

instructional strategies are used in higher education classrooms. Students reported the

satisfaction of instructional strategies incorporated into courses.

Research questions and hypotheses. The following research questions guided

the study.

1. What strategies related to adult learning principles do college instructors report

using in their classrooms, as measured by the Principles of Adult Learning Scale

(Conti, 2004)?

2. What strategies related to adult learning principles do college students report

the instructors use in the classes they have taken, as measured by the Adapted

Principles of Adult Learning Scale (Conti, 2004)?

3. What differences exist between adult learning principles reported to be used

by faculty members as measured by the Principles of Adult Learning Scale

(Conti, 2004) and the adult learning principles experienced by students in their

classroom experiences as measured by the Adapted Principles of Adult Learning

Scale (Conti, 2004)?

$H3_0$: There is no difference between the adult learning principles the instructors

report as measured by the Principles of Adult Learning Scale (Conti, 2004) and

the adult learning principles reported by students to be used in their classrooms,

as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004).

$H3_a$: There is a significant difference between the adult learning principles

instructors report as measured by the Principles of Adult Learning Scale (Conti,

2004) and the adult learning principles reported by students to be used in their

classrooms, as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004).

4. What differences exist between adult learning principles reported to be used by faculty members as measured by the Principles of Adult Learning Scale (Conti, 2004) and the adult learning principles experienced by nontraditional students in their classroom experiences as measures by the Adapted Principles of Adult Learning Scale (Conti, 2004)?

H4₀: There is no difference between the adult learning principles the instructors report as measured by the Principles of Adult Learning Scale (Conti, 2004) and the adult learning principles reported by nontraditional students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004).

H4ₐ: There is a significant difference between the adult learning principles instructors report as measured by the Principles of Adult Learning Scale (Conti, 2004) and the adult learning principles reported by nontraditional students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale (Conti, 2004).

Rationale for Quantitative Research

Quantitative research collects numeric data which can be used to generalize results from a small number to a more significant number of people (Creswell, 2014; Fraenkel et al., 2015). Following standardized procedures and using instruments with preset questions and responses prevents personal bias and researcher values from influencing the results (Creswell, 2014). Using instruments which have proven reliability

and validity is a characteristic of quantitative research (Creswell, 2014; Fraenkel et al., 2015). The selection of the instrument with proven reliability and validity through prior research provides a way to measure variables and test hypotheses in new situations (Creswell, 2014). Analysis of data in quantitative research is an objective approach (Creswell, 2014; Fraenkel et al., 2015). Using descriptive and inferential statistics to analyze the data of the study will provide a base for future research.

Research Design

Quantitative research utilizing a causal-comparative type of study was selected as the most appropriate methodology. After reviewing descriptions of research methods for quantitative, qualitative, and mixed methods, quantitative research had more characteristics that matched the researcher's plan of study. Identifiers of the quantitative research are the type of data collected, such as the performance, attitude, observational, and census, including the statistical analysis and interpretation of the data (Creswell, 2014).

The survey for this study was designed to gather opinions from self-reports of participants in the higher education experience toward the outcome of learner satisfaction and retention. According to Creswell (2014), self-report opinions are used in learning about trends of a population rather than predicting relationships between variables. Data analysis and interpretations of the descriptive data in this study may identify further research is needed. Causal-comparative research explores the cause or consequences that already exist between groups and allows the researcher to offer explanations or predictions from either variable to the other (Fraenkel et al., 2015). In this study,

instructors and students self-report adult learning principles, instructional design elements, and student learner satisfaction with the learning environment.

A survey research methodology was used to gather self-reports of information from instructors and students. The quantitative data were analyzed using descriptive and inferential statistics. According to Creswell (2014), survey methodology provides a way to attain the perceptions of a group of people on a topic or issue. The survey research method allows for gathering preliminary information, attaining a larger group response, maintaining the anonymity of participants, and more honest and complete answers as opposed to answers in a qualitative interview (Fraenkel et al., 2015).

Surveys are efficient and offer a cost-effective means of gathering information from members of a population by mail, telephone, face-to-face, or electronically (Creswell, 2014; Fraenkel et al., 2015). The closed-ended question survey or questionnaire uses a pre-determined series of questions or answers for participants to choose (Creswell, 2014). The respondents may choose to answer in their words in the open-ended question survey (Creswell, 2014). The survey method was selected as the appropriate method for this study to collect the data from instructors and students.

Population and Sample

The total population of nontraditional students on the two-year open enrollment rural, public Midwestern campus was approximately 570 students based on the data extracted from the internal census report of the Institutional Research Office of Academic Affairs (2017, p. 1). Nontraditional students enrolled in the Associate of Arts in General Studies classes were estimated to be 10% of the total campus population (Institutional Research Office of Academic Affairs, 2017, p. 1). The populations for this study were

based on two groups, nontraditional students and faculty members. A sample of the nontraditional students who met one or more of the following criteria were surveyed: delayed enrollment following high school, attended part-time, worked full-time, was considered financially independent, had dependents other than a spouse, was a single parent, completed high school with a GED, or was age 25 or older. The sample student group were all nontraditional students who had completed at least one semester at the two-year rural, public Midwestern, open-enrollment college.

The second sample was taken from full-time and part-time instructors who had taught courses for a minimum of three years in Associate of Arts in General Studies. The selection of the classes and instructors within the general education division aligns with the definition of cluster random sampling (Fraenkel et al., 2015). According to Fraenkel et al. (2015), an accessible population is a population to which a researcher can generalize the results of a study. This study utilized an accessible population of the instructors and nontraditional students on the two-year, open enrollment campus.

Instrumentation

In this study, a self-report instrument was used for instructors and students to identify elements or principles of adult learning experiences in the classroom. In studying a sample of a population through a survey instrument, various trends, opinions, and attitudes can be collected for generalization from the sample back to the population (Creswell, 2014). Descriptive and inferential statistics were used in this study. A comparison of the data was made between the instructors' and student responses on the self-report surveys.

The survey for this study was used to gather opinions from self-reports of participants, instructors, and students, regarding adult learning principles in the higher education classroom experience. According to Creswell (2014), self-report opinions are used in learning about trends of a population rather than predicting relationships between variables. Data analysis and interpretations of the descriptive data in this study may identify further research that is needed. Causal-comparative research explores the cause or consequences that already exist between groups and allows the researcher to offer explanations or predictions from either variable to the other (Fraenkel et al., 2015). In this study, instrument-based questions were used to self-report integrated adult learning principles, instructional design and delivery, and student learner satisfaction or preferences of the learning environment. Conti (2004) referred to the survey questions as questions; therefore, the same terminology was used when discussing the instrument and results.

Two different instruments were used for this research. The survey instrument selected for the faculty was the Principles of Adult Learning Scale (Conti, 2004). The second instrument was an Adapted Principles of Adult Learning Scale (Conti, 2004) administered to the students to collect data pertaining to the teaching style of faculty members in courses in which they have been enrolled. The Adapted Principles of Adult Learning Scale was reviewed by two juries of experts and through field tests for content validity (Knowles et al., 2015). The Adapted Principles of Adult Learning Scale modifies the questions on the Principles of Adult Learning Scale from the faculty member's perspective to the student's perspective. Permission was granted by the

developer of the survey, Gary Conti, to use the Principles of Adult Learning Scale as the instrument for this study (see Appendix A).

Instructor survey questions refer to the adult learning principles such as the learning environment, personalized instruction, collaborative planning of learning objectives related to student experiences, types of learning activities, and evaluation methods (Merriam & Bierema, 2014). Research of teaching styles is the focus of Adult Learning Principles rather than specific principles of andragogy (Knowles et al., 2015). Faculty members tend to rate their use of andragogy principles higher than students rate the instructor's use of the andragogy principles (Knowles et al., 2015).

Caruth (2014) identified various research and instruments designed to assess andragogy practices to meet the needs of older students over the past five decades. Wilson (2005) designed and tested Adult Learning Principles Design Elements Questionnaire for six andragogy principles and eight andragogy design element processes. Caruth (2014) recommended further research is needed to study the effect of andragogy and the orientation of learning and learner satisfaction. Ekoto and Gaikwad (2015) developed a measurement instrument that was needed due to the reported lack of andragogy and learning satisfaction. The measurement tool designed was named Perception, Experiences, and Learning Satisfaction of Knowles' Andragogy and Theory Questionnaire for graduate students, but it appears not many instruments have been developed to measure the relationship between learner satisfaction and andragogy (Ekoto & Gaikwad, 2015).

A review of prior studies of the adult learner and instructor surveys provides a foundation for the utilization of the survey tool for both instructors and students.

According to Fraenkel et al. (2015), the reliability of an instrument or from one instrument to another is the consistency of scores or answers. Principles of Adult Learning Scale and the Adapted Principles of Adult Learning Scale developed by Conti to identify teaching styles met content validity measures (Knowles et al., 2015).

Data Collection

Procedures and protocols of the Institution Review Board were followed for the completion of this study. A letter explaining the purpose of the study and requesting approval was sent to the Chancellor (see Appendix B) of the rural, public Midwestern university. Permission to conduct the study was granted from the rural, public Midwestern university (see Appendix C). Following research approval from the Lindenwood University Institutional Review Board (see Appendix D) and the review board at the Midwestern public university (see Appendix E), steps for data collection began.

A request was made for a list of the nontraditional adult students and their contact information for the sample population of students. The request was made to the Institutional Research Department of the two-year, open enrollment campus (see Appendix F). Ekoto and Gaikwad (2015), recommended factors other than gender, marital status, a program of study, age, a field of study, and coursework completion be studied to identify if any connections between andragogy and learner satisfaction exist.

Recruitment materials were distributed to participants in the study. Included in the recruitment materials for potential participants was a letter of introduction for the students (see Appendix G) and for the faculty (see Appendix H). Participants received an Informed Consent Form (see Appendix I) describing the purpose of research, possible

risks, and the option to withdraw from the study at any time without negative effects. Student surveys for the Adapted Principles of Adult Learning Scale (see Appendix J) and instructor surveys using the Principles of Adult Learning Scale (see Appendix K) were delivered electronically. If the students and instructors chose to participate in the study, a link was provided to the students and instructors in the email requesting participation and connected directly to the survey.

Instructors and students were asked to use the link in the invitation letter to log into the survey. After logging into the survey, the participants were given the adult consent form in an electronic format and the option to continue with the survey. Completion of the survey of 44 items was estimated to take approximately five to 10 minutes. A hard copy was available if an individual preferred and requested to complete the survey in a traditional manner. Surveys completed by participants remained anonymous to the researcher. A reminder for completion or participation in the survey was sent when sufficient participation was not obtained after two weeks of the original distribution date. Qualtrics (2018) survey software was utilized to analyze data in addition to descriptive statistics for the survey responses. After responses were garnered, data analysis began.

Data Analysis

Descriptive and inferential data analysis were used in this study. Fraenkel et al. (2015) identified quantitative data and categorical data as two fundamental types of numerical data a researcher can collect. The Likert-scale survey questions developed for students and instructors were assigned numerical values. Numerical values are used to perform *t*-tests for inferential statistical analysis (Bluman, 2015).

Survey responses to the Principles of Adult Learning Scale were analyzed by measures of the frequency with which the instructor utilized a teaching-learning principle based on a 6-point Likert scale. Response options on the 44-item survey were calculated with point values of Always = 0; Almost Always = 1; Often = 2; Seldom = 3; Almost Never = 4; and, Never = 5 (Conti, 2004). A total survey score and scores for the seven factors which make up a major part of the questions of teaching style based on learning principles were calculated using the Scoring the Principles of Adult Learning Scale (see Appendix L). The scores and means of the seven factors were statistically analyzed for the faculty responses and the student responses.

Descriptive analysis was completed for research question one for strategies related to adult learning principles college instructors report using in their classrooms, as measured by the Principles of Adult Learning Scale. Research question two was analyzed using descriptive analysis of the adult learning principles students report experiencing in their college classrooms. Inferential statistical procedures for this study were conducted using a two sample independent t-test based on survey results from the students and faculty for research questions three and four. According to Bluman (2015), the t-test can be used when testing between two means of independent samples for significant differences.

The means of the Principles of Adult Learning Scale from faculty surveys and means of the Adapted Principles of Adult Learning Scale from student surveys of their classroom experiences were applied to a two sample independent t-test to answer research question three. A two sample independent t-test, using the mean scores of the faculty members as measured by the Principles of Adult Learning Scale and the mean

scores of nontraditional students as measured by the Adapted Principles of Adult

Learning Scale, was applied to respond to research question four.

Ethical Considerations

Informed consent was obtained from all participants. Participants received

information regarding the purpose of the study and a voluntary agreement for research

participation (Fraenkel et al., 2015). To assure confidentiality, all data and documents

collected during the research were electronically secured. All digital files are protected

with a password. The researcher's computer used was on a secured network and kept in a

secured location. Creswell (2014), recommended all documents be destroyed after five

years from the completion of the research project.

The invitation letter provided a link to the online survey for the volunteer

participants to complete. The study was conducted through Qualtrics survey software.

According to Creswell (2014), questionnaires through websites are becoming popular.

Software programs can be used to design, collect, and analyze data (Creswell, 2014).

Prior to the distribution of recruitment information for the survey instrument, the

researcher completed the National Institute of Health test for protecting human research

participants. Approval was requested by a proposal presented to the Dissertation Review

Committee. Approval was sought from the Institutional Review Boards for Lindenwood

University and the rural, public Midwestern university where the study took place.

Summary

Adult student enrollments continue to increase on college campuses and are

expected to continue to rise. Research conducted on learning strategies found children

learn differently than adults, and teaching strategies for adults should be focused on adult

learning principles and teaching techniques to be more effective for the learner (Chen, 2014; Knowles et al., 2015). The research questions guiding this study were focused on the integration of andragogy principles and instructional design elements that enhance adult learner satisfaction and persistence in higher education. A quantitative research method using survey methodology was used to collect data regarding the integration of andragogy principles and instructional design elements self-reported by instructors and students regarding the learning environment and learner satisfaction.

In Chapter Four, the scores from the surveys are disclosed. Descriptive statistics were calculated to answer research questions one and two. Inferential statistics were applied to respond to research questions three and four.

Chapter Four: Analysis of Data

The purpose of the study was to collect data regarding the adult learning principles used by instructors with nontraditional students for academic success and retention in higher education. A quantitative method was selected for the study. The Principles of Adult Learning Scale was selected as the survey instrument for the instructors with the adaptations made for students' perspectives. Content validity and reliability for the Principles of Adult Learning Scale was established through field testing and a jury of adult education professors (Conti, 2004).

The survey instrument was divided into seven factors related to the teaching style of the instructor: learner-centered activities, personalizing instruction, relating to experience, assessing student needs, climate building, participation in the learning process, and flexibility for personal development. Descriptive statistics of the mean and standard deviation of each of the seven factor groups were calculated and compared to the values identified by Conti in the original study.

The study was focused on adult learning experiences of nontraditional students at a rural, public two-year Midwestern University. Approval was granted by the Institutional Review Boards for a maximum number of 150 participants. There were 36 instructors and 114 nontraditional students invited to participate in the study.

Descriptive statistics were used to analyze the data obtained using the Principles of Adult Learning Scale to identify the adult learning principles reported by the faculty to be used in their classrooms. Data garnered from students regarding experiences in the classroom were obtained using the Adapted Principles of Adult Learning Scale. Both self-report instruments were formatted using the same six response type of Likert-scale

for the 44 items. Responses of the Likert-scale were: Always, Almost always, Often, Seldom, Almost never and Never. Numeric values were given to each response for scoring and analytical purposes. The Principles of Adult Learning Scale had 24 items identified as positive questions and 20 questions identified as negative items, according to the developer (Conti, 2004).

The positive questions were 1, 3, 5, 8, 10, 14, 15, 17, 18, 20, 22, 23, 24, 25, 28, 31, 32, 34, 35, 36, 39, 42, 43, and 44 (Conti, 2004). Positive questions were scored on the Likert-scale as follows: 5 = Always, 4 = Almost always, 3 = Often, 2 = Seldom, 1 = Almost never, and 0 = Never (Conti, 2004). The negative questions were 2, 4, 6, 7, 9, 11, 12, 13, 16, 19, 21, 26, 27, 29, 30, 33, 37, 38, 40, and 41 (Conti, 2004). Negative questions were scored on the Likert-scale as follows: 0 = Always, 1 = Almost always, 2 = Often, 3 = Seldom, 4 = Almost never, and 5 = Never (Conti, 2004). Items that were skipped or missed are given a neutral value of 2.5 (Conti, 2004).

Scores for the 44 items were used to calculate an overall score which can be compared to the normed score of the Principles of Adult Learning Scale survey to indicate the overall teaching style of the instructor. Survey scores consist of one overall score and individual scores for each of the seven factors. Adding the scores for each of the seven factors establishes the overall score for the survey.

Survey scores of the Principles of Adult Learning Scale can range between 0-220. Overall scores between 0-145 are indicative of a more teacher-centered approach (Conti, 2004). Overall scores between 146 and 220, are more characteristic of a collaborative learner-centered approach (Conti, 2004). The mean score for the Principles of Adult Learning Scale is 146, with a standard deviation of 20 (Conti, 2004).

Numeric values for the survey responses identified the measure of frequency for the adult learning principles reported by the faculty to be present in the classroom. Student responses on the Adapted Principles of Adult Learning Scale had numeric values used to establish the measure of frequency for the teaching and learning experiences reported by students in the classroom. The Qualtrics (2018) software program and Excel were used to analyze data and descriptive statistics for the survey responses.

A two-week time frame was set for checking the participation in the survey. During the two-week period, the survey received low participation from instructors and students. The same list of potential participants received another invitation to participate in the survey.

Of the 36 instructors and 114 students receiving the invitation to participate in the study, 10 potential faculty participants and 10 student respondents opened the consent page for the survey but did not take the survey. When the blank responses were opened, an error message appeared indicating the questions were not displayed to the participant. The blank responses were omitted in the analysis of the data.

Of the nontraditional students invited to participate in the study, 21% ($n = 24$) completed the survey. Low participation in the study by the nontraditional students may limit the application of results to other populations. Of the instructors invited to participate in the study, 72% ($n = 26$) completed the survey.

Scores on Principles of Adult Learning Scale

In the analysis of the overall scores on the Principles of Adult Learning Scale, the instructors' total scores ranged between 98 to 148, with a mode of 124 and mean score of 126. The total scores for 88% of the instructors fell below the normed average score of

the instrument of 146, placing their instructional style in the teacher-centered category, while 12% of the faculty scored 146 or above, indicating their teaching style was in the learner-centered category (see Figure 1). The standard deviation for the group of instructors was 14.5, which was below the normed standard deviation of 20 for the Principles of Adult Learning Scale (Conti, 2004).
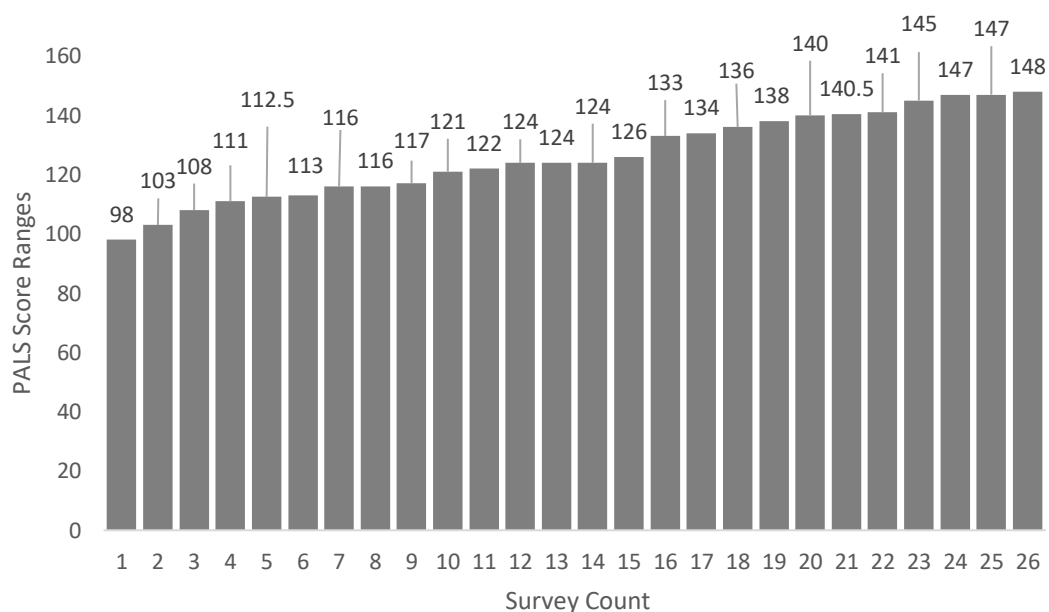
Figure 1. Distribution of faculty scores for Principles of Adult Learning Scale. Numbers represent the overall scores ranging between 98 and 148 for the faculty ($n = 26$) completing the survey. Possible score totals can range between 0-220.

The data for the overall scores of the student group completing the Adapted Principles of Adult Learning Scale indicated a range between 81 and 137. Students reported their experiences in the classrooms where instructors used a teacher-centered instructional style. The mean score for the Adapted Principles of Adult Learning Scale

was 110 with a mode of 112. The standard deviation for the overall scores of the

Adapted Principles of Adult Learning Scale was 15.17 (see Figure 2).
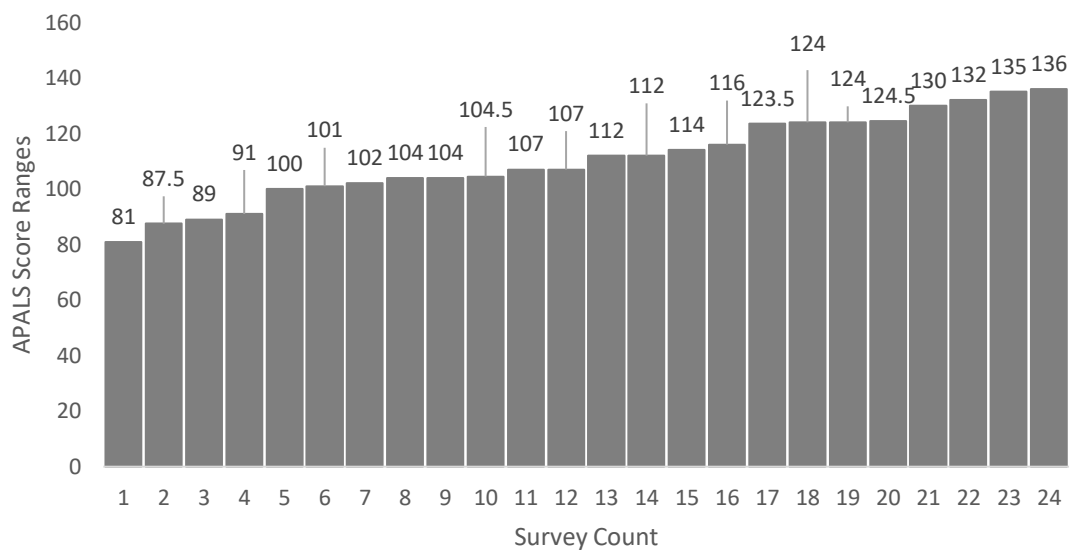
Figure 2. Distribution of student total scores on the Adapted Principles of Adult

Learning Scale. The column numbers represent the range of overall total scores of

students (*n* = 24) completing the Adapted Principles of Adult Learning Scale survey.

Possible score ranges can be between 0-220.

The bar chart in Figure 3 shows the frequency distribution of total scores for

students completing the Adapted Principles of Adult Learning Scale. The number of

students completing the survey was 24 (*n* = 24). Total student scores ranged between 81

and 136. The mode for the student scores was 112, and the mean was 111.83.
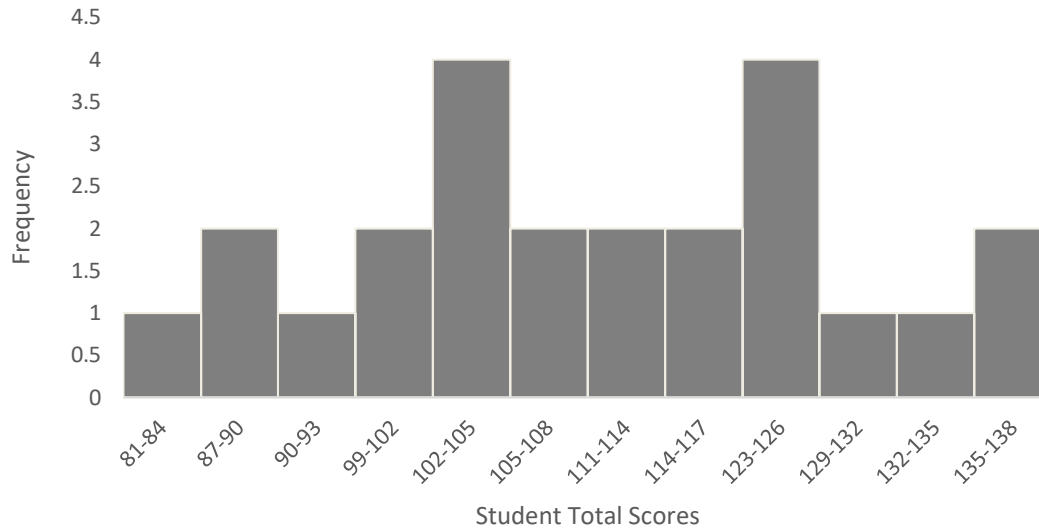
Figure 3. Distribution of frequency and student total scores for the Adapted Principles of Adult Learning Scale. $n = 24$.

The frequency distribution of total scores for the 26 faculty members ($n = 26$) completing the Principles of Adult Learning Scale ranged between 98 to 147. The mode for the total faculty scores was 147, and the mean of the total faculty scores was 126 (see Figure 4).
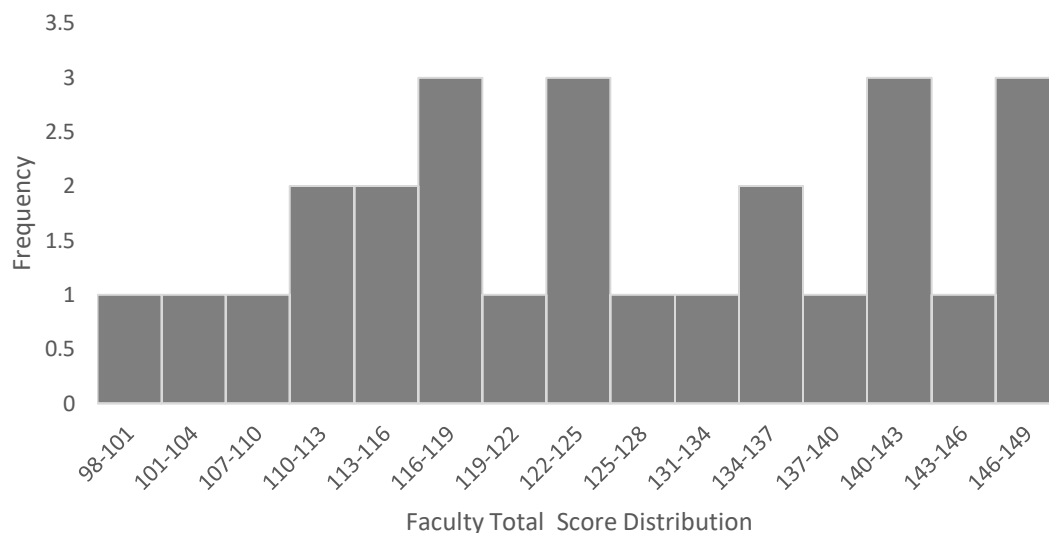
Figure 4. Distribution of frequency for faculty total scores for the Principles of Adult Learning Scale. *n* = 26.

Factor 1, Learner-Centered Activities, refers to a focus on the student learner (Conti, 2004). Factor 1 has 12 items with scores for this factor ranging between 0 to 60, and the calculated mean for Factor 1 is 38, with a standard deviation of 8.3 (Conti, 2004). Total scores for faculty on the Principles of Adult Learning Scale for Factor 1 ranged between 27 and 53, with a median score of 36 and mode of 33 (see Figure 5). The mean for faculty scores in Factor 1 was 36.58 with a standard deviation of 6.33, which was below the normed mean of 38 and standard deviation of 8.3 for the Principles of Adult Learning Scale. The faculty mean was .17 below the normed mean for Factor 1 (38 - 36.58 = 1.42 / 8.3 = .17).

Total score distributions for students completing the Adapted Principles of Adult Learning Scale for Factor 1, Learner-Centered Activities, ranged between 4 and 60. Student total scores had a median score of 32 and mode of 25. The student mean for Factor 1 scores was 31.90 with a standard deviation of 11.68. The mean for student

scores in Factor 1, Learner-Centered Activities, was .73 below the normed mean of 38

and standard deviation of 8.3 (38 - 31.90 = 6.1 /8.3 = .73).
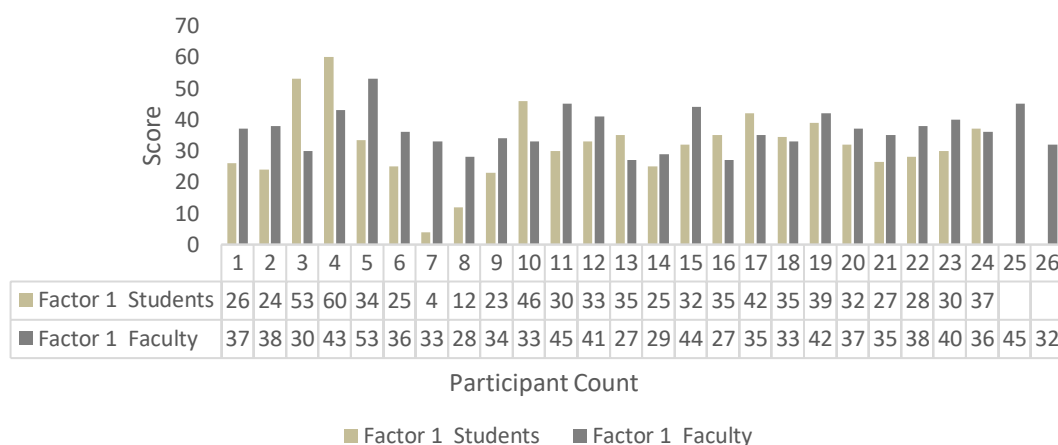
Figure 5. Distribution of scores for Factor 1: Learner-Centered Activities of the

Principles of Adult Learning Scale for students and faculty.

The graph in Figure 6 for Factor 1, Learner-Centered Activities displays the

means reported for the 12 items of Factor 1 questions for both the students and faculty.

Learner-Centered Activities reported included planning educational objectives with the

learner, using various teaching methods for adult learners, and using educational

materials designed for use with adult learners. Performance measures and assessment

strategies encouraging learners to work toward educational goals and personal growth are

also part of Factor 1. Learner-centered activities identified in Factor 1 included

collaboration methods used in the classroom and for performance measures. Higher

scores in this factor indicate collaborative learner-centered activities, and lower scores in

this category indicate teacher-centered activities (Conti, 2004).

	2	4	11	12	13	16	19	21	29	30	38	40
■ Students Mean	2.67	3.71	2.25	3.14	3.29	2.96	1.29	1.85	2.08	1.83	3.96	2.85
■ Faculty Mean	2.31	3.21	2.48	3.38	4.19	3.5	1.96	2.65	2.73	2.5	4.23	3.46

Factor 1 Items

■ Students Mean   ■ Faculty Mean
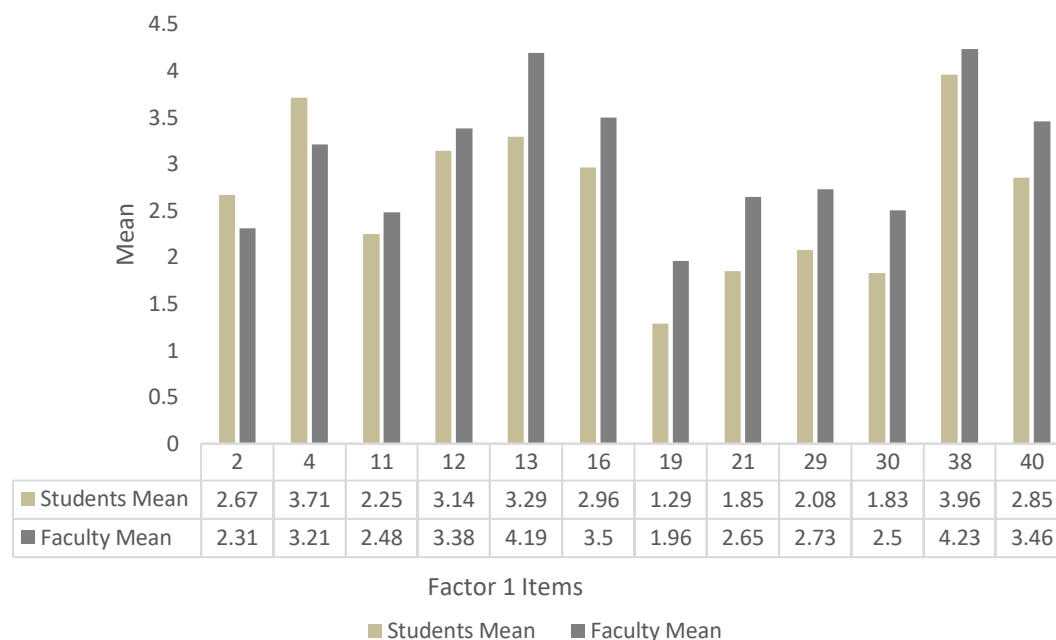
Figure 6. Factor 1. Learner-Centered Activities, question means of Factor 1 for student

and faculty.

Factor 2, Personalizing Instruction, relates to instructional practices focused on

individual student characteristics and needs (Conti, 2004). Factor 2 has nine items, and

scores for this factor ranged from 0 to 45 (see Figure 7). The calculated mean for Factor

2 was 31, with a standard deviation of 6.8 (Conti, 2004). Total scores for the faculty on

the Principles of Adult Learning Scale for Factor 2 ranged between 11 and 33 with a

median score of 22 and mode of 24. The mean for faculty scores in Factor 2 was 21.42

with a standard deviation of 4.9, which was below the normed mean of 31 and standard

deviation of 6.8 for Principles of Adult Learning Scale. The faculty mean was 1.4 below

the normed mean for Factor 2, Personalizing Instruction (31 - 21.42 = 9.56 / 6.8 = 1.40).

Total score distribution for students completing the Adapted Principles of Adult

Learning Scale for Factor 2 ranged between 11 and 30. Student Factor 2 scores had a

median of 19 and mode of 15. The mean for student scores for Factor 2 was 19.94, with

a standard deviation of 5.32, which was 1.62 below the normed mean for Factor 2,

Personalizing Instruction (31 - 19.94 = 11.06 / 6.8 = 1.62).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Factor 2 Students	11	24	15	15	15	21	30	29	16	17	16	15	25	20	17	28	14	24	24	17	19	19	27	21		
Factor 2 Faculty	28	23	21	24	11	24	25	33	23	18	24	11	25	24	16	20	28	23	19	20	19	19	17	18	20	24

Participant Count

■ Factor 2 Students   ■ Factor 2 Faculty
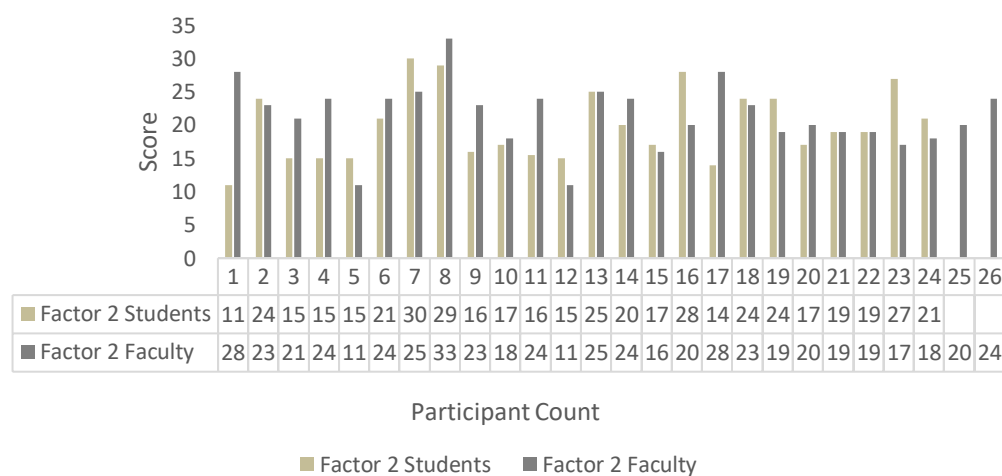
Figure 7. Distribution of Factor 2 scores for Personalizing Instruction on the Principles

of Adult Learning Scale for students and faculty.

The bar graph in Figure 8 displays the reported behaviors of students and faculty

for survey items of Factor 2, Personalizing Instruction (see Figure 8). Items surveyed for

Factor 2 included allowing more time for adult students to complete assignments, using

different teaching techniques based on the student group, along with using different

teaching materials with different students. Permitting students to work at an individual

pace to learn a new concept regardless of the amount of time and planning learning

objectives around student goals in continuing education were items reported by students

and faculty for personalizing instruction.

Factor 2 Items	3	9	17	24	32	35	37	41	42
Student Mean	3.21	2.13	1.92	2.06	2.63	2.66	0.88	3.13	1.33
Faculty Mean	2.35	2.04	3.31	2.7	2.62	2.27	0.85	3.23	2.07
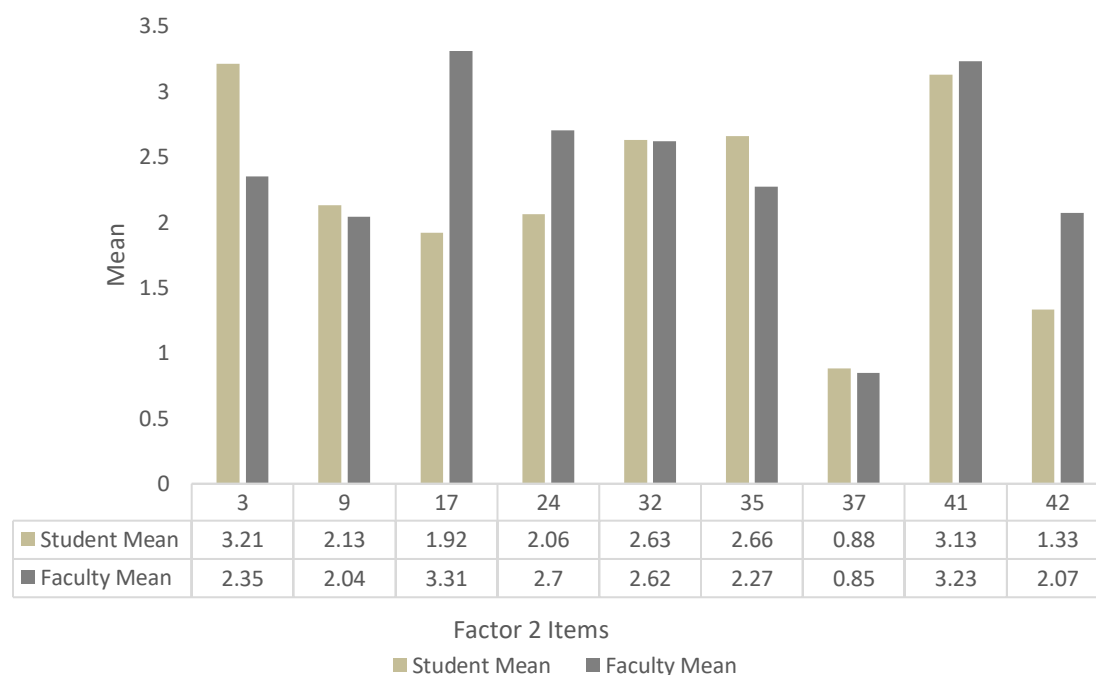
Figure 8. Factor 2, Personalizing Instruction, question means for students and faculty on

the Principles of Adult Learning Scale.

Items in Factor 3 were learning behaviors, which consider students' prior

experiences and organizing learning experiences, according to types of everyday life

problems students encounter (Conti, 2004). Factor 3 has six items, and scores for this

factor range between 0 to 30 (see Figure 9). The calculated mean for Factor 3 was 21,

with a standard deviation of 4.9 (Conti, 2004). Total scores for the faculty on the

Principles of Adult Learning Scale for Factor 3 ranged between 11 to 27, with a median

score of 19 and mode of 24. The mean for faculty scores in Factor 3 was 19.92, with a

standard deviation of 4.34, which was below the normed mean of 21 and standard deviation of 4.9 for Principles of Adult Learning Scale. The mean for faculty scores was .22 below the normed mean for the factor (21 - 19.92 = 1.08 /4.9 = .22).

Student total score distributions for Factor 3, Relating to Experiences, ranged between 0 and 30. The median for student scores was 16 and a mode of 21. The mean for student scores in Factor 3 was 16.27 with a standard deviation of 7.19, which was a difference of .96 below the Factor 3 normed mean of 21 and standard deviation of 4.9 (21 - 16.27 = 4.73 / 4.9 = .96).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Factor 3 Students	9	18	14	0	11	18	30	28	17	12	6	16	27	21	6	22	11	21	15	16	15	15	21	22			
Factor 3 Faculty	24	24	22	18	12	26	20	27	26	19	16	18	24	17	19	21	23	16	19	17	17	23	11	15	18	26	

Participant Count

■ Factor 3 Students   ■ Factor 3 Faculty
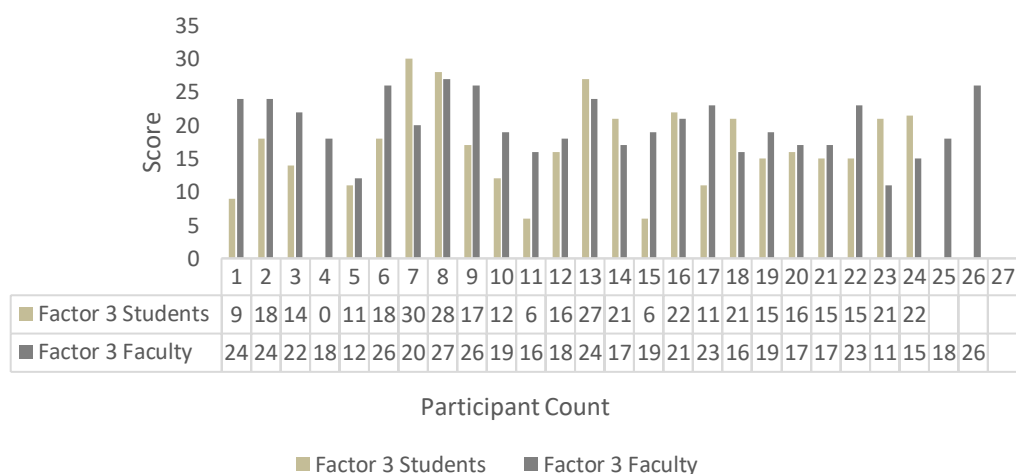
Figure 9. Distribution of scores for Factor 3, Relating to Experiences, for students and faculty on the Principles of Adult Learning Scale.

The bar graph in Figure 10 shows the means for the questions in Factor 3, Relating to Experiences. Items in Factor 3 included planning learning activities, which encourage students' growth from dependence on others to independent behaviors and relating new learning to prior experiences. Teaching about problems of everyday living were behaviors reported by students and faculty for Factor 3, Relating to Experiences.

Factor 3 Items	14	31	34	39	43	44
■ Student Mean	2.54	2.96	3.48	2.38	2.46	2.46
■ Faculty Mean	3.15	3.23	3.73	2.77	3.8	3.23

■ Student Mean   ■ Faculty Mean
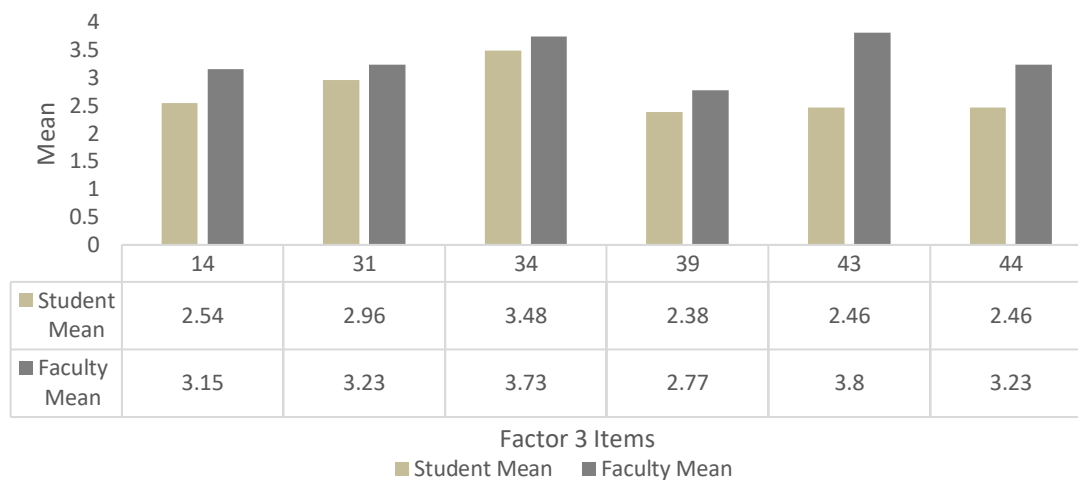
Figure 10. Factor 3, Relating to Experiences, question means for both students and faculty on the Principles of Adult Learning Scale.

The chart in Figure 11 displays the range of scores between 6 and 19 for students and faculty for Factor 4. Factor 4, Assessing Student Needs, refers to what the student wants and needs to know (Conti, 2004). Factor 4 has four items, and scores for this factor range between 0 to 20 (Conti, 2004). Total scores for the faculty on the Principles of Adult Learning Scale for Factor 4, Assessing Student Needs, ranged between 6 and 19 with a median and mode score of 13. The mean for faculty scores was 0.11 below the normed mean of 14 and standard deviation of 3.6 for Factor 4, Assessing Student Needs (14 - 13.58 = .42 /3.6 = .11).

Student score distributions for Factor 4 ranged between 0 and 20 with a median and mode of 10. The mean for student scores for Factor 4, Assessing Student Needs, was 10.54 and standard deviation of 5.21, which was .91 below the normed mean of 14 and standard deviation of 3.6 (14 - 10.54 = 3.46 / 3.6 = .91).
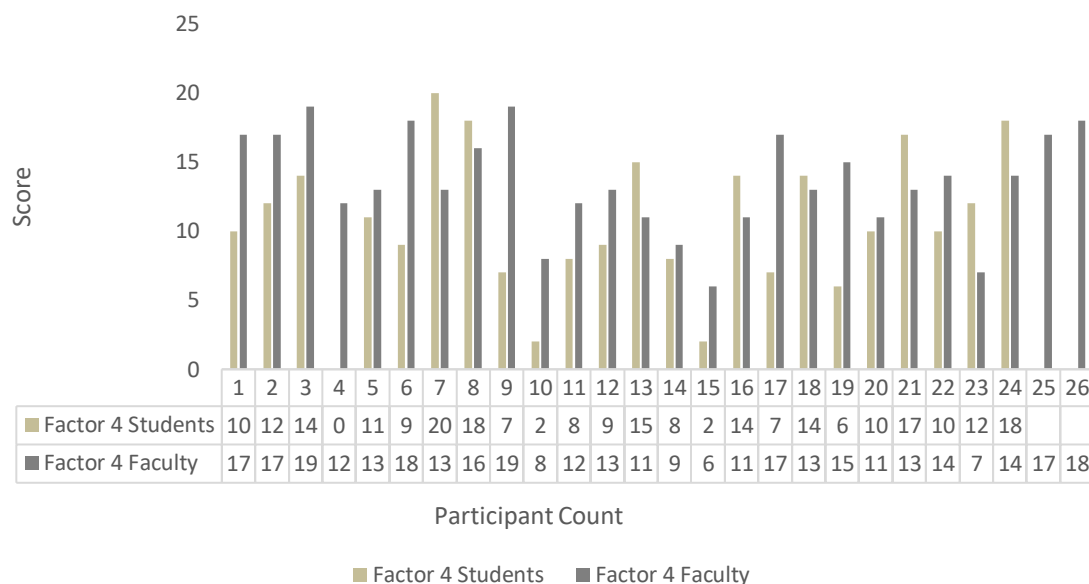
Figure 11. Distribution of scores for Factor 4, Assessing Student Needs, for Principles of

Adult Learning Scale for students and faculty.

Students and faculty reported on informal conferencing with students as part of

Factor 4, Assessing Student Needs. Faculty helping students identify educational needs

and developing goals and objectives are part of the items for Factor 4. Strategies faculty

reported using to assess student needs included identifying with the student the

differences between their goals and level of performance (see Figure 12).
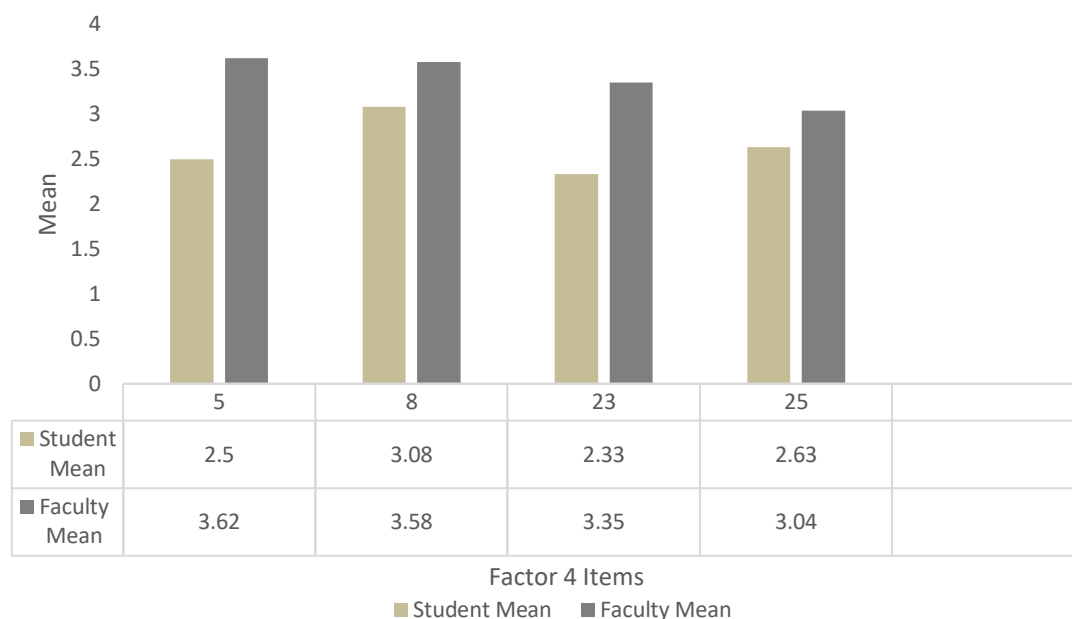
Figure 12. Question means for Factor 4, Assessing Student Needs, for students and faculty completing the Principles of Adult Learning Scale.

Factor 5, Climate Building, relates to the classroom environment as favorable and encouraging (Conti, 2004). Factor 5 has four items, and scores for this factor ranged between 0 to 20 (see Figure 13). Total scores for the faculty on the Principles of Adult Learning Scale for Factor 5 ranged between 12 to 19 with a median and mode of 15. The faculty mean was .21 below the normed mean of 14 and standard deviation of 3.0 for the factor (16 - 15.37 = .64 /3.0 = .21).

Student score distributions for Factor 5, Climate Building, were between 0 to 20, with a median of 13.5 and mode of 14. The mean for student scores was 13.33. The student mean for Factor 5 was .89 below the normed factor mean of 16, with a standard deviation of 3.0 (16 - 13.33 = 2.67 /3.0 = .89).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Factor 5 Students	14	12	14	0	9	14	20	18	13	13	12	17	14	17	12	15	14	12	13	11	12	12	14	18		
Factor 5 Faculty	17	19	18	16	19	19	13	17	15	15	15	15	13	16	15	16	16	12	15	14	13	14	14	16	14	14
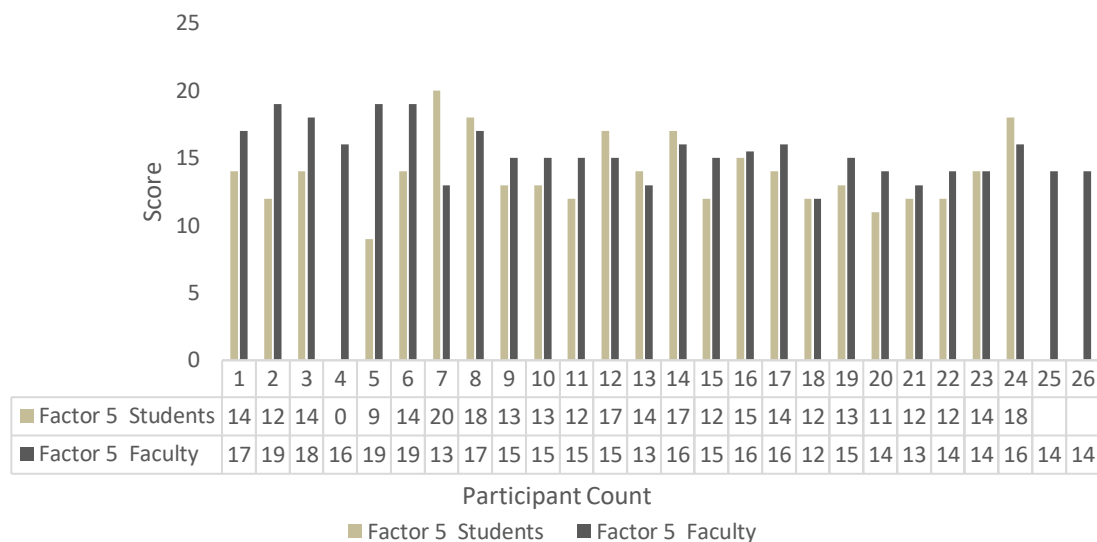
Figure 13. Distribution of scores for Factor 5, Climate Building, for Principles of Adult Learning Scale for students and faculty.

Figure 14 displays the question means for Factor 5, Climate Building. Items for climate building include allowing students to take breaks as needed and accepting errors as part of the learning process. A strategy faculty utilized to encourage positive climate building was to promote ways for student dialogue. Another item reported in the climate building factor was utilizing competencies adults already possess to achieve the planned educational objective.
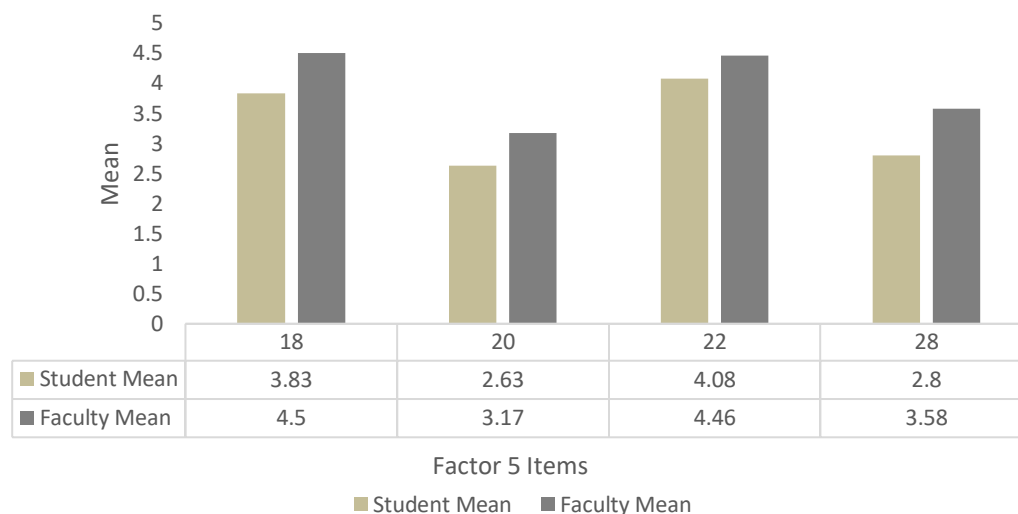
Figure 14. Question means for Factor 5, Climate Building, for Principles of Adult Learning Scale for students and faculty.

Factor 6, Participating in the Learning Process, refers to students identifying their problems to solve and participating in the decisions of content topics for class (Conti, 2004). Factor 6 has four items with scores ranging between 0 and 20 (see Figure 15). Total scores for the faculty on the Principles of Adult Learning Scale for Factor 6 ranged between 0 and 17, with a median of 9.5 and mode of 11. The faculty mean was 1.07 below the normed mean of 13 and standard deviation of 3.5 for the factor (13 - 9.23 = 3.77 / 3.5 = 1.07).

Student scores for Factor 6 ranged between 0 and 19, with a median of 9.25 and mode of 12. The student means of 9.06, with a standard deviation of 4.36, was 1.12 below the normed factor mean of 13 and standard deviation of 3.5 (13 - 9.06 = 3.94 /3.5 = 1.12).
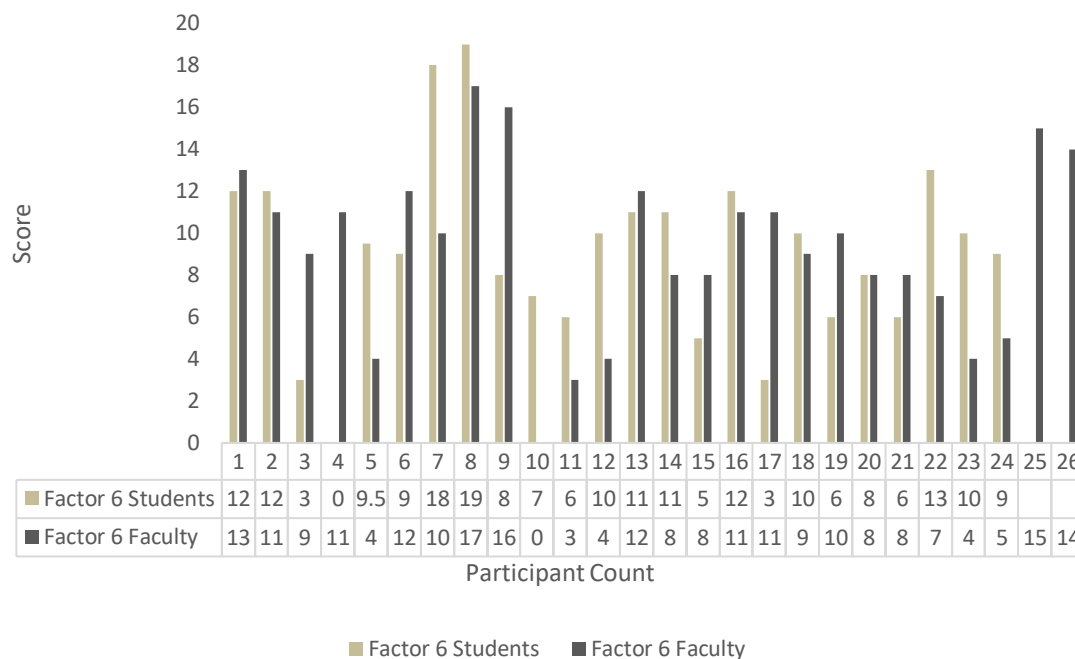
Figure 15. Distribution of scores for Factor 6, Participating in the Learning Process, for Principles of Adult Learning Scale for students and faculty.

Figure 16 displays the question means for Factor 6, Participating in the Learning Process. Items for participating in the learning process include allowing students to aid in the development of performance evaluation criteria and decisions on the topics covered in class. Other factor items include classroom arrangements for ease of student interactions and students identifying their problems needing to be solved.
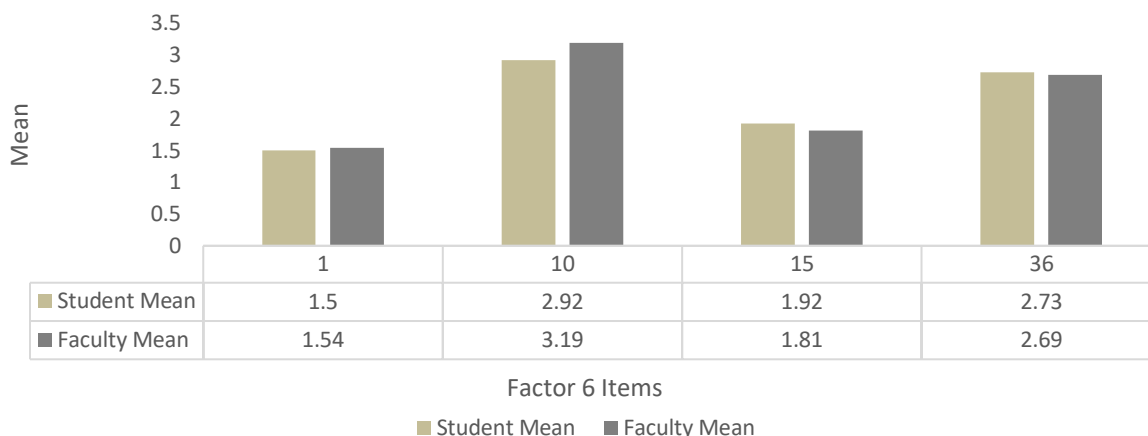
Figure 16. Question means for Factor 6, Participating in Learning Process, for Principles of Adult Learning Scale for students and faculty.

Factor 7, Flexibility for Personal Development, refers to adjustments made by the facilitator in the classroom environment to accommodate the students' needs (Conti, 2004). Factor 7 has five items with scores ranging between 0 and 25. Total scores for the faculty on the Principles of Adult Learning Scale for Factor 7 ranged between 1 and 15, with a median of 10 and mode of 13 (see Figure 17). The faculty mean was .81 below the normed mean of 13 and standard deviation of 3.9 for Factor 7, Flexibility for Personal Development (13 - 9.82 = 3.18 / 3.9 = .81).

Student score ranges for Factor 7 were between 0 and 25, with a median of 9.50 and mode of 10. The student mean was 9.83, with a standard deviation of 4.78, a difference of .81 from the normed factor mean of 13 and the standard deviation of 3.9 (13 - 9.83 = 3.17 / 3.9 = .81).
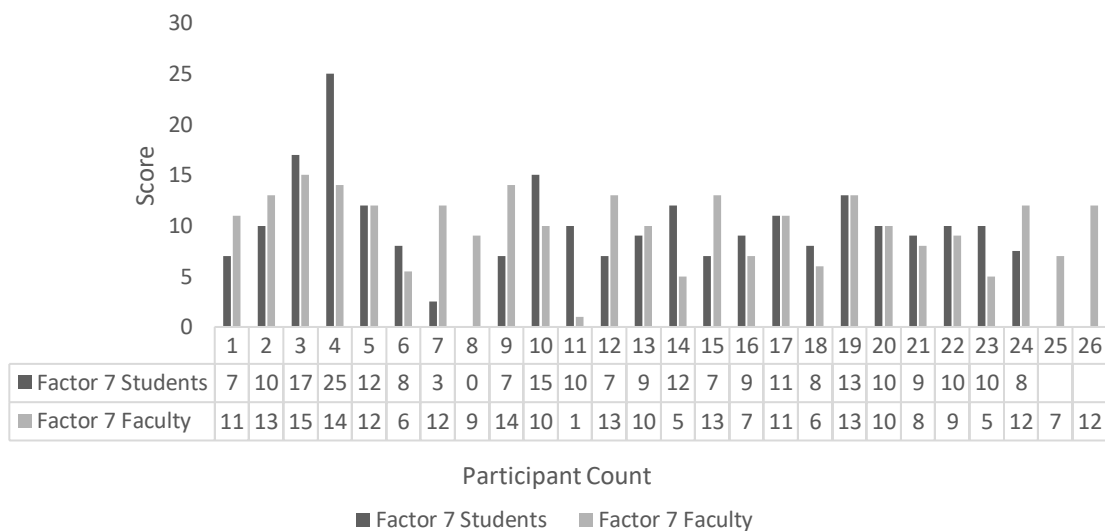
Figure 17. Distribution of scores for Factor 7, Flexibility for Personal Development, for Principles of Adult Learning Scale for students and faculty.

For Factor 7, Flexibility for Personal Development, the items reported by students and faculty were arranging the classrooms, so students could easily interact and allowing students to participate in deciding the topics to cover in class. Another item encouraging flexibility for personal development was allowing students to participate in creating the performance criteria for evaluation purposes.
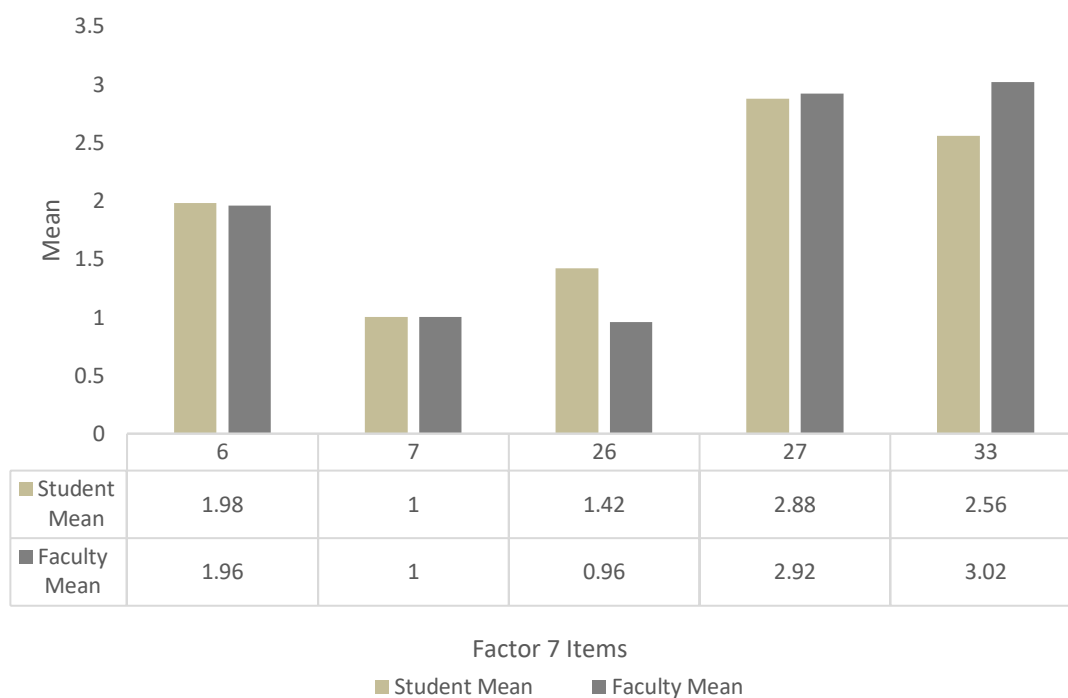
Figure 18. Question means for Factor 7, Flexibility for Personal Development, for

Principles of Adult Learning Scale for students and faculty.

Research Questions

Four research questions guided this study.

Research question one: *What strategies related to adult learning principles do*

college instructors report using in their classrooms, as measured by the Principles of

Adult Learning Scale?

For the first research question, the adult learning strategies found in the factors for

Climate Building, Relating to Experiences, and Assessing Student Needs received

notable responses from the instructors. Four questions in the survey for the Climate

Building factor were numbers 18, 20, 22, and 28. Instructors responded *Always* (61.54%)

to each of the two questions in Climate Building, to encourage dialogue among students

and accept errors as a part of the natural learning process. Another Climate Building

strategy was reported as *Often* (48%) and *Almost always* (24%); instructors utilize competencies most adults already possess to achieve educational objectives.

Of the six subfactor questions in the survey for Relating to Experiences, numbers 14, 31, 39, and 43 were answered with responses toward learner-centered behaviors. The instructors reported they *Often* (61.54%) organize adult learning episodes relating to the problems encountered by the students in everyday life. Planning activities to encourage student growth to progress from dependence on others to independence was reported *Often* (57.69%) by the instructors.

Four questions for instructors to report strategies used for Assessing Student Needs were 5, 8, 23, and 25. Instructors reported they *Always* (30.77 %) and *Often* (34.62%) help students diagnose gaps between their present level of performance and their goals. Informal counseling to assess student needs was reported used *Often* (30.77%), *Always* (26.92 %), and *Almost always* (26.92%) by the instructors. Using individual conferences to help students identify educational needs was reported *Often* (46.15%) by the instructors.

Research question two: *What strategies related to adult learning principles do college students report the instructors use in the classes they have taken, as measured by the Adapted Principles of Adult Learning Scale?*

The data were analyzed to determine adult learning strategies students reported to have experienced in their classes. Five of the seven subfactors of the Adapted Principles of Adult Learning Scale received responses from students, which indicated the tendency of the instructors to use teacher-centered methods in the classrooms. The teacher-centered learning strategies identified were in the factors Personalized Instruction,

Relating to Experience, Assessing Student Needs, Climate Building, and Participation in the Learning Process.

In Factor 2 Personalizing Instruction, student participants identified learner-centered behaviors and teacher-centered behaviors. Students reported instructors *Often* (41%) allowed older students more time to complete assignments when needed, while instructors using different techniques depending on the students being taught was reported *Often* (45%) by the students. Teacher-centered activities were reported to be through instructional delivery and assignments. According to 45% of the students, lecturing was *Often* the method used by instructors to present subject material to adult students. Students participating in the survey responded instructors *Always* (50%) gave all students in the class the same assignment on a given topic.

Relating to Experiences included more learner-centered behaviors reported by students than teacher-centered behaviors. Students reported instructors *Always* (39%) encourage students to ask questions about the nature of their society. Students reported *Often* (45%) the instructor teaches units about problems of everyday life while planning to consider prior learning experiences was reported *Often* (37%) by the students. Planning activities to encourage growth from dependence on others to greater independence and organize learning episodes, according to problems that occur in everyday life, was reported *Often* (37%) by the students. However, for the instructors to relate new learning to prior experiences, students reported *Seldom* (29%).

Assessing Student Needs by instructors helping students diagnose gaps between goals and current level of performance was reported as *Often* (29%) by students. *Always* (16%) and *Almost always* (16%) responses were given by the students for instructors to

develop short-range and long-range objectives, along with 25% of the students reporting this action occurred *Often*. Instructors were reported by students *Always* (25%), *Almost always* (20%), and *Often* (25%) to participate in informal counseling of students. Individual conferences with instructors to identify educational needs were reported as *Always* (8.33%), *Almost always* (20.83%), and *Often* (20.83%); while the remaining students reported *Seldom* (8.33%), *Almost never* (29.17%), and *Never* (12.50%) to experiencing conferences with instructors to identify educational needs. Student reports represented differing experiences regarding instructors conducting individual conferences to help students identify educational needs.

Instructors accepting errors as a natural part of learning was reported as *Always* by 54% of the students as a part of Factor 5 Climate Building. Students reported instructors utilizing competencies most adults already possess to achieve educational objectives to occur *Often* (58%). Allowing students to take periodic breaks during class was reported to be experienced *Often* (37%) by the students.

Participating in the Learning Process by identifying their problems that need to be solved was reported to occur *Often* (60%) by the students as part of Factor 6. Students reported they *Seldom* (29%) participated in making decisions about topics to be covered in class. Developing criteria for evaluating performance in class was reported *Never* (41%) by the students responding to the survey.

Research question three: *What differences exist between adult learning principles reported to be used by faculty members as measured by the Principles of Adult Learning Scale and the adult learning principles experienced by students in their classroom experiences as measured by the Adapted Principles of Adult Learning Scale?*

H3$_0$: There is no difference between the adult learning principles the instructors report as measured by the Principles of Adult Learning Scale and the adult learning principles reported by students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale.

H3$_a$: There is a significant difference between the adult learning principles instructors report as measured by the Principles of Adult Learning Scale and the adult learning principles reported by students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale.

Overall scores were used to answer Research Question Three regarding what statistical differences, if any, exist between adult learning principles reported to be used by faculty members as identified by the Principles of Adult Learning Scale and the adult learning principles experienced by students in their classroom experiences as measured by the Adapted Principles of Adult Learning Scale (see Table 1). Total scores on the Principles of Adult Learning Scale and the Adapted Principles of Adult Learning Scale indicated an overall teaching style of the instructors with the utilization of strategies from responses to individual survey questions addressed later in the seven subfactors of the instrument (Conti, 2004). Overall scores between 126 and 166 are one standard deviation from the normed score of 146. Scores between 106 and 186 are within two standard deviations of the mean and indicate a strong tendency to be teacher-centered when less than 146 or learner-centered when greater than 146 (Conti, 2004).

The two sample independent *t*-test conducted on the overall scores of the students and the faculty as measured by the Principles of Adult Learning Scale and the adult learning principles reported by students to be used in their classrooms as measured by the Adapted Principles of Adult Learning Scale revealed a *p*-value 0.0. The *p*-value of 0.0 was less than a *p*-value of .001, and therefore less than the significance level of .05, indicating a highly significant difference between the scores for the two groups. The resulting decision was to reject the null hypothesis and support the alternative hypothesis.

Table 1

t-Tests of Total Scores for Students and Faculty on the Principles of Adult Learning Scale

Group	Mean	Min.	Max.	SD	N	n	%	df	$p < .05$	Sig.
Students	110.88	81	136	15.49	114	24	21	47	0.0	$p < .05$
Faculty	126.00	98	148	14.57	36	26	72	47	0.0	$p < .05$

Research question four*: What differences exist between adult learning principles reported to be used by faculty members as measured by the Principles of Adult Learning Scale and the adult learning principles experienced by nontraditional students in their classroom experiences as measures by the Adapted Principles of Adult Learning Scale?*

> *H4$_0$: There is no difference between the adult learning principles the instructors report as measured by the Principles of Adult Learning Scale and the adult learning principles reported by nontraditional students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale.*

H4ₐ: There is a significant difference between the adult learning principles

instructors report as measured by the Principles of Adult Learning Scale and the

adult learning principles reported by nontraditional students to be used in their

classrooms, as measured by the Adapted Principles of Adult Learning Scale.

Scores for the seven factors of the Principles of Adult Learning Scale for the

students and faculty were used to answer the fourth research question (see Table 2). The

t-test for Factor 1, Learner-Centered Activities, revealed a p-value ($p = .22$), which was

greater than .05, resulting in no significant difference between the adult learning

principles identified by the students and instructors used in their classrooms. The

conclusion from the analysis of the data of the Factor 1 t-test was to fail to reject the null

hypothesis. Therefore, the decision was made to not support the alternative hypothesis

for Factor 1, Learner-Centered Activities.

Data analysis for Personalized Instruction, Factor 2 resulted in a t-test identified

with a p-value (.65), which was greater than .05; there was not a significant difference at

the .05 level. The data for Factor 2 led to the decision to fail to reject the null hypothesis.

With no significant difference between the groups for personalized instruction, the

decision was not to support the alternative hypothesis.

Factor 3 Relating to Experience data analysis resulted in a p-value of 0.03, which

was less than the .05 level, indicating a significant difference existed between the groups.

The decision was supported by the data to reject the null hypothesis. Since a significant

difference existed for Factor 3, the choice was to support the alternative hypothesis.

Assessing Student Needs Factor 4 data analysis using the two sample independent

t-test resulted in a p-value (0.01) less than the .05 level. The data indicated a significant

difference existed and supported the decision to reject the null hypothesis. The *t*-test revealed a significant difference between the groups; therefore, the decision was to support the alternative hypothesis.

Factor 5 Climate Building data analysis of the *t*-test resulted in a *p*-value (.27) greater than the .05 level, indicating no significant difference between the groups. The data supported the decision to fail to reject the null hypothesis for Factor 5. The resulting implication was not to support the alternative hypothesis.

Participation in the Learning Process Factor 6 *t*-test data analysis indicated no significant difference between the groups, with a *p*-value (.94) greater than the .05 level. The data supported the decision to fail to reject the null hypothesis. Therefore, the conclusion was not to support the alternative hypothesis.

Factor 7 Flexibility for Personal Development data analysis from the *t*-test revealed the *p*-value (.99) was greater than the .05 level, indicating no significant difference between the groups. The decision to fail to reject the null hypothesis was supported by the data. Therefore, the result was not to support the alternative hypothesis.

Table 2

Two Sample t-Test of Unequal Variance for Factors of the Principles of Adult Learning Scale

| | Groups | | | | | |
| Factor | Students | Faculty | | | | |
	Mean	Mean	*n*	*df*	*t*	*CL*
1. Learner-Centered Activities	2.66	3.05	12	22.00	.22	95%
2. Personalizing Instruction	2.22	2.38	9	16.00	.65	95%
3. Relating to Experience	2.71	3.32	6	10.00	.03	95%
4. Assessing Student Needs	2.64	3.40	4	6.00	.01	95%
5. Climate Building	3.34	3.93	4	6.00	.27	95%
6. Participation in the Learning Process	2.27	2.31	4	6.00	.94	95%
7. Flexibility for Personal Development	1.97	1.97	5	8.00	.99	95%

Note. *n* = Number of factor items; CL = Confidence Level; *p* < = .05.

Summary

In Chapter Four analysis of the quantitative data for the study of adult learning principles used with nontraditional students in higher education was presented. Descriptive statistics and two sample independent *t*-tests were used to analyze the data and answer the research questions. The overall scores were used to analyze if any difference existed between the responses of faculty members completing the Principles of Adult Learning Scale and students completing the Adapted Principles of Adult Learning Scale.

The mean for the faculty scores was 126. Scores less than the normed mean of 146 on the Principles of Adult Learning Scale indicated a stronger tendency for 88% of the faculty members to be teacher-centered. The scores for the 12% of faculty members scoring greater than the normed mean of 146, indicated a tendency to be learner-centered. The *t*-test revealed a significant difference between the overall scores of the students and

faculty. The overall scores between the two groups had a *p*-value of 0.0, which was less than a significance level of .001 and indicated a highly significant difference. In Chapter Five, a discussion of the conclusions, implications for practice, and recommendations for further study are shared.

Chapter Five: Summary and Conclusions

Enrollment and images of college students have changed over the past few decades with increasing numbers of adult students enrolling in higher education each year. Despite the increased adult learner populations in higher education, the policies and instructional programs remain geared to meet the needs of the traditional student just graduating high school (Chen, 2014; Knowles et al., 2015). Adult learners choose institutions of higher education for different reasons than do traditional students (MacDonald, 2018). Adult learners tend to make college selection as a consumer choice based on values of reputation or image, the flexibility of scheduling, payment options, and relevance to training needs (Stevens, 2014).

As presented in Chapter One, the purpose of the study was to collect information and data regarding the use of adult learning principles used in higher education with nontraditional students, which could be used to enhance learner satisfaction and improve retention. Understanding the needs of adult learners is essential to maintain their satisfaction and aid in student retention in higher education (Chen, 2014). As discussed in Chapter Two, adult learners seek satisfaction in education and training as a valued consumable (Stevens, 2014). Higher education institutions are evaluated in the consumer market by adult learners who want a return on their investment of time, effort, and money (MacDonald, 2018).

The review of literature in Chapter Two included the background of adult learning theories andragogy, self-directed learning, and transformative learning. Malcolm Knowles' work in adult learning and andragogy was part of the foundation for the theoretical framework for this study, which was appropriate since the learning

strategies used with adult learners in higher education were explored in this research study. The data collected from instructors and nontraditional students added to the quantitative research of adult learning principles utilized in higher education classrooms and learning environments.

Permission was granted to use the survey instrument, Principles of Adult Learning Scale, for this study; over 100 research studies and articles through the years since its development in 1979 have been conducted and written by Conti (Byrd, 2010). Byrd (2010) used the Principles of Adult Learning Scale to identify instructional methods of nationally certified sign language interpreters. In an international research study, Nessipbayeva and Egger (2015) used the Principles of Adult Learning Scale to compare learning infrastructures to help students learn and identify instructors' teaching styles in institutions of higher education of Austria and Kazakhstan.

According to Conti (2004), instructional methods used in classrooms depend on the instructor's philosophy of teaching, the preferred format for learning, and typically do not change if the content changes. The current study conducted from the practitioner's perspective included a review of instructional methods for teaching adult learners and factors which impact the student's satisfaction and retention toward completing a degree. Different instructional methods reviewed in Chapter Two included the use of pedagogy in higher education, which is a teacher-centered method applied most commonly with younger traditional students, and learner-centered methods for adult learners such as andragogy, self-directed learning, and transformative learning.

Teachers have a major influence on the character of the learning environment (Knowles et al., 2015). The teacher or facilitator may directly communicate the teaching

philosophy to the group or may do so through social cues or modeling (Knowles et al., 2015). Changing the learning environment from teacher-centered to a learner-centered requires the instructor to develop trust and respect within the group (Fink, 2013; Knowles et al., 2015). Traditional formal learning environments are passive, are dominated by the lecture format, have little student interaction, and result in a low intrinsic motivation for learning (King, 2017).

Formal learning environments and dominating teachers are authoritarian and discouraging to adult learners (Knowles et al., 2015). Informal learning environments which occur in everyday life, are open, flexible, and less authoritarian, making them conducive and motivating for adult students (Fink, 2013; Knowles et al., 2015). The learning atmosphere facilitated by the instructor contributes to the learners' satisfaction in the learning process and ultimately in their retention to complete the training or degree (Knowles et al., 2015).

Learning experiences developed by the instructor to be interesting and relevant can lead to a more in-depth learning approach with the integration of prior experiences (Fink, 2013). To identify how adult learners are taught, it is important for instructors to identify their style or instructional methods used for teaching (Conti, 2004). The research design of the study was provided in Chapter Three. Explained was the process that was implemented to compare self-report surveys completed by the instructors and nontraditional students to identify what adult learning principles were experienced in the classroom.

The survey tool, Principles of Adult Learning Scale, was completed by instructors and a modified version of the same survey, Adapted Principles of Adult Learning Scale,

was completed by students. In Chapter Three, the data collection procedures and data analysis methods involved in conducting the study were discussed. According to Creswell (2014), the self-report opinion survey can be used to learn about population trends rather than predicting relationships between variables making it an appropriate choice for this study. Data analysis results were shared in Chapter Four. Descriptive statistics and the *t*-test were completed using data from the overall scores and the seven factor subgroups of the two surveys. The findings of the surveys are described in Chapter Five.

Findings

Research question one. *What strategies related to adult learning principles do college instructors report using in their classrooms, as identified by the Principles of Adult Learning Scale?*

The data for Research Question One were analyzed using descriptive statistics. In this study, instructors identified learning strategies practiced by responding to a Likert-scale using choices of *Always, Almost always, Often*, *Seldom, Almost never, or Never.* Responses were considered notable when the instructor reported a strategy as practiced or used in the classrooms at a rate of 50% or higher.

Instructors reported at a rate of 50% to *Always* give students the same assignment on a given topic, which is more teacher-centered. Strategies more learner-centered and reported as *Always* by 61.54% of the instructors were accepting errors as a natural part of the learning process and encouraging dialogue among students. Instructors reported to *Almost always* (57.69%) stick to the instructional objectives written at the beginning of a program.

Instructors reported more teacher-centered adult learning strategies than learner-centered strategies. The strategy of using what history has proven adults need to learn as the main criteria in planning learning was reported to be used *Often* by 50% of the instructors. Instructors reported to *Often* (57.69%) use lecturing as the best method to present their subject material to adult students. Another teacher-centered approach of encouraging competition among students was reported by 53.85% of the instructors to be *Seldom* used.

The instructors in the study identified several notable learner-centered approaches. Instructors reported to *Often* (61.54%) organize learning according to the problems that students encounter in everyday life. Of the instructors participating in the study, 57.69% reported to *Often* plan activities that encourage each student's growth from dependence on others to greater independence. Instructors reported to *Never* (57.69%) use material designed to be used in elementary or secondary schools initially.

Research question two. *What strategies related to adult learning principles do college students report the instructors use in the classes they have taken, as measured by the Adapted Principles of Adult Learning Scale?*

The response to Research Question Two was determined using descriptive statistics. Students identified learning strategies practiced by their instructors and experienced in the classroom or academic environment by the students. Students responded to survey questions with choices on a Likert-scale of *Always, Almost always, Often, Seldom, Almost never, or Never.* Responses were considered notable when the students reported a strategy as practiced in the classrooms at a rate of 50% or greater.

Notable responses were identified from student surveys for both learner-centered and teacher-centered strategies. Learner-centered strategies reported by students to be practiced by instructors included identifying problems to be solved, accepting errors as part of learning, and utilizing prior competencies of adult students. Instructors were reported by 60.87% of the students to *Often* have the students identify their problems that need to be solved. Students reported 54.17% of the instructors *Always* accepted errors as a natural part of the learning process. There were 58.33% of the instructors reported to *Often* utilize many competencies that adults already possess to achieve educational objectives and the same percentage of instructors *Never* encouraged students to adopt middle-class values. A notable teacher-centered strategy reported by students participating in the study was for instructors to *Almost always* (54.17%) stick to instructional objectives written at the beginning of the program.

Research question three: *What differences exist between adult learning principles reported to be used by faculty members as measured by the Principles of Adult Learning Scale and the adult learning principles experienced by students in their classroom experiences as measured by the Adapted Principles of Adult Learning Scale?*

$H3_0$: There is no difference between the adult learning principles the instructors report as measured by the Principles of Adult Learning Scale and the adult learning principles reported by students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale.

$H3_a$: There is a significant difference between the adult learning principles instructors report as measured by the Principles of Adult Learning Scale and the

adult learning principles reported by students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale.

A two sample independent *t*-test was conducted to analyze the data to respond to Research Question Three on the overall scores of the students and the faculty as measured by the Principles of Adult Learning Scale and the Adapted Principles of Adult Learning Scale. A *p*-value of 0.0 was the result of data calculations for the two sample independent *t*-test. Due to the *p*-value of 0.0 being less than a *p*-value of .001, and therefore less than the significance level of .05, a highly significant difference between the scores was identified for the two groups. The decision was to reject the null hypothesis and support the alternative hypothesis.

Research question four*: What differences exist between adult learning principles reported to be used by faculty members as measured by the Principles of Adult Learning Scale and the adult learning principles experienced by nontraditional students in their classroom experiences as measures by the Adapted Principles of Adult Learning Scale?*

> *$H4_0$: There is no difference between the adult learning principles the instructors report as measured by the Principles of Adult Learning Scale and the adult learning principles reported by nontraditional students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale.*
>
> *$H4_a$: There is a significant difference between the adult learning principles instructors report as measured by the Principles of Adult Learning Scale and the adult learning principles reported by nontraditional students to be used in their classrooms, as measured by the Adapted Principles of Adult Learning Scale.*

The data to respond to Research Question Four was analyzed using the two sample independent *t*-test of the overall scores of the seven factors of the Principles of Adult Learning Scale for the two groups, students and faculty. The *t*-test conducted for each of the seven factors indicated statistically significant differences for Factor 3, Relating to Experience, and Factor 4, Assessing Student Needs. The alternative hypotheses were supported for Factor 3 and Factor 4. Comparison of the seven factor scores revealed no statistically significant differences between the adult learning principles reported by instructors and the nontraditional students for Factors 1, 2, 5, 6, or 7.

Conclusions

As discussed in Chapter One, self-report surveys may create a limitation due to any biased perceptions of the respondents (Fraenkel et al., 2015). According to Creswell (2014), trends in populations, rather than predictions, are garnered from self-report surveys. A limitation of the study could be construed due to the number ($n = 24$) and percentage (21%) of students participating in the study (Fraenkel et al., 2015).

A limitation could occur from the quantitative methodology utilized to analyze the differences between the two groups for the study. Inferential statistics can be misleading if used to judge the importance of the magnitude of relationship differences (Fraenkel et al., 2015). According to Fraenkel et al. (2015), inferential statistics should be reported using confidence levels and used for judging the generalizations of results.

As discussed in Chapter Three, the Principles of Adult Learning Scale was tested for reliability and validity (Conti, 2004). Therefore, the results of this study could also be considered to have external reliability and construct validity. According to Knowles et

al. (2015), faculty tend to rate their use of adult learning principles higher than the rate students report experiencing the andragogy principles in the classroom. The results of this study were congruent with previous research and expectations expressed by Knowles et al. (2015) in the use of adult learning principles in the classroom, as reported by students and faculty.

Findings from this study led to three conclusions for policy and professional development changes regarding adult learners. The first conclusion was that policy changes, both institutional and academic are needed to address the challenges of adult learners. An example of an academic policy change could include allowing student input for developing course objectives and assessments.

The general practice of developing course objectives before the beginning of the course contributed to the (57.69%) instructors of this study who reported to *Almost always* stick to the instructional objectives written at the beginning of a program. The accepted practice or expectation of universities includes instructors preparing and submitting course syllabi at the beginning of each semester to the Academic Affairs office with the understanding a syllabus is a contract between the instructor and student. Allowing for student input in the development of course objectives at the beginning of the semester, instructors could submit course syllabi within the first two weeks of the semester starting. Changing institutional policy to delay submission of syllabi to incorporate student input, embraces the adult learning principles of learners wanting to have control of what and how they learn, resulting in increased motivation, learner engagement, and performance outcomes.

The second conclusion focused on faculty professional development in the specific needs and challenges of adult learners. Expanding faculty awareness of the adult learners' need to identify their goal or reason for learning and plan how to narrow any gap(s) in their knowledge or skills base to reach their goal can improve academic success and student satisfaction. Addressing the needs and challenges of the adult learners with academic support, flexible scheduling, interactive assignments, and relevant learning experiences can make a difference in students' motivation to complete their educational goals (Wlodkowski & Ginsberg, 2017). Professional development for faculty in utilizing problem-solving and critical thinking can assist instructors in guiding adult learners to address challenges in learning environments, which can transfer to daily life and contribute to lifelong learning.

The addition of professional development in adult learning principles was another conclusion, which would be beneficial for both instructors and students. For example, the instructor and students should cooperate in the development of course objectives relevant to student goals, including the criteria for implementation of authentic assessments or other forms of performance measurement for progress toward learning outcomes. Faculty sharing instructional strategies and learning principles used with adult learners, including the assessment of course objectives, can improve retention and academic success (King, 2017). Actively participating in the learning process, practicing, and testing the immediate application of new knowledge are learner-centered instructional strategies and forms of self-directed evaluation (King, 2017).

Using written tests as the main method of evaluating is a teacher-centered method (Knowles et al., 2015; Wlodkowski & Ginsberg, 2017). Instructors reported to use

written tests *Often* (30.77%), and students reported written tests are used *Often* (45%) as the primary method of evaluating students. The use of written tests as the main method of evaluation indicated this method provided a conventional, efficient, and convenient means of assessing or measuring academic outcomes (Wlodkowski & Ginsberg, 2017). Assessments were reported by instructors as *Almost always* (34%) to be used to determine the degree of academic growth rather than indicate new directions for learning, while students reported the use of assessments for academic growth as *Always* (41.67%). Developing authentic assessments which provide opportunities for adult learners to demonstrate their knowledge, learning, and skills strengthens the learners' performance and satisfaction with the learning process (Knowles et al., 2015; Wlodkowski & Ginsberg, 2017).

Implications for Practice

Based on the findings and conclusions of this study, several practices could be implemented for the benefit of students, faculty, and university administration. Implications for improved practices include opportunities for student input, professional development regarding adult student characteristics and needs, and professional development in adult learning principles and instructional strategies. Incorporating strategies for adult learners will help students to continue their education and complete a degree program. Adult students completing degree programs and pathways to gainful employment in their field of study benefits the university in meeting performance measures set by state and federal government agencies with oversight of higher education institutions. Adult learning principles can be used to design and develop changes beneficial to students, faculty, and university administration.

Policy changes to allow instructors to develop or modify course learning objectives after assessing student learning or experience at the beginning of the semester would incorporate adult learning principles. Based on the findings of this study, students have limited opportunities for input in the development of the course or instructional objectives. Acceptable academic policy requires instructors to submit course syllabi before the beginning of each semester to the academic affairs office. Collaboration between the instructor and students in planning learning outcomes and performance measures would promote student contributions to the course and increase student satisfaction.

According to the study, 57% of the instructors reported *Almost always* sticking to the objectives from the beginning of the program. Therefore, assessing and incorporating student needs into course objectives from the onset would be beneficial for instructors and students. Following student input, modified course objectives in course syllabi would represent both student and instructor expectations for learning outcomes. In the study of adult learning processes and strategies, students must see the value of learning toward a goal of their choosing or a collective goal (Wlodkowski & Ginsberg, 2017). Choosing learning goals would be beneficial to students to feel connected and included in the learning process, therefore encouraging involvement.

As part of the transformative learning process, when the adult student connects prior knowledge with new information, understanding is enhanced (Merriam, 2017). Connecting new information to something that matters to the student will help develop meaning and relevancy (Knowles et al., 2015). According to Wlodkowski and Ginsberg (2017), developing a sense of meaning and relevancy sustains involvement and develops

a sense of caring. Emotional involvement encourages enjoyment and feelings of significance, which help learners feel connected (Cranton, 2016). Providing professional development for instructors in the characteristics of adult learners and strategies to help the students become connected to the new information or learning environment to their prior experiences will encourage the adult learner to be motivated and involved.

Adults feel safe in familiar situations and comfortable to develop a sense of trust. Encouraging meaningful dialogue empowers adult learners to be self-directed or motivated rather than follow a mandated expectation (Cranton, 2016). Researchers in adult learning strategies found when the adult learner is treated with respect the individual can access experiences and relate new information to give meaning and enhance his or her motivation to learn (Cranton, 2016; Knowles et al., 2015; Wlodkowski & Ginsberg, 2017).

Reviews of prior research in teaching strategies and adult learning principles used in higher education classrooms document challenges for the instructors in making changes in the learning environment (Guglielmino, 2013; Hyun et al., 2017; Wlodkowski & Ginsberg, 2017). In this study, instructors reported to *Often* (34%) and *Almost always* (34%) use written assessments as the primary form of evaluation of learning growth rather than for determining new directions for learning. Students reported written assessments are *Always* (41.67%) used as the primary form of evaluation of learning growth rather than for determining new directions for learning. Faculty reported to *Seldom* (46%) use different materials for different students. All content areas may not be conducive to varying methods of performance assessments.

According to Knowles et al. (2015), adult learners are interested in applying new learning to work situations and real-life. Self-directed learning and application of new information increase the effect of the learning to aid adult students in making changes in behaviors or expectations based on prior experiences (Merriam, 2017). As the instructor guides the students to participate in planning and implementing learning experiences, the adult learner may resist participatory learning and will need transition strategies from instructors (Guglielmino, 2013). Providing instructors training in learner-centered strategies and exploring assessment options would allow opportunities to improve classroom learning environments and increase student performance outcomes.

Delivering professional development for instructors and staff utilizing the adult learning principles could optimize the learning experience. The delivery format of professional development could be modified to be engaging and participatory instead of the lecture format, which is more passive. Providing a similar learning environment promoted for optimal instruction practices for the adult students would offer the connectivity for the instructors and staff members to similar learning situations the adult students experience.

Faculty receiving professional development through internal training or external conferences and sharing instructional techniques used successfully with adult learners would include the utilization of competencies adult learners already possess and how to help adult students identify their problems to be solved. In this study, a positive finding and learner-centered technique reported *Often* by 58.33% of the instructors was the utilization of prior learnings of the adult students. Recognition of instructors utilizing positive instructional methods with adult students would encourage self-efficacy among

faculty members. Faculty members, whether full-time or part-time, are often hired and expected to be masters of contextual material in their field of study and not always formally trained in educational methods or instructional delivery modes. The university could provide professional development, or individual faculty members may choose external conferences, workshops, or training to improve instructional techniques.

Adult learning principles identified in research studies to help adults learn best included wanting or needing to learn something, opportunities for control over the learning process, having a non-threatening and respectful environment, and utilizing previous experiences as a resource (Henschke, 2015; Knowles et al., 2015; Merriam & Bierema, 2014; Palis & Quiros, 2014). Additional adult learning principles are allowing for individual learning style needs to be met, providing active participation in the learning process, providing enough time to incorporate new information, and arranging opportunities to practice and apply what was learned. Adult students tend to focus on relevant problems and practical applications of concepts and need timely feedback to check progress towards their goals (Knowles et al., 2015). Teacher behavior is related to student achievement as the teacher's role is more of a facilitator of knowledge in the learning process (Henschke, 2015; Hyun et al., 2017; Knowles et al., 2015; Palis & Quiros, 2014).

In this study, students reported another learner-centered approach practiced *Often* by 60.87% of their instructors was to have them identify their problems to be solved. As instructors become aware of the needs and challenges of the adult learners, assistance can be provided for the development of the student to become more independent and be a self-directed learner. Networking with other colleges and universities in professional

associations for instructional development, strategies, and delivery methods for working successfully with adult student learning outcomes, satisfaction, and retention would be beneficial for the administration, instructors, and students.

The implications for practice discussed in this section included policy changes, professional development for instructors and staff regarding adult students, and strategies for utilizing adult learning principles. Changes in practices could be made for assessing students and permitting student input for learning goals and objectives. Modifications in the delivery format of professional development for instructors and staff members regarding adult students and elective training for instructional delivery integrating adult learning strategies could be incorporated with current practices to benefit students, faculty, and university administration.

Recommendations for Future Research

Recommendations for further study would be to expand the survey to include other two-year or community colleges to determine if outcomes are similar. According to Creswell (2014) and discussed in Chapter One, a location limitation exists when a study is limited to one location, as was this study since the survey was completed by students and faculty of one University. The researcher should consider the time within the academic calendar to secure IRB permissions and for data collection and analysis so there is ample availability of students and instructors. Pre- and post-surveys of students and instructors could be conducted to determine if strategies following professional development for instructional methods utilizing adult learning principles were implemented. Future studies of adult learning principles should include online or distance learning instructional methods.

Demographic questions should be included for further analysis of student age, roles and responsibilities, a field of study or major, and length of time enrolled or semester of enrollment. Faculty demographic questions for future study could include the length of time the faculty member had taught and the content field of the faculty member. Future studies using mixed-method research could include focus groups or interviews of random students and faculty for in-depth responses. Interviews could provide information from students and faculty on adult learning strategies, services for enhancing academic engagement, and ways to improve retention of adult learners.

Summary

The overall findings of this study indicated instructors are utilizing the principles of adult learning. However, teacher-centered methods still dominate the instructional methods utilized in classrooms of higher education (Chen, 2017). Faculty members identified a higher percentage of utilization of adult learner methods than students. A limited number of faculty (12%) had self-reported scores higher than the mean score of 146 on the Principles of Adult Learning Scale, which placed their adult learning instructional methods in the learner-centered category. The remaining 88% of the faculty participating in the study had self-reported scores, which fell below the 146 overall mean score on the Principles of Adult Learning Scale, which placed their adult learning instructional methods in the teacher-centered category.

Students identified faculty instructional methods using the Adapted Principles of Adult Learning Scale. The overall mean score students reported for faculty instructional methods was 110, which fell below the overall mean of 146 for the survey. Students participating in the survey reported faculty practices to be in the range of scores between

81 to 137. The student responses of the faculty instructional methods based on the Principles of Adult Learning Scale were in the teacher-centered category.

Studies in the motivations for adult learning and the life-long learning process indicate a need to understand the relationship between the students' motivation and achievement level for student satisfaction and retention (Sogunro, 2015; Wlodkowski & Ginsberg, 2017). With a focus on satisfaction and retention of adult learners for an educated workforce and economic development within communities, educators need to understand the importance and value of adult learners in higher education. Increases in pay or salaries, job promotion, self-development, and utilization of skills are motivational factors for adult learners to enroll in higher education (Chen, 2017).

Promoting learning as a life-long process and quality education as an investment to employers, future students, and the economic development of communities at large making students work-ready and global citizens are a few of the reasons colleges and universities are experiencing increased enrollments of adult students (Chen, 2017; Egizii, 2015; Merriam, 2017). Utilizing research in adult learning methods and motivation aids in providing skills and a knowledge base for 21st-century adult learners to compete and succeed in the future (Wlodkowski & Ginsberg, 2017). Supporting faculty, staff, and administrators in creating a positive learning environment where adult learners are valued for their skills and strengths will be beneficial to sustaining communities of higher education (Markle, 2015). Contributing factors for adult student success in higher education has been attributed to cultivating a sense of belonging through positive academic and social interactions, flexibility, support services, and understanding faculty (Goncalves & Trunk, 2014). A paradigm shift and collaboration are needed among

faculty, staff, and administration to address the increasing numbers of adult learners in higher education (Merriam, 2017).

The foundation is in place to support the success of all students as higher education communities strive to provide for a meaningful educational experience for the diverse population of adult students. Today's world is fast-paced, and adult students have challenges to overcome in everyday life as they pursue their goals. As the population of adult learners increases in higher education, it is imperative their needs are addressed, and resources are provided to increase adult student success, satisfaction, and retention. Creating an environment to provide a meaningful educational experience for adult students can be accomplished by understanding the unique needs of adult learners and applying the principles of adult learning.

References

Acedo, C., & Hughes, C. (2014). Principles for learning and competences in the 21st-century curriculum. *Prospects, 44,* 503-525. doi: 10.1007/s11125-014-9330-1

Bergman, M., Gross, J. P., Berry, M., & Shuck, B. (2014). If life happened but a degree didn't: Examining factors that impact adult student persistence. *The Journal of Continuing Higher Education, 62*(2), 90-101. doi: 10.1080/07377363.2014. 915445

Blackley, S., & Sheffield, R. (2015). Digital andragogy: A richer blend of initial teacher education in the 21st century. *Issues in Educational Research, 25*(4), 397-414. Retrieved from http://www.iier.org.au/iier25/blackley-2.html

Bluman, A. (2015). *Elementary statistics: A step by step approach* (7th ed.). Boston, MA: McGraw-Hill.

Bowers, A., & Bergman, M. (2016). Affordability and the return on investment of college completion: Unique challenges and opportunities for adult learners. *The Journal of Continuing Higher Education, 64*(3), 144-151. doi: 10.1080/07377363.2016. 1229102

Boyer, S. L., Edmondson, D. R., Artis, A. B., & Fleming, D. (2014). Self-directed learning: A tool for lifelong learning. *Journal of Marketing Education, 36*(1), 20-32. doi: 10.1177/027347531349010

Brame, C. (2016). Active learning. Retrieved from https://cft.vanderbilt.edu/active-learning/

Bruce-Sanford, G., Heskeyahu, T., Longo, J., & Rundles, K. (2015). The role of counseling centers for serving non-traditional students in higher education.

PAACE Journal of Lifelong Learning, 24, 7-30. Retrieved from https://www.iup.

edu/ace/paace/v24-2015/

Byrd, J. L. (2010). *Educational philosophies, teaching styles, learning strategy*

preferences, and attitude toward continuing education of nationally certified sign

language interpreters. Unpublished doctoral dissertation, Oklahoma State

University, Stillwater. Retrieved from www.conticreations.com/Byrd_

Dissertation

Caruth, G. D. (2014). Meeting the needs of older students in higher education.

Participatory Educational Research, 1(2), 21-35. Retrieved from http: //www.

partedres.com

Center for Community College Student Engagement. (2017). *Even one semester: Full-*

time enrollment and student success. Austin, TX: The University of Texas at

Austin, College of Education, Department of Educational Administration,

Program in Higher Education Leadership.

Chen, J. C. (2014). Teaching nontraditional adult students: Adult learning theories in

practice. *Teaching in Higher Education, 19*(4), 406-418. doi: 10.1080/13562517.

2013.860101

Chen, J. C. (2017). Nontraditional adult learners: The neglected diversity in

postsecondary education. *School for New Learning Faculty Publications,* 57, 1-

12. doi: 10.1177/2158244017697161

Christie, M., Carey, M., Robertson, A., & Grainger, P. (2015). Putting transformative

learning theory into practice. *Australian Journal of Adult Learning, 55*(1), 9-30.

Retrieved from https://files.eric.ed.gov/fulltext/EJ1059138.pdf

Cochran, C., & Brown, S. (2016). Andragogy and the adult learner. In K. Flores, K. Kirstein, C. Schieber, & S. Olswang (Eds.), *Supporting the success of adult and online students* (pp. 73-84). Seattle, WA: City University of Seattle.

Conti, G. (2004). Identifying your teaching style. In M. W. Galbraith (Ed.), *Adult learning methods* (3rd ed., pp. 75-91). Malabar, FL: Krieger Publishing Company.

Conti, G. (2009). Development of a user-friendly instrument for identifying the learning strategy preferences of adults. *Teaching and Teacher Education, 25*(6), 887-896. doi: 10.1016/j.tate.2009.02.024

Cranton, P. (2016). *Understanding and promoting transformative learning* (3rd ed.). Sterling, VA: Stylus Publishing.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Los Angeles, CA: SAGE.

Culp, M. M., & Dungy, G. J. (2014). *Increasing adult learner persistence and completion rates: A guide for student affairs leaders and practitioners*. Washington, DC: NASPA-Student Affairs Administrators in Higher Education.

Dauer, R. A., & Absher, B. (2015). The influence of student support programs upon the academic success of nontraditional students. *International Journal of Education, 7*(4), 97-119. doi: 10.5296/ije.v7i4.7733

Dutcher, G. (2016). *Faculty's role in the retention of nontraditional undergraduate students* [Abstract]. [Doctoral dissertation, Fielding Graduate University]. Retrieved from https://eric.ed.gov/?id=ED567734

Edwards, R., Sieminski, S., & Zeldin, D. (2013). Introduction. In R. Edwards, S.

Sieminski, & D. Zeldin (Eds.), *Adult learners, education and training* (pp. 1-9).

New York, NY: Routledge. doi: 10.4324/978131 5003467

Egizii, R. (2015). Self-directed learning, andragogy and the role of alumni as members of

professional learning communities in the post-secondary environment. *Procedia-*

Social and Behavioral Sciences, 174, 1740-1749. doi: 10.1016/j.sbspro.2015.01.

832

Ekoto, C. E., & Gaikwad, P. (2015). The impact of andragogy on learning satisfaction of

graduate students. *American Journal of Educational Research, 3*(11), 1378-1386.

doi: 10.12691/education-3-11-6

Fink, L. D. (2013). *Creating significant learning experiences* (2nd ed.). San Francisco,

CA: John Wiley & Sons.

Foote, L. S. (2015). Transformational learning: Reflections of an adult learning theory.

Adult Learning, 26(2), 84-86. doi: 10.1177/1045159515573017

Fraenkel, J., Wallen, N., & Hyun, H. (2015). *How to design and evaluate research in*

education (9th ed.). New York, NY: McGraw-Hill.

Goncalves, S. A., & Trunk, D. (2014). Obstacles to success for the nontraditional student

in higher education. *Psi Chi Journal of Psychological Research, 19*(4), 164-172.

Grabowski, C., Fayard, V., Ragen, K., Rush, M., & Watkins-Lewis, K. (2016). Today's

non-traditional student: Challenges to academic success and degree completion.

Inquiries Journal/Student Pulse, *8*(03). Retrieved from http://www.inquiries

journal.com/a?id=1377

Grover, K., & Miller, M. (2014). Gender differences in self-directed learning practices among community members. *PAACE Journal of Lifelong Learning, 23*, 19-31. Retrieved from https://www.iup.edu/ace/paace/v23-2014/

Guglielmino, L. M. (2013). The case for promoting self-directed learning in formal educational institutions. *SA-eDUC Journal, 10*(2), 1-18. Retrieved from http:// www.nwu.ac.za/sites/www.nwu.ac.za/files/files/p-saeduc/sdlissue/Gugliel minoL.M.Thecaseforpromotingself-directedlear.pdf

Guglielmino, L. M. (2014). Guglielmino: Self-directed learning-What about the adults? Retrieved from http://www.p21.org/news-events/p21blog/1475-guglielmino-self-directed-learning-what-about-the-adults.

Hattie, J. A. T., & Donoghue, G. M. (2018). A model of learning. In K. Illeris (Ed.). *Contemporary theories of learning.* (2nd ed., pp. 97-113). New York, NY: Routledge.

Henschke, J. A. (2015). Focusing on the six major themes in the global perspective of andragogy: A June 2015 update. *International Adult and Continuing Education Hall of Fame Repository.* Retrieved from https://trace.tennessee.edu/cgi/view content.cgi?referer=&httpsredir=1&article=1410&context=utk_IACE-browseall

Henschke, J. A. (2016). A history of andragogy and its documents as they pertain to adult basic and literacy education. *PAACE Journal of Lifelong Learning, 25,* 1-28. Retrieved from https://www.iup.edu/ace/paace/v25-2016/

Hyun, J., Ediger, R., & Lee, D. (2017). Students' satisfaction on their learning process in active learning and traditional classrooms. *International Journal of Teaching and*

Learning in Higher Education, *29*(1), 108-118. Retrieved from https://files.eric.
ed.gov/fulltext/EJ1135821.pdf

Illeris, K. (2015). Transformative learning in higher education. *Journal of Transformative Learning*, *3*(1), 46-51. Retrieved from https://jotl.uco.

Illeris, K. (2018). A comprehensive understanding of human learning. In K. Illeris (Ed.), *Contemporary theories of learning.* (2nd ed., pp. 1-14). New York, NY: Routledge.

Institutional Research Office of Academic Affairs. (2017). *Census file.* Internal MSU-WP report: Unpublished.

Iversen, A.-M., Pedersen, A. S., Krogh, L., & Jensen, A. A. (2015). Learning, leading, and letting go of control: Learner-led approaches in education. *SAGE Open*. Retrieved from https://doi.org/10.1177/2158244015608423

Jarvis, P. (2018). Learning to be a person in society. In K. Illeris (Ed.). *Contemporary theories of learning.* (2nd ed., pp. 2-28). New York, NY: Routledge.

Johnson, M., Taasoobshirazi, G., Clark, L., Howell, L., & Breen, M. (2016). Motivations of traditional and nontraditional college students: From self-determination and attributions, to expectancy and values. [Abstract]. *Journal of Continuing Higher Education, 64*(1), 3-15. Retrieved from https://doi.org/10.1080/07377363.2016.1132880

King, K. P. (2017). *Technology and innovation in adult learning*. San Francisco, CA: Josey-Bass.

Knowles, M. S., Holton, E. F., & Swanson, R. A. (2015). *The adult learner: The definitive classic in adult education and human resource development* (8th ed.). New York, NY: Routledge.

Learning environment. (2013). In S. Abbott (Ed.), *The glossary of education reform*. Retrieved from http://edglossary.org/learning-environment

Leigh, K., Whitted, K., & Hamilton, B. (2015). Integration of andragogy into preceptorship. *Journal of Adult Education, 42*(1), 9-17. Retrieved from https://files.eric.ed.gov/fulltext/EJ1072924.pdf

Lin, X. (2016). Barriers and challenges of female adult students enrolled in higher education: A literature review. *Higher Education Studies, 6*(2), 119-126. doi: 10.5539/hes.v6n2p119

Luke, D., & Justice, M. (2016). Motivating adult learners: Exploring the emergence of adult business students in an East Texas University. *Administrative Issues Journal: Connecting Education, Practice and Research, 6*(2), 74-82. doi: 10. 5929/2016.6.2.3

MacDonald, K. (2018). A review of the literature: The needs of nontraditional students in postsecondary education. *Strategic Enrollment Management Quarterly, 5*(4), 159-164. doi: 10.1002/sem3.20115

Malm, E. (2018). Serving the new majority student. In E. Malm & M. Weber (Eds.), *Serving the new majority student* (pp. 1-12). Lanham, MD; Rowman & Littlefield.

Manyanga F., Sithole, A., Hanson, S. M. (2017). Comparison of student retention models in undergraduate education from the past eight decades. *Journal of Applied*

Learning in Higher Education, *(7)*, 29-41. Retrieved from https://files.eric.ed.gov/ fulltext/EJ1188373.pdf

Markle, G. (2015). Factors influencing persistence among nontraditional university students. *Adult Education Quarterly, 65*(3), 267-285. doi: 10.1177/0741713 615583085

Masika, R., & Jones, J. (2016). Building student belonging and engagement: Insights into higher education students' experiences of participating and learning together. [Abstract]. *Teaching in Higher Education, 21*(2), 138-150. doi: 10.1080/135 62517.2015.1122585

Merriam, S. B. (2017). Adult learning theory: Evolution and future directions. *PAACE Journal of Lifelong Learning, 26,* 21-37. Retrieved from https://www.iup.edu/ace/ paace/v26-2017/

Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice.* San Francisco, CA: Jossey-Bass.

Mezirow, J. (2018). Transformative learning theory. In K. Illeris (Ed.), *Contemporary theories of learning.* (2nd ed., pp. 114-128). New York, NY: Routledge.

Muneja, M. S. (2015). A theoretical basis for adult learning facilitation: Review of selected articles. *Journal of Education and Practice, 6*(31), 54-61. Retrieved from https://files.eric.ed.gov/fulltext/EJ1083398.pdf

Nessipbayeva, O., & Egger, R. (2015). A comparative study of teaching style and infrastructure of learning of higher education in Austria and Kazakhstan. *Procedia-Social and Behavioral Sciences, 197*(25), 1271-1277. doi: 10.1016/ j.sbspro.2015.07.399

Osam, E. K., Bergman, M., & Cumberland, D. M. (2017). An integrative literature review on the barriers impacting adult learners' return to college [Abstract]. *Adult Learning, 28*(2), 54-60. doi: 10.1177/1045159516658013

Palis, A. G., & Quiros, P. A. (2014). Adult learning principles and presentation pearls. *Middle East African Journal of Ophthalmology, 21*(2), 114-122. doi: 10.4103/ 0974-9233.129748

Panacci, A. G. (2015). Adult students in higher education: Classroom experiences and needs. *The College Quarterly, 18*(3). Retrieved from https://files.eric.ed.gov/ fulltext/EJ1087330.pdf

Qualtrics [Computer Software]. (2018). Retrieved from https://www.qualtrics.com/

Rabourn, K. E., BrckaLorenz, A., & Shoup, R. (2018). Reimagining student engagement: How nontraditional adult learners engage in traditional postsecondary environments. *The Journal of Continuing Higher Education, 66*(1), 22-33. doi: 10.1080/07377363.2018.1415635

Rachal, J. (2015). Reflections on the Lindeman legacy. *PAACE Journal of Lifelong Learning, 24*, 1-6. Retrieved from https://www.iup.edu/ace/paace/v24-2015/

Rodgers, K. (2016). Non-traditional student engagement at a traditional university. In S. Whalen (Ed.), *Proceedings of the 12th National Symposium on Student Retention*, Norfolk, VA (pp. 301-310). Norman, OK: The University of Oklahoma.

Rubin, B. (2018). Higher educational offerings, business models, and the new majority. In E. Malm & M. Weber (Eds.), *Serving the new majority student* (pp. 13-26). Lanham, MD: Rowman & Littlefield.

Ruffalo, Noel Levitz (2016). *2016 Report: Motivation of adult learners for completing a college degree.* Cedar Rapids, IA: Ruffalo Noel Levitz. Retrieved from www. RuffaloNL.com/Motivation

Scheele, P. R. (2015). Transformative learning in higher education: Praxis in the field of leadership change. *Journal of Transformative Learning, 3*(1), 5-12. Retrieved from https://jotl.uco.edu/index.php/jotl/article/view/45/43

Schroeder, S. M., & Terras, K. L. (2015). Advising experiences and needs of online, cohort, and classroom adult graduate learners. *NACADA Journal, 35*(1), 42-55. Retrieved from https://doi.org/10.12930/NACADA-13-044

Shapiro, D., Dundar, A., Huie, F., Wakhungu, P., Bhimdiwala, A., & Wilson, S. (2019). *Completing college: A state-level view of student completion rates* [Signature Report No. 16a]. Retrieved from https://nscresearchcenter.org/snapshot-report-yearly-success-and-progress-rates-2019/

Shapiro, D., Dundar, A., Wakhungu, P. K., Yuan, X., Nathan, A,, & Hwang, Y. (2016). *Time to degree: A national view of the time enrolled and elapsed for Associate and Bachelor's degree earners* [Signature Report No. 11]. Retrieved from https://nscresearchcenter.org/signaturereport11/

Sogunro, O. A. (2015). Motivating factors for adult learners in higher education. *International Journal of Higher Education, 4*(1), 22-37. doi: 0.5430/ijhe.v4n1p22

Stevens, J. (2014). Perceptions, attitudes, & preferences of adult learners in higher education: A national survey. *Journal of Learning in Higher Education, 10*(2), 65-78. Retrieved from https://files.eric.ed.gov/fulltext/EJ1143318.pdf

Tilley, B. P. (2014). What makes a student non-traditional? A comparison of students over and under age 25 in online, accelerated psychology courses. *Psychology Learning and Teaching, 13*(2), 95-106. Retrieved from http://dx.doi.org/10.2304/plat.2014.13.2.95

Tinto, V. (2017). Reflections on student persistence. *Student Success, 8*(2), 1-8. doi: 10.5204/ssj.v8i2.376

U.S. Department of Education. (2015). *Demographic and enrollment characteristics of nontraditional undergraduates: 2011-12* (NCES 2015-025). Retrieved from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2015025

U.S. Department of Education. (2017). *Projections of education statistics to 2025* (NCES 2017-019). Retrieved from https://nces.ed.gov/pubs2017/2017019.pdf

Watkins, C., Carnell, E., & Lodge, C. (2007). What is effective learning in classrooms? In *Effective learning in classrooms* (pp. 9-22). Thousand Oaks, CA: SAGE.

Weber, M. (2018). Student-centered design. In E. Malm & M. Weber (Eds.), *Serving the new majority student* (pp. 41-54). Lanham, MD: Rowman & Littlefield.

Williams, C. T., Walter, E. M., Henderson, C., & Beach, A. L. (2015). Describing undergraduate STEM teaching practices: A comparison of instructor self-report instruments. *International Journal of STEM Education, 2*(18). Retrieved from https://link.springer.com/article/10.1186/s40594-015-0031-y

Wilson, L. S. (2005). *A test of andragogy in a post-secondary educational setting* [Doctoral dissertation, Louisiana State University]. Retrieved from http://etd.lsu.edu/docs/available/etd-06152005-122402/restricted/Wilson_dis.pdf

Wlodkowski, R. J., & Ginsberg, M. B. (2017). *Enhancing adult motivation to learn* (4th
    ed.). San Francisco, CA: John Wiley & Sons.

York, T. T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success.
    Practical Assessment, Research & Evaluation, *20*(5), 1-20. Retrieved from http://
    pareonline.net/getvn.asp?v=20&n=5

Zeit, K. (2014). The information needs and behavior of mature community college
    students: A review of literature. *Community & Junior College Libraries, 20*(3-4),
    57-62. doi: 10.1080/02763915.2014.1015341

Appendix A

Consent to Use Survey

October 29, 2017

To: Brenda Smith

From: Gary J. Conti, Professor of Adult Education (Retired)

Re: Permission to use PALS

It is always exciting to hear of new ways that researchers have found to use the Principles of Adult Learning Scale (PALS). You have my permission to use PALS, and please consider this message as a formal permission to use PALS that may be required by your university.

In addition, PALS has been published in ERIC, in several journals, and in Adult Learning Methods by Michael Galbraith so that researchers like you can use it at no cost. There is a note at the bottom of Page 91 of the chapter in the third edition of Adult Learning Methods that grants permission to use the instrument. Therefore, feel free to use PALS in the ways you believe are most appropriate; since I am the copyright holder for PALS, you may consider this letter as your formal permission to reproduce PALS and to modify it in any way you need for your research.

Several resources related to PALS have been loaded on my website. You can download them from: http://www.conti-creations.com/pals. htm http://www.conti-creations.com/PALS_resources.htm

Good luck in your efforts. Keep me posted of your progress.

Gary J. Conti

Appendix B
Request to Chancellor

February 20, 2018

Chancellor ██████████
███████████████████████
████████████████

RE: Permission to Conduct Research Study

Dear Chancellor ██████:

I am currently enrolled in the doctoral program in the Department of Educational Leadership with an emphasis in Higher Education Administration at Lindenwood University. I am requesting permission to conduct a research study at ████████████████████████. The study pending approval from the Lindenwood University and the ██████████████ institutional review boards is entitled "*Adult learning principles used with nontraditional students in higher education to enhance learner satisfaction and retention.*"

I would like to recruit approximately 75-150 participants to anonymously complete online the Adapted Principles of Adult Learning Scale survey. The participant recruitment includes 30 instructors to anonymously complete online the Principles of Adult Learning Scale survey. Interested students and faculty, who volunteer to participate, will be given a consent form and the option to continue with the survey using the link in the electronic invitation letter. Individual results of this study will remain confidential and anonymous. The survey results will be analyzed for the dissertation, and should this study be published only collective results will be documented. No costs will be incurred by either ██████ or the individual participants.

Your approval to conduct this study will be greatly appreciated. I will follow up with a telephone call next week and answer any questions or concerns you may have. I look forward to receiving a signed letter of permission on the University's letterhead acknowledging your consent and permission for me to conduct this survey at ████████████████████████.

Sincerely,

Brenda Smith
Enclosures

Appendix C

Research Site Permission Letter

████████████████████████████

February 20, 2018

To the Lindenwood University IRB:

I am familiar with Brenda Smith's research project entitled Adult Learning Principles Used with Nontraditional Students in Higher Education to Enhance Learner Satisfaction and Retention. It is understood the approval for the research study will be required of both Lindenwood University and ███████████████ y Institutional Review Boards.

I am supportive of this research study and understand it will be carried out following sound ethical principles and that participant involvement in this research study is strictly voluntary and provides confidentiality of research data, as described in the protocol.

Therefore, as a representative of ██████████████ I agree that Brenda Smith's research project may be conducted at our institution.

Sincerely,

████████████████████

███

Appendix D

Approval Letter from Lindenwood IRB Committee

LINDENWOOD

LINDENWOOD UNIVERSITY   ST. CHARLES, MISSOURI

DATE: March 6, 2018

TO: Brenda Smith
FROM: Lindenwood University Institutional Review Board

STUDY TITLE: [1061833-1] Adult Learning Principles Used with Nontraditional Students in Higher Education to Enhance Learner Satisfaction and Retention
IRB REFERENCE #:
SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: March 6, 2018

REVIEW CATEGORY: Exemption category # 1

Thank you for your submission of New Project materials for this research study. Lindenwood University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office.

If you have any questions, please send them to IRB@lindenwood.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Lindenwood University Institutional Review Board's records.

Appendix E

Approval Letter from Research Site IRB Committee

IRB-FY2018-722 - Initial: Initial Approval ▮▮▮▮▮▮▮▮▮

Mon 5/21/2018
3:40 PM
To:

[BLACK BOX] U N I V E R S I T Y

To:
Brenda Smith
Users loaded with unmatched Organization affiliation.

RE: Notice of IRB Approval
Submission Type: Initial
Study#: IRB-FY2018-722
Study Title: Adult Learning Principles Used with Nontraditional Students in Higher Education to Enhance Learner Satisfaction and Retention **Decision:** Approved

Approval Date: May 21, 2018
Expiration Date: May 19, 2019

This submission has been approved by the ▮▮▮▮▮▮▮▮▮▮Institutional Review Board (IRB) for the period indicated.

_____

_____

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration
date.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB.

This study was reviewed in accordance with federal regulations governing human subjects research, including those found at 45 CFR 46 (Common Rule), 45 CFR 164 (HIPAA), 21 CFR 50 & 56 (FDA), and 40 CFR 26 (EPA), where 'applicable.

Researchers Associated with this Project:
PI: Brenda Smith
Co-PI:
Primary Contact Brenda Smith
Other Investigators:

1/1

Appendix F

Request for Data

██████████

████████████████████████

February 20, 2018

████████████

Institutional Research Officer

████████████████████████
████████████████████

RE: Data to Conduct Research Study

Dear ████████:

I am requesting permission to obtain data to conduct a research study at ████████████████████
████. I am currently enrolled in the doctoral program in the Department of Educational Leadership with an emphasis in Higher Education Administration at Lindenwood University. The study pending approval by the Lindenwood University, ████████████████████████████, and the administration is entitled "*Adult learning principles used with nontraditional students in higher education to enhance learner satisfaction and retention.*"

I am requesting contact and enrollment data for currently enrolled nontraditional students who have completed at least one semester at ████████████████████████████. I also request contact information for faculty members who have taught in higher education for at least three years (or six semesters).

Interested students and faculty, who volunteer to participate, will be given an electronic consent form. The survey results will be analyzed for the dissertation, and individual results of this study will remain confidential and anonymous. Should this study be published, only collective results will be documented. No costs will be incurred by either ████████ or the individual participants.

Your assistance to conduct this study will be greatly appreciated. If you have questions, you may contact me at my email address: ████████████████████

Sincerely,

████████████████████

Enclosure: CONSENT FORM

Appendix G

Student Recruitment Letter

Dear Students,

      You are invited to participate in an online survey for students completing their Associates Degree on this campus. The purpose of the study is to gain insight into the types of adult learning principles used with nontraditional students in higher education, which enhances learner satisfaction and retention.

      The data collected and analyzed will help the faculty gain a better understanding of teaching strategies for adult students' learning satisfaction and learning needs. The Adapted Principles for Adult Learning Scale survey should require approximately 5-10 minutes to complete. The information gathered is confidential and will only be viewed by the researcher and then anonymously reported in the dissertation.

      I appreciate you taking the time to participate in this study. To complete the survey, please click on the link below.

http://www.xxxxxxxxxxx

Thank you for your help.

Sincerely,

Brenda Smith

Lindenwood University Doctoral Student

Appendix H

Faculty Recruitment Letter

Dear Faculty,

You are invited to participate in an online survey for faculty who have taught a minimum of three years in higher education. The purpose of the study is to gain insight into the types of adult learning principles used with nontraditional students in higher education, which enhances learner satisfaction and retention.

The data collected and analyzed will help the faculty gain a better understanding of teaching strategies for adult students' learning satisfaction and learning needs. The Principles for Adult Learning Scale survey should require approximately 5-10 minutes to complete. The information gathered is confidential and will only be viewed by the researcher and then anonymously reported in the dissertation.

I appreciate you taking the time to participate in this study. To complete the survey, please click on the link below.

http://www.xxxxxxxxxxx

Thank you for your help.

Sincerely,

Brenda Smith

Lindenwood University Doctoral Student

Appendix I

Survey Information Sheet

LINDENWOOD

Survey Research Information Sheet

You are being asked to participate in a survey conducted by Brenda Smith under the guidance of Dr. Rhonda Bishop at Lindenwood University. We are doing this study to gain insight into adult learning principles higher education instructors and students report being used with nontraditional students to enhance earner satisfaction and retention. We will be asking about 75-150 other people to answer these questions. It will take about five to ten minutes to complete this survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window.

There are no risks from participating in this project. We will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Brenda Smith at bms579@lindenwood.edu

Dr. Rhonda Bishop at rbishop@lindenwood.edu

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

Appendix J

Adapted Principles of Adult Learning Scale (PALS)

Developed by Gary J. Conti

DIRECTIONS

The following survey contains several things that a teacher of adults might do in a classroom. You may personally find some of them desirable and find others undesirable. For each item please respond to the way you **most frequently experienced** the action described in the item. Your choices are *Always*, *Almost Always*, *Often*, *Seldom*, *Almost Never*, and *Never*. If the item **does not apply** to you, circle N for never.

Always	*Almost Always*	*Often*	*Seldom*	*Almost Never*	*Never*
A	**AA**	**O**	**S**	**AN**	**N**

Question/Item	Response Category	Value
1. I participated in developing the criteria for evaluating performance in class.	A AA O S AN N	
2. The instructor used disciplinary action when needed.	A AA O S AN N	
3. I was allowed more time to complete assignments when needed.	A AA O S AN N	
4. I was encouraged to adopt middle class values.	A AA O S AN N	
5. I received help to find the gaps between my goals and present level of performance.	A AA O S AN N	
6. Your teacher provides knowledge rather than serve as a resource person.	A AA O S AN N	
7. Your teacher sticks to the instructional objectives that he/she wrote at the beginning of a semester.	A AA O S AN N	
8. Your teacher provided informal counseling of students.	A AA O S AN N	
9. Lecturing is the best method for presenting subject material to adult students.	A AA O S AN N	
10. The classroom is arranged so that it is easy for students to interact.	A AA O S AN N	
11. Your teacher determined the educational objectives for each of the students.	A AA O S AN N	
12. The teacher planned units which differ widely as possible from the students' socio-economic backgrounds.	A AA O S AN N	
13. During group discussions the teacher motivates students by confronting him/her in the presence of classmates.	A AA O S AN N	
14. The course learning activities take into account your prior experiences.	A AA O S AN N	
15. Students participate in making decisions about the topics that will be covered in class.	A AA O S AN N	
16. There is one basic teaching method because the teacher thinks that most adults have a similar style of learning.	A AA O S AN N	
17. Different teaching techniques were used depending on the students being taught.	A AA O S AN N	

18. Discussions were encouraged among students.	A AA O S AN N	
19. Written tests were used to assess the degree of academic growth rather than to indicate new directions for learning.	A AA O S AN N	
20. Competencies that most adults already possess were used to achieve educational objectives.	A AA O S AN N	
21. The teacher used what is proven that adults need to learn as the chief criteria for planning learning activities.	A AA O S AN N	
22. Errors are a natural part of the learning process.	A AA O S AN N	
23. You had individual conferences with the teacher to help you identify your educational needs.	A AA O S AN N	
24. Your teacher allows you to work at your own rate regardless of the amount of time it takes to learn a new concept.	A AA O S AN N	
25. Your teacher helps you develop short-range as well as long-range objectives.	A AA O S AN N	
26. Your teacher maintained a well-disciplined classroom to reduce interference to learning.	A AA O S AN N	
27. Your teacher avoids discussion of controversial subjects that involve value judgments.	A AA O S AN N	
28. Students are allowed to take periodic breaks during class.	A AA O S AN N	
29. Teaching methods that foster quiet, productive desk work are used in your class.	A AA O S AN N	
30. The tests are the chief method of evaluating students in your class.	A AA O S AN N	
31. During the course activities are planned that will encourage each student's growth from dependence on others to greater independence.	A AA O S AN N	
32. The instructional objectives of the teacher match the individual abilities and needs of the students.	A AA O S AN N	
33. Issues that relate to the student's concept of himself/herself are avoided.	A AA O S AN N	
34. Students are encouraged to ask questions about the nature of society.	A AA O S AN N	
35. Student's motives for participating in continuing education are used as a major determinant in the planning of learning objectives.	A AA O S AN N	
36. Students can identify their own problems that need to be solved.	A AA O S AN N	
37. All students in my class are given the same assignment on a given topic.	A AA O S AN N	
38. The teacher used materials that were originally designed for students in elementary and secondary schools.	A AA O S AN N	
39. Adult learning activities were organized according to the problems that students encounter in everyday life.	A AA O S AN N	
40. The teacher measured a student's long term educational growth by comparing his/her total achievement in class to his/her expected performance as measured by national norms from standardized tests.	A AA O S AN N	

41. Competition among students is encouraged.	A AA O S AN N	
42. Different materials were used with different students.	A AA O S AN N	
43. Students received help relating new learnings to their prior experiences.	A AA O S AN N	
44. Problems of everyday living were used as part of the course.	A AA O S AN N	

Appendix K

Principles of Adult Learning Scale (PALS)

Developed by Gary J. Conti

DIRECTIONS

The following survey contains several things that a teacher of adults might do in a classroom. You may personally find some of them desirable and find others undesirable. For each item please respond to the way you **most frequently practice** the action described in the item. Your choices are *Always*, *Almost Always*, *Often*, *Seldom*, *Almost Never*, and *Never*. If the item **does not apply** to you, circle N for never.

Always	*Almost Always*	*Often*	*Seldom*	*Almost Never*	*Never*
A	**AA**	**O**	**S**	**AN**	**N**

Question/Item	Response Category	Value
1. I allow students to participate in developing the criteria for evaluating their performance in class.	A AA O S AN N	
2. I use disciplinary action when it is needed.	A AA O S AN N	
3. I allow older students more time to complete assignments when they need it.	A AA O S AN N	
4. I encourage students to adopt middle class values.	A AA O S AN N	
5. I help students diagnose the gaps between their goals and their present level of performance.	A AA O S AN N	
6. I provide knowledge rather than serve as a resource person.	A AA O S AN N	
7. I stick to the instructional objectives that I write at the beginning of a program.	A AA O S AN N	
8. I participate in the informal counseling of students.	A AA O S AN N	
9. I use lecturing as the best method for presenting my subject material to adult students.	A AA O S AN N	
10. I arrange the classroom so that it is easy for students to interact.	A AA O S AN N	
11. I determine the educational objectives for each of my students.	A AA O S AN N	
12. I plan units which differ widely as possible from my students' socio-economic backgrounds.	A AA O S AN N	
13. I get a student to motivate himself/herself by confronting him/her in the presence of classmates during group discussions.	A AA O S AN N	
14. I plan learning episodes to take into account my students' prior experiences.	A AA O S AN N	
15. I allow students to participate in making decisions about the topics that will be covered in class.	A AA O S AN N	
16. I use one basic teaching method because I have found that most adults have a similar style of learning.	A AA O S AN N	
17. I use different techniques depending on the students being taught.	A AA O S AN N	
18. I encourage dialogue among my students.	A AA O S AN N	
19. I use written tests to assess the degree of academic growth rather than to indicate new directions for learning.	A AA O S AN N	

20. I utilize the many competencies that most adults already possess to achieve educational objectives.	A AA O S AN N	
21. I use what history has proven that adults need to learn as my chief criteria for planning learning episodes.	A AA O S AN N	
22. I accept errors as a natural part of the learning process.	A AA O S AN N	
23. I have individual conferences to help students identify their educational needs.	A AA O S AN N	
24. I let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept.	A AA O S AN N	
25. I help my students develop short-range as well as long-range objectives.	A AA O S AN N	
26. I maintain a well disciplined classroom to reduce interference to learning.	A AA O S AN N	
27. I avoid discussion of controversial subjects that involve value judgments.	A AA O S AN N	
28. I allow my students to take periodic breaks during class.	A AA O S AN N	
29. I use methods that foster quiet, productive desk work.	A AA O S AN N	
30. I use tests as my chief method of evaluating students.	A AA O S AN N	
31. I plan activities that will encourage each student's growth from dependence on others to greater independence.	A AA O S AN N	
32. I gear my instructional objectives to match the individual abilities and needs of the students.	A AA O S AN N	
33. I avoid issues that relate to the student's concept of himself/herself.	A AA O S AN N	
34. I encourage my students to ask questions about the nature of their society.	A AA O S AN N	
35. I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.	A AA O S AN N	
36. I have my students identify their own problems that need to be solved.	A AA O S AN N	
37. I give all my students in my class the same assignment on a given topic.	A AA O S AN N	
38. I use materials that were originally designed for students in elementary and secondary schools.	A AA O S AN N	
39. I organize adult learning episodes according to the problems that my students encounter in everyday life.	A AA O S AN N	
40. I measure a student's long term educational growth by comparing his/her total achievement in class to his/her expected performance as measured by national norms from standardized tests.	A AA O S AN N	
41. I encourage competition among my students.	A AA O S AN N	
42. I use different materials with different students.	A AA O S AN N	
43. I help students relate new learning to their prior experiences.	A AA O S AN N	
44. I teach units about problems of everyday living.	A AA O S AN N	

Appendix L

Scoring the Principles of Adult Learning Scale (PALS)

Developed by Gary J. Conti

Positive Questions
Question numbers 1, 3, 5, 8, 10, 14, 15, 17, 18, 20, 22, 23, 24, 25, 28, 31, 32, 34, 35, 36, 39, 42, 43, and 44 are positive items. For positive questions, assign the following values: Always=5, Almost Always=4, Often=3, Seldom=2, Almost Never=1, and Never=0.

Negative Questions
Question numbers 2, 4, 6, 7, 9, 11, 12, 13, 16, 19, 21, 26, 27, 29, 30, 33, 37, 38, 40, and 41 are negative items. For negative questions, assign the following values: Always=0, Almost Always=1, Often=2, Seldom=3, Almost Never=4, and Never=5.

Missing Questions
Omitted questions are assigned a neutral value of 2.5.

Factor 1: Learner-Centered Activities

Question #	2	4	11	12	13	16	19	21	29	30	38	40	Total Score
Score													

Factor 2: Personalizing Instruction

Question #	3	9	17	24	32	35	37	41	42	Total Score
Score										

Factor 3: Relating to Experience

Question #	14	31	34	39	43	44	Total Score
Score							

Factor 4: Assessing Student Needs

Question #	5	8	23	25	Total Score
Score					

Factor 5: Climate Building

Question #	18	20	22	28	Total Score
Score					

Factor 6: Participation in the Learning Process

Question #	1	10	15	36	Total Score
Score					

Factor 7: Flexibility for Personal Development

Question #	6	7	26	27	33	Total Score
Score						

Computing and Interpreting Your Scores

Factor scores are calculated by summing the value of the responses for each item/question in the factor. Compare your factor score values to their respective means (see table below). If your score is equal to or greater than each respective mean, then this suggests that such factors are indicative of your teaching style. From such factors, you will then begin to identify what strategies you use to be consistent with your philosophy (from the Philosophy of Adult Education Inventory, PAEI). Those scores that are less than the mean indicate possible areas for improving a more learner-centered approach to teaching.

An individual's total score on the instrument is calculated by summing the value of each of the seven factors (see table below). Scores between 0-145 indicate your style is "teacher-centered." Scores between 146-220 indicate your style as being "learner-centered."

For a complete description of PALS and each of the seven factors, see Conti, G.J. (1998). Identifying Your Teaching Style (Ch. 4). In M.W. Galbraith (Ed.), *Adult Learning Methods* (2nd ed., pp. 73-84). Malabar, FL: Krieger Publishing Company.

Factor	Mean	Standard Deviation	Your Score
1	38	8.3	
2	31	6.8	
3	21	4.9	
4	14	3.6	
5	16	3.0	
6	13	3.5	
7	13	3.9	
TOTAL	146	20	

Vita

Brenda Smith currently serves as Department Head and Assistant Professor for the Child and Family Development Department at Missouri State University-West Plains in West Plains, Missouri. Smith holds a Bachelor of Science and Master of Science in Education from Missouri State University in Springfield, Missouri. Her career as an educator includes teaching and administration in secondary and postsecondary programs in southern Missouri. Smith served as Director of Career Education for the West Plains R-VII School District, Adult Education Supervisor, Financial Aid Administrator, Family and Consumer Sciences teacher, and per course university instructor. Smith's community service includes leadership roles in various civic organizations, community advisory boards, and eight years of public service on the local City Council.