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ANALYSIS OF TEACHING STYLES, ADULT LEARNING THEORIES, AND FACTORS INFLUENCING TEACHING STYLE PREFERENCES IN ADULT EDUCATION INSTRUCTORS: IMPLICATION FOR PRACTICE

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ANALYSIS OF TEACHING STYLES, ADULT LEARNING THEORIES, AND FACTORS INFLUENCING TEACHING STYLE PREFERENCES IN ADULT EDUCATION INSTRUCTORS: IMPLICATION FOR PRACTICE

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Education at Virginia Commonwealth University.

by

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Dedication

This dissertation is dedicated to my parents; my late father Philip Cheptaiget Lele and my mother Teresa Lele. Thank you for instilling the importance of education in my life.

and

To my children Kelvin Kipkoech and Bella Cherotich. Thank you for giving meaning to my life.

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Abstract

The teacher is the most influential and important variable in the classroom for student achievement. Therefore, the need for teachers to identify and utilize best teaching practices is fundamental to a progressing society. Despite the literature advocating and proposing the student-centered approach as the preferred method of teaching in adult education, most empirical studies indicate that teachers employed the traditional teacher-centered approach. The purpose of this study was to examine the teaching style preferences of adult education instructors and the influence of gender, age, participation in professional development in adult education, years of teaching experience, teaching subject, and levels of education on teaching style preferences. A quantitative survey research design was used in which a two-part survey was utilized to collect data from the teachers. The first part of the survey was developed by the researcher to gather personal information about the teachers, while the second part of the questionnaire utilized the unmodified Principles of Adult Learning Scale (PALS). The data used for this study was collected from (N = 67) adult education instructors. The data were analyzed using descriptive statistics, independent samples t-tests, and one-way ANOVA. The dependent variables were the total scores on the PALS and the total scores of the seven PALS factors. The independent variables were the demographic variables of gender, age, educational level, years of teaching experience, professional development, and teaching subject/program.

The results from the study showed that most of the teachers (n = 49) scored below the norm mean (teacher-centered) as determined by the mean scores of PALS. Also, the results of the seven PALS factors revealed mixed method use of both teacher and student-centered approaches but a strong inclination to teacher-centered. The independent samples t-tests results showed that there was no difference in teaching style preferences between male and female

teachers and among those with different levels of education. The ANOVA results revealed a significant relationship between teaching style and the demographic factors of age, years of teaching experience, and the teaching subject. In the age category, there was a significant difference in Participation in the Learning Process factor. In the category of years of teaching experience, there was a significant difference in the total PALS score. In the teaching subject category, there was a significant difference in Relating to Experience factor. There was no significant difference in teaching style and participation in professional development in adult education. The lack of differences and relationships in some of the factors and variables may be attributed to the sample size used in the study.

Chapter One: Introduction

Teaching and learning have been a center of interest in educational research, and more so on their interaction to improve student learning outcomes (Brakefield, 2011). Many factors affect the success of a learner in any teaching and learning transactions: physical facilities, time of the day, instructor empathy, quality of materials and resources, physical disposition of the adult learner, and other variables (Knowles, Holton & Swanson, 2005). Among these factors is the teaching style of the instructor (Brookfield, 1985). Teaching style has a significant influence on learner development and learner outcomes (Knowles, 1980). It determines the extent of learning because "teachers provide the vital human connection between the learner, the content, and the environment" (Heimlich & Norland, 1994, p. 109). Studies have shown that teaching styles (personal characteristics of the teachers) are linked to students' learning and achievement (Brakefield, 2011; McGowan, 2007). The teacher is the most important variable in the classroom for student achievement (Muijs & Reynolds, 2011; Stronge, 2007). Therefore, in order to determine the impact of teaching styles on students' learning outcomes, teachers must identify their own teaching styles and then examine their practices and relate to those teaching styles (Cranton, & Carusetta, 2004).

In the past, students' achievement has been a focus in K-12 learning environments; it is only in the past 20 years that it has drawn attention in adult education and led to the pursuit of methods to improve outcomes and success of adult students. Adult education is defined as adult "activities intentionally designed to bring about learning among students whose age, social roles, defines them as adults" (Merriam & Brockett, 1997, p. 8). These activities could be professional development, literacy education, human resource training, community volunteerism, or workplace learning (Spencer & Lange, 2014). Adult students include those in higher education,

workforce preparation classes, job training, and those participating in the instruction of adult basic skills or self-enrichment programs (Kim & Creighton, 2000). Many adult learners come to the adult education field already established in a profession, such as policing, healthcare nursing, or community development (Spencer & Lange, 2014). There are many facets to adult learning, and this study will focus specifically on teachers of adults providing instruction on the area that includes General Education Development (GED), English as a Second Language (ESL), and basic education skills.

Research with this population shows that teaching style impacts adult student performance and student academic engagement (Brakefield, 2011; Conti, 1984; Conti & Wellborn, 1986; Foushee, 2015; McGowan, 2007; Shaari, Yusoff, Ghazali, Osman, & Dzahir, 2014; Wiley, 1986). A study in south Texas on education programs which offered classes in basic level literacy, high school equivalency, and English as a Second Language was the first to use the Principles of Adult Learning Scale (PALS) to assess the relationship between teaching styles and students' achievement (Conti, 1984). In this study, teaching styles of 29 part-time teachers in the program were measured and related to the achievement levels of their 837 students. The results showed that teaching style significantly influenced the amount of the student's academic gain and that depending on the nature of the course, both student-and teacher-centered approaches were effective. McGowan (2007) examined the teaching styles of core and occupational faculty in a technical college and their relationship to students' achievement. The results showed a positive correlation between teaching styles and students' achievements.

Definition of Teaching Styles

Teaching styles are different approaches used by teachers for instruction, and several methods exist for use in classifying teaching styles. Some authors have described teaching styles differently. Grasha (1996, 2002) described it as enduring preferences displayed by a teacher in the attitudes and behaviors, they display conducting their classes. Conti (1997; 1983: 1985;1989; & 2004) described teaching style as distinctive characteristics displayed by a teacher that does not change regardless of the subject matter being taught.

Several approaches have been used to describe teaching styles, and while Pratt (2002) proposed five types of teaching approaches that consider both the learner and the subject content, Conti (1998) proposed two categories: teacher-centered and learner-centered styles. In developing teaching styles for adult education, Heimlich and Norland (1994) described four styles, namely: the expert, the facilitator, the provider, and the enabler. Fischer and Fischer (1979) identified six categories: task-oriented, cooperative planner, child-centered, emotionally exciting, and its counterparts subject-centered approach and learning-centered approach.

Teaching Styles and Adult Education

There has been an increase in the number of studies aimed at identifying the best teaching approaches for adult students in the field of adult education (Conti, 2004) and the need for developing effective teaching style strategies in higher education in general (Clavon, 2014). Based on these studies, adult learning theories like self-directed learning, andragogy, and transformative learning have emerged. These theories have been proposed by major and dominant adult education theorists and have been used to shape, provide a basis, and inform the practice of learning in adult education programs. Through their work, these theorists have advocated for the use of student-centered approaches (collaborative approach) as the preferred

method to teach adults (Freire, 2000; Houle, 1961; Knowles, 1973; Lindeman, 1926; Mezirow, 1991; Rogers, 1961). In a student-centered approach, educators provide learning activities focused on the learners' participation and experiences, and they encourage students to take responsibility for their learning. Unlike a student-centered approach, in a teacher-centered approach, the educator determines activities for students, the objectives of the learning process, and evaluates the extent of the learner's acquired learning (Conti, 2004). The student-centered approach creates a learning environment that is effective, and which promotes a high level of motivation, learning, and achievement for all learners (McCombs & Whistler, 1997). Furthermore, the student-centered approach aligns with the principles of adult learning theories. It has been shown that teaching styles that do not meet the needs of adult learners and are not aligned with recommended approaches for this population are more likely to lead to low motivation, poor achievement scores, and increased dropout rates (Knowles, 1990; Akbari & Allvar, 2010).

To assess teaching styles, Conti (1979) developed the Principles of Adult Learning Scale (PALS), a tool used to evaluate the effectiveness of the learning principles which are characteristic of and supportive of the collaborative (student-centered) approach. PALS was initiated when limited scholarly research existed on the relationship between the cognitive characteristics of the teachers' teaching behaviors and the academic success of their students. Since then, PALS has been revised several times (Conti, 1983, 1985, 2004) to capture emerging challenges in adult education evaluation. PALS, a 44-item Likert scale instrument asks the respondents to report the use of specific instructional behaviors during their teaching, and the instrument has items relating to student-centered activities. The items in the instrument are further categorized into seven factors:

Learner-Centered Activities. Factor one indicates the use of instructional activities that support the use of formal testing and standardized tests as a means of analyzing learners' established standards and comparing them to outside standards.

Personalizing Instruction. Factor two indicates the use of activities that are centered on the individual students' needs for learning and paced to accommodate students' abilities and learning styles. A variety of methods, materials, and assignments is used, and cooperation is encouraged.

Relating to Experience. Factor three measures the use of instructional activities that base new learning on the prior experiences of students. These activities also may center on solving problems that adult students face in everyday, real-life situations.

Assessing Student Needs. Factor four measures the use of counseling and other activities to determine the needs and the education and life goals of students.

Climate Building. Factor five indicates whether instructors attempt to make the classroom physically and psychologically comfortable for the learners. It assesses the self- control of the students and how the instructor encourages interaction and collaboration with other students. Further, it indicates whether instructors try to be supportive and considerate of competencies students already possess. Climate Building (factor five) also takes into consideration how instructors create a learning environment where errors are accepted, and students are encouraged to take risks as part of the learning process.

Participation in the Learning Process. Factor six measures the control the students have in contributing and determining the content of instruction. Furthermore, it looks at the extent to which instructors allow and encourage students to direct their learning experiences and to self-assess their academic progress.

Flexibility for Personal Development. Factor seven evaluates whether or not instructors encourage students to form their own opinions and values and whether instructors act as facilitators of learning rather than providers of information. It also shows who the focus of learning is — the instructor or the student.

These seven factors from the PALS instrument will also be used to assess specific teaching style preferences of the teachers besides the total scores on the PALS which can assess teaching style as either be student-centered or teacher-centered.

Overview of the Literature

In examining teaching style approaches in adult education, scholars have discovered that a majority of educators prefer the traditional teacher-centered approach (Barrett, Bower, & Donovan, 2007; Clavon, 2014; Curran, 2013; Curran, 2014; DelCheccolo, 2017; Dupin-Bryant, 2000; Dupin-Bryant, 2004; Edwards, 2013; Floyd, 2010; Foushee, 2015; Fries, 2012; Hasan, 2016; Hettihewa & Karunathilake, 2015; Liu, Qiao, & Liu, 2006; Nessipbayevaa & Eggerb, 2015; Oslund, 2015; Prescott, 2014; Schaefer & Zygmont, 2003). The results from these studies indicated that instructors employed teacher-centered approaches in real practice as opposed to the student-centered approaches recommended for adult learners. Although a teacher-centered approach is widely practiced in adult education, published literature strongly supports the student-centered approach (Ahmed, 2016; Conti, 2004; Kovačević & Akbarov, 2016; Weimer, 2013).

Heimlich and Norland (2002) view teaching style from a broader perspective that involves the interaction of the teacher, the community, the content, and the learner. The interaction of these elements in the teaching and learning transaction varies, and more importantly, they vary with educators' beliefs, values, and how the educator places meaning to

each of these components. Therefore, the study of teaching styles focuses on the beliefs, behaviors, and values of educators as they relate to the way elements of teaching and learning exchange work (Heimlich & Norland, 2002). Given that the orientation of an adult learner is complex and multifaceted, the variance in beliefs and values and different settings upon which the teaching interaction occurs may not guarantee that each educational encounter will result in satisfying and exclusively meaningful teaching and learning transactions. Adult learning, therefore, becomes a challenging and creative activity requiring the facilitator and the learners to constantly re-examine their educational values, processes, and purposes (Galbraith, 1991).

Teachers' Personal Characteristics and Teaching Styles

Personal characteristics such as age, gender, ethnicity, and other factors can influence a teacher's personal teaching styles (Fries, 2012; O'Brien, 2001; Roberson, 2004; Stes, Gijbels, & Van, 2008). It has also been reported that one's educational philosophy is a critical factor affecting teaching styles (Conti, 1985; Rogers, 2009; Zinn, 2004). While research findings identified age as a factor influencing teaching styles and increases support for the collaborative teaching style (Conti,1985; DeCoux, 1992), others (Ahmed, 2013; Hettihewa & Karunathilake, 2015; Liu, Qiao, & Liu, 2006) found age to have little influence in teaching style. When teachers have a sense of who they are and are consistent in what they believe and teach their students, they are more likely to enhance their instructional behavior (Heimlich & Norland, 1994). Knowing one's style of teaching and coordinating it with one's past learning styles has been shown to motivate students' learning (Gilakjani, 2012). When an instructor understands their beliefs on instruction, they are more likely to adopt different teaching approaches that satisfy divergent learning strategies that are in line with their beliefs. Knowing one's style of teaching, understanding one's belief and their compatibility with their teaching behaviors is an important

goal of individual educators to improve learning by students and the program participants' philosophy (Heimlich & Norland, 2002). Therefore, the identification of one's teaching styles is important in ensuring success in teaching adult learners and for teaching to be effective and impactful. This not only identifies educators' behaviors in the classroom but also helps educators structure their teaching to accommodate the different student learning styles they are likely to encounter. It is, therefore, important for teachers to identify their own teaching styles to meet the diverse needs required of them by different learners (Heimlich & Norland, 1994).

The use of multiple methods and approaches for instructional purposes should aim to satisfy diverse learners who have different preferences for learning. Adopting different methods to one's style will not conflict with one's approach, nor compromise one's belief about teaching and learning, but rather it will allow the learners to adapt the different methods to their own learning preferences (Heimlich & Norland, 1994). It is advisable that teachers continuously seek to improve their instructional styles through identifying their own beliefs and values vis-à-vis teaching and learning and more so in understanding the match between their philosophy and behaviors in the teaching/learning exchange process. Because the motivation behind teaching is to enhance learning, everything an educator does to improve the learning process and to impart knowledge is of value. It is rewarding for an educator to reflect on and to understand their beliefs and values and how they identify with their educational philosophy (Heimlich & Norland, 2002). Doing so will also allow the educator to use the best teaching approach and provide the best experience to their students. Therefore, understanding one's teaching style can serve as a foundation for the improvement of class instruction to benefit both the learners and the educator (Heimlich & Norland, 2002). To improve services to adult learners, it is critical to understand the

effectiveness of different teaching styles in various settings and for varying programs offered to adult students (Heimlich & Norland, 2002).

In addition to the factors influencing teaching styles, some researchers have examined the relationship between years of teaching experience and the application of adult learning principles. Some have found teaching style to be related to years of teaching experience (Conti, 1984; Dupin-Bryant, 2000; McCoy, 2000), while Ahmed (2013) found contradicting results.

Gender was found to have a significant influence on teaching styles (Hettihewa & Karunathilake, 2015; Rogers, 2009). In a study conducted in magazine-writing classes, Endres and Schierhorn (1992), despite finding similar teaching manners between men and women, found that women tend to prefer a participatory classroom style where the instructor is more involved in all steps. Women were also more likely than men to involve students in the coaching process, offer continuous assessment, and grade individual steps along the way.

Engaging in professional training influences teaching style and can support either teacher-centered or student-centered teaching approaches. A correlation was reported between teaching style and professional development training in adult learning theory (Curran, 2014). Also, while Conti (1984) and McCollin (2000) reported instructors' education level to predict teaching styles, contrasting results were reported by Roger (2009). The type of course taught was also found to predict the teaching style of an instructor (McCollin, 2000) and influences the teaching style adopted (Conti 1984; Spoon & Schell, 1998). Among adult educators, GED teachers tend to be teacher-centered, while those of English as a Second Language are more likely to use a student-centered approach (Conti, 1984). Most studies that have reported using PALS have used the questionnaire that identifies individuals as either teacher-centered or

student-centered without analysis of the seven factors. This study adds the component of the seven factors in the analysis and compares the results to the norm-referenced mean scores.

Problem Statement

Knowles (1970) pointed out that many instructors are executing the precisely defined role of adult educators, but they are oblivious of a growing body of knowledge and techniques that can help them perform their role as adult educators even better. Moreover, many adult education teachers have not had formal training that brings them into contact with adult education literature (Yoshida, Conti, Yamauchi, & Iwasaki, 2014). There seems to be a lack of awareness on the best teaching styles that meet the needs of adult students.

Teachers have difficult and complicated jobs. Compared to adult educators in other institutions of learning, adult education instructors have a unique characteristic that makes their jobs a little more difficult. First, in contrast to other teachers, adult education instructors do not require work experience or meet any standard requirements in educational preparation (Kutner, 1992). In Virginia, a majority (56%) of the instructors do not have teaching certification (Virginia Department of Education Office of Career, Technical, and Adult Education (VDOE), 2018). Second, they are often employed part-time (Kutner, 1992; Young, Fleischman, Fitzgerald, & Morgan, 1995). According to a report in the *Progress Newsletter*, 95% of the instructors in Virginia in 2016-2017 were part-time (VDOE Office of Career, Technical, and Adult Education, 2018). Furthermore, adult educators do not have requirements to participate in frequent staff development or in continuing education once they have been hired (Kutner, 1992). Being employed part-time and lack of frequent requirement for staff development results in a lot of challenges. This limits the teachers in terms of professional development opportunities that can be used to incorporate what they have learned into instruction and to share and collaborate with

colleagues. Most of the competencies required of them by the Department of Education are based on "skills needed to teach effectively on content knowledge across subject areas, and skills related to teaching in their particular field, such as English as a Second Language, mathematics, career or technical training, etc., in order to be effective"(Literacy Information and Communication System (LINCS), n.d., p. 2).

Like many other adult education programs in the nation, adult education programs in Virginia are funded by both the state and the federal government. Each program has a set standard of skills that have to be met statewide and nationally, and these standards are measured in terms of Measurable Skill Gain (MSG) attainment. The state sets a negotiated performance target with the federal Department of Education. In 2016-2017, the performance data on the National Reporting System (NRS) show that adult basic education and adult secondary education did not meet the performance target required by the state (VDOE Office of Career, Technical, and Adult Education, 2018). Educational gain is the most appropriate measure relating to adult education teaching-learning; factors that affect educational gain in the adult classroom are highly meaningful as to the ability of the program to meet its goals and maintain funding from year to year. Little information exists on what teaching styles are employed within adult education program classes and how these teaching styles relate to program performance and student outcomes.

The format for adult education classes varies greatly. They are different from the classes designed for children and from formal credit courses in a university. Most of the adult education programs offer classes for non-native speaking students, advanced high school equivalency skills, and basic literacy skills. These classes are diverse in their population — there are learners in different age groups with varying educational backgrounds, races, levels of language

efficiency, or experience and prevalence of learning disabilities (National Research Council (NRC), 2012).

They are also situated in different locations in terms of contexts; some are located in schools, community centers, workplaces, or correctional institutions (Belzer, 2007; Tamassia, Lennon, Yamamoto, & Kirsch, 2007). The diversity of the student population, the different contexts of the programs, and the lack of a standardized curriculum and materials make the role of the teachers different and make it difficult to deliver consistent quality instruction in adult education programs. In such complexity, it is important to understand the influence of an instructor's teaching style on student learning. Adult education instructors are examined in this study because little has been written about this group despite the many challenges of teaching within this area and the impact of students improved basic skills in their lives.

Also, different factors influence teaching styles, and these factors are too multifaceted and complex to isolate (Liu, Qiao, & Liu, 2006). There exists little and conflicting information about how demographic factors affect teaching styles. Most studies on teaching styles have provided only descriptive analyses (Dupin-Bryant, 2004; Dupin-Bryant, 2000; Spoon & Schell, 1998). Liu, Qiao, and Liu (2006) noted that although several studies on teaching styles have examined specific demographic and personal variables such as age, teaching subject, gender, and students, there is a paucity of information on the correlation between these variables and teaching styles. Furthermore, the few studies (Ahmed, 2013; Endres & Schierhorn, 1992; Hettihewa & Karunathilake, 2015; Liu, Qiao & Liu, 2006; McCollin 2000; Seevers & Clarks, 1993) that examined the relationship between demographic characteristics of the instructors and the teaching styles have shown conflicting results. With the multifaceted and conflicting factors

influencing teaching styles, there is a need for more research to isolate these factors and to fully understand the impact and effectiveness of teaching style on adult education students' success.

In reference to educational settings, research has been conducted in several educational contexts with regard to teaching styles such as in colleges and universities (Barrett, Bower, & Donovan, 2007; Dupin-Bryant, 2000; Dupin-Bryant, 2004; Kim, & Davies, 2014; Kovačević & Akbarov, 2016; Liu, Qiao, & Liu, 2006; Oslund, 2015) in correctional facilities (Gelana & Hindeya, 2014), in police training (McCoy, 2006; Ozturk, 2011), and healthcare training of nurses (Schaefer & Zygmont, 2003; Curran, 2013). While there exist a few studies on the teaching styles of adult basic educators (Conti, 1984; Foushee, 2015; Roberson, 2004; Spoon & Schell, 1998), these studies are restricted to a handful of contextual scenes. From a broader perspective, Heimlich and Norland (1994) stated that "A limited amount of research has been done to identify teaching styles, the teacher's preferred pattern of providing learning opportunities for students" (p. 41). Based on the literature, the researcher was unable to determine the existing styles and practices of adult education instructors in Virginia in terms of their theoretical philosophical approaches to instruction. Therefore, there was a significant opportunity available to survey and explore the practiced teaching behaviors of Virginia adult education programs.

Purpose of the Study

The purpose of this study was to examine the teaching style preferences of adult education instructors and the influence of gender, age, professional development, experience in teaching adults, teaching subject, and levels of education on teaching style preferences.

Research Questions

1. What are the teaching style preferences of adult education instructors as determined by the mean scores on the Principles of Adult Learning Scale (PALS)?
2. What are the teaching styles of adult education instructors as measured by the seven PALS factors?
3. What is the relationship between teaching styles, the seven PALS factors, and the demographic factors which include years of teaching experience, age, gender, educational level achieved, the type of course, and professional development in adult education?

Theoretical Framework

Andragogical theory provides a theoretical framework for this study. The theory was first proposed in the United States by Malcolm Knowles in 1968 as "a new label and a new technology"(Knowles, 1986, p. 351) "of adult learning to distinguish it from pre-adult schooling" (Merriam, Caffarella, & Baumgartner, 2007, p. 84). Since then, it has become a major theory in the field of adult education, even though there exist some critiques about it. When Knowles first introduced the theory, he aimed to isolate the idea that there is a difference in the way adults learn compared to children, because most of the literature informing the practice of adult learning then was drawn from the general theory of learning which was most appropriate for teaching children. In his first article "Andragogy, not Pedagogy" (1968), he illustrated the difference in how adults learn as opposed to how children learn. Through his work, Knowles originally proposed four assumptions and later added two more to come up with six assumptions underlying the theory of andragogy. These principles center around the student as the focus of learning, unlike pedagogy where the teacher is the focus of learning. The theory of andragogy

aligns with the student-centered approaches of teaching advocated by the major adult learning theorists; therefore, it fits within the purpose of my study.

The Principles of Adult Learning Scale (PALS) has been considered the best instrument psychometrically that measures the principles of andragogy (Knowles, Holton, & Swanson, 2012; Merriam & Bierema, 2014). While it does not measure the principles of andragogy directly, it measures teaching methodologies closely associated with the principles of the theory (Knowles, Holton, & Swanson, 2012; Merriam & Bierema, 2014). Another reason for choosing andragogy as the theoretical framework is because the six principles, or the assumption of andragogy, emphasizes the unique needs of adult learners and the importance of considering these needs when designing adult learning instruction. The concepts of andragogical principles and assumptions have been echoed in the writings of other scholars as a front-line basis for consideration (Brookfield, 1987; Caffarella, 1993; Merriam, 2001). When these principles are incorporated or are present in the learning environment, there is a tendency for the teachers to use a student-centered approach to their teaching.

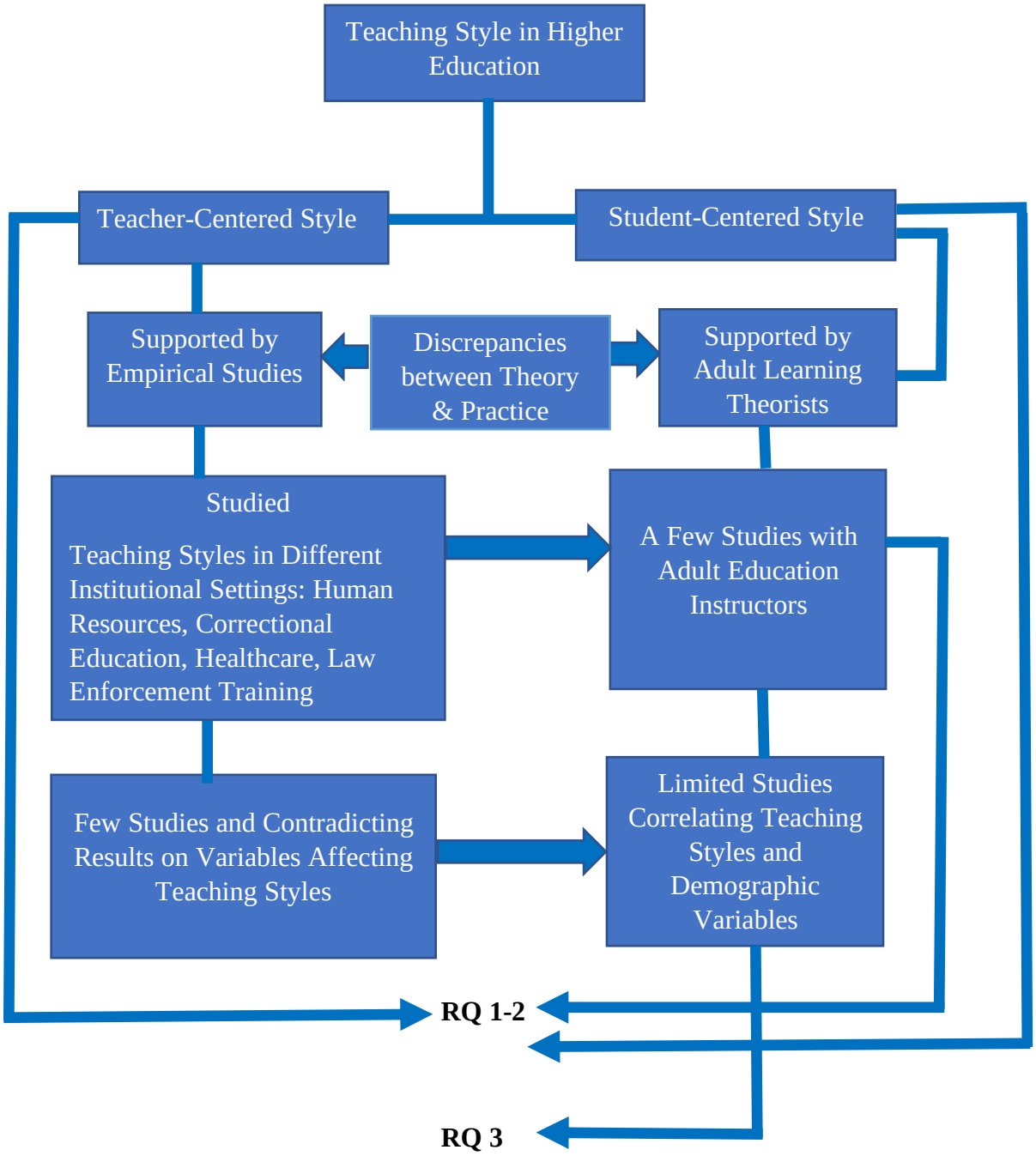


Figure 1. Conceptual Framework

Significance of the Study

This study will add to the growing but limited body of research on teaching styles in adult education. Despite an increasing number of studies on teaching styles in higher education (Ahmed, 2013; Barrett, Bower, & Donovan, 2007; Curran, 2013; Curran, 2014; Hettihewa, & Karunathilake, 2015; Liu, Qiao, & Liu, 2006; Oslund, 2015), few of these studies have focused on adult basic educators (Foushee, 2015; Spoon & Schell, 1998; Roberson, 2002). Given this limited knowledge, this study will contribute to the body of scholarly knowledge by examining teaching styles in a different context and with a different audience. The results can provide useful information that can be used by the programs regarding the preferred teaching style or styles that are associated with an increase in student progression and the overall performance of adult education programs. Conclusions drawn could then be used to guide the use of resources and to increase the use of identified teaching style(s) associated with the increase in student progression. The results will also contribute to isolating factors that may influence teaching styles and to identify whether different classes/programs offered in Virginia adult education programs are best addressed by a given teaching style.

The results from the study will provide informative data to Virginia state officials which could be used to improve the existing teaching styles or be used as a guide in developing and promoting professional development training and supportive programs that facilitate instructional change for the teachers of adults. The results could be used to inform policy guiding the teaching and learning of adult students. Lastly, the results may contribute to the improvement of practice in teaching adults by creating more awareness of the discrepancies that exist in theory and practice: “The reason why adult education has not achieved the impact on our civilization of

which it is capable is that most teachers of adults have only known how to teach adults as if they were children" (Knowles, 1970. p. 37).

Methodology Overview

This is a nonexperimental cross-sectional survey design study, and a cross-sectional survey was used to collect data. A two-part survey was sent to adult education instructors. The first part of the survey was designed by the researcher and asked respondents for demographic data including gender, age, teaching experiences, type of subject, number of hours they participated in professional development, and levels of education. The second part of the survey was the unmodified Principles of Adult Learning Scale (PALS) instrument (Conti, 1983, 1998). The PALS instrument was designed for adult basic education instructors to assess their use of adult learning principles or the teaching style used within their classrooms. It measures the overall use of these principles, as well as seven related factors: Learner-centered Activities, Personalizing Instruction, Relating to Experience, Assessing Student Needs, Climate Building, Participation in the Learning Process, and Flexibility for Personal Development. When the PALS is scored, an overall score can be determined as well as a score on the seven factors.

Non-Probability sampling was used. Non-probability sampling is a technique used to draw research participants from the larger population; this is a sampling method in which not everyone in the population gets an equal chance of being included in the sample (Johnson & Christensen, 2014). An email was sent to the program managers requesting their teachers to participate in the study. The 44-item PALS survey was distributed to adult educators who voluntarily responded to the questionnaire. Data were analyzed using SPSS package 25.0 to generate descriptive statistics, and independent samples *t*-tests were used to investigate the relationship between demographic variables and teaching style preferences with two groups. A

one-way ANOVA test was used to investigate the relationship between demographic variables and teaching style preference with more than two groups.

Definition of Terms

The following are the definitions of terms used through the study.

Teaching Styles. Conti (2004) described teaching style as the qualities and behaviors displayed by a teacher which are consistent from situation to situation, regardless of curriculum content.

Collaborative mode/Student-centered/Learner-centered. Learner-centered style is defined as a pattern of instruction that is responsive, problem-centered, democratic, and employs a collaborative learning environment (Dupin-Bryant, 2004).

Traditional methods/teacher-centered. Teacher-centered style is defined as a formal, controlled, and autocratic instructional style which assumes that the learners are passive (Conti, 2004).

Andragogy. This is the art and science of teaching adult learners (Knowles, Holton, Swanson, 1998).

Pedagogy. Pedagogy is defined as the art and science of teaching children (Ozuah, 2005).

PALS. Principles of Adult Learning Scale is a 44-item instrument used for measuring teaching styles of adult education instructors (Conti, 1982).

Workforce Innovation and Opportunity Act (WIOA). The legislation that funds and provides for the implementation of the National Adult Education and Literacy program in the U.S. Includes Title II, the Adult Education and Family Literacy Act (US Department of Education, 2014).

National Reporting System (NRS). This system was created in 1990 and was reauthorized

several times to serve as the accountability system for adult education programs and to report on student outcomes. The NRS correlates with the Test of Adult Basic Education which is used as the pre- and post-test measure evaluating all enrolled ABE/ASE students. The scale consists of six numerical levels from 1 to 6 (Implementation Guidelines, 2013).

Summary

The teaching style of the teacher is one among other factors that play a significant role in the learning process of a student; it determines learning outcomes, achievement, and student success. While numerous studies have been carried out on teaching style, a large proportion has focused mostly on K-12 education. In these studies, most researchers have reported teaching style to be one of the most influential factors and that has a significant impact on outcomes of a learning process. These positive findings on the impact of teaching style on learning outcomes and student academic performance in K-12 have stimulated an interest in teaching styles among adult education practitioners. The interest for better outcomes in adult education programs has led to a growing number of studies and the proliferation of adult education theories on how to instruct adult students.

Given the significance of teaching styles in influencing teaching outcomes and its relationship to student learning success, some authors have stressed the importance of identifying and adopting a style that optimizes learning benefits, and that gives the best teaching outcomes. Some education theorists consider the teacher's role to be that of transmitting knowledge to the passive student through a teacher-centered approach. Others consider the role of the teacher as that of leading the student to construct knowledge through participation and the utilization of their past experiences, also referred to as a student-centered approach. Several studies have been conducted to identify the teaching styles of adult education instructors, and there have been

conflicting results in terms of theory and practice. Therefore, it is prudent that more studies be done to further identify teaching styles and hopefully to help clarify the discrepancies that exist in theory and practice. A teaching style is defined in different ways, is multifaceted and complex, and can be influenced by multiple factors such as age, gender, professional development, level of education, and years of teaching. However, despite its complexity, few studies have examined the relationship of teaching styles and these demographic features although the findings have been conflicting and inconsistent. Examining the relationship between teaching styles and demographic factors is one significant contribution of this study.

Adult education is a broad field implemented in diverse settings under different programs designed to address diverse student needs including short- and long-term future aspirations of the students. The adult education instructors in Virginia became a group of interest and the focus of this study because little has been written about this population. Previous studies on teaching styles have been done with instructors from different educational settings and training programs, but a small number have involved adult education instructors. Compared to instructors in other institutions of learning, adult education instructors face unique challenges whose solutions may call for approaches that are non-conventional and different from those for instructors in other settings. However, even with these challenges, adult education instructors are mandated by the state to make an impact on their students' learning outcomes. Two contradicting aspects have emerged and have been reported in the literature as to the type of teaching styles appropriate for adult students. The majority of adult learning theorists propose a student-centered style, and it has also been documented as a successful approach for student achievement (Stes, Gijbels, & Petegem, 2008), while empirical research reports a teacher-centered style as the approach in use. Therefore, it is necessary that more studies are done to further identify teaching styles in adult

education settings, and hopefully, to help clarify the discrepancies that exist in theory and practice by availing research findings in support of either of the proposed styles identified above.

This study seeks to ultimately provide findings that fill the missing gaps in teaching styles research and contribute to the body of literature on adult education. Three research questions are used to address the purpose of this study: what are the teaching style preferences of adult education instructors as determined by the mean scores on the Principles of Adult Learning Scale (PALS)?, What are the teaching styles of adult education instructors as measured by the seven PALS factors? and what is the relationship between teaching style, seven PALS factors, and the demographic factors which include years of teaching experience, age, gender, educational level achieved, the type of course, and professional development in adult education? The Principles of Adult Learning Scale was identified as a suitable instrument to be used to identify the teaching styles. Andragogy is also introduced as a theory guiding the study because of the alignment of the concept of the theory and the purpose of the study. The methodology chosen leads to a process of data collection and analysis whose results were used to answer the research questions.

Chapter Two: Literature Review

Introduction

This chapter provides a synthesis of the literature that is relevant to the purpose of the study. It begins with an explanation of how the literature used in the study was discovered, followed by the analysis and synthesis of some of the major adult learning theorists' work in the teaching and learning of adults. The teaching style models that are widely recognized and used are identified, discussed, and analyzed in depth. The variables predicted to influence teaching styles, and which are important constituents of this study, are identified. In addition, variables commonly considered significant in teaching styles and which have been discussed in the literature are documented and discussed. Empirical research studies on teaching styles and particularly those using PALS are identified, discussed, and analyzed in detail. Additionally, a rationale for choosing andragogy as the theoretical framework and for using PALS as an instrument in the study is explained followed by a summary of the chapter.

Literature Review Methods

A review of the literature on teaching styles was conducted to uncover the literature used in this section. A general library search was used with the search terms "Teaching styles," "PALS," and "adult education." Restrictions were placed on publication dates to the past 20 years. This search yielded titles of studies in books, articles, journals, and dissertations. The researcher searched for the titles that were relevant to the topic, eliminating studies that were not empirical, those that were not done with adult students, and articles that could not be retrieved in full. The researcher pulled all the relevant articles, journals, and dissertations. Dissertations were accessed through the ProQuest dissertation database. The reference lists from dissertations were examined, providing an abundance of literature. The same was done with the articles and

journals by searching the secondary sources from the reference list. In addition to the general library search, Google Scholar was also used with the same search terms, and more literature was found. Duplicated titles from the library search were excluded. The researcher came up with a list of references, read all the articles, journals, and book chapters in detail while making notes for each. References from university course work were also used to inform the literature.

The results from the search were used in organizing the topics in this chapter. This review, however, was not intended to uncover every piece of literature that has been conducted on the topic. Instead, it will highlight the work of a few major, well-known theorists in adult education and authors who have written on the topic. The inclusion of the adult learning theorists' work is to provide a foundation of what they intended the goal of adult education to be and their views on how they wanted it to continue forward. Several definitions of teaching styles are identified in the literature. Most of these definitions are based on methods and models that are used to identify various behaviors of the teacher, hence the reason for discussing the various models of teaching styles identified in the literature.

Adult Learning Methods

Adult education has been around even during the reign of the great teachers of the earliest times: Confucius and Lao Tse of China; Jesus in Biblical times; the Hebrew prophets; Socrates Aristotle, and Cicero, Evelid, and Quantillian in ancient Rome and Plato I in ancient Greece- All were teachers of adults, not children (Ozuah, 2016).

The works of many adult learning theorists support the use of learner-centered teaching styles (Bergevin, 1967; Freire, 1970; Houle, 1961; Kidd, 1976; Knowles, 1990; Lindeman, 1926, 1956; Rogers, 1956). When the concept of adult education was first conceived, it was meant to be a continuous activity (lifelong), non-vocational, concerned with the situation and not subjects

taught and emphasized the learner's experience (Lindeman, 1926). Linderman emphasized that subjects should serve situations, rather than situations being made to fit subjects. His argument was based on the concern that focusing on the subject is too narrow and that the real-life needs of adult learners would not be met. Also, these individuals enter into learning situations from a position that is almost completely opposite to that of children. They find themselves in need of specific skills while in different stages in life. In addition to the responsibility of learning, they have other responsibilities like their work, family, and community life. Long ago Lindeman (1926) suggested that there exists a need to adjust to meet the unique requirements of adult learners.

Lindeman viewed adult education as a process of participation in which learners become aware of significant experiences (Lindeman, 1956). He cautioned adult educators to avoid the educational pitfalls "of indoctrinating students with a preconceived standard of what constitutes good" (p. 66), of assuming that subjects and teachers make up the starting point of learning, and of viewing knowledge as the composite experiences of others, which are "neatly divided into subjects which in turn are parceled out to students, not because students express eagerness or interest, but because the subjects fit into a traditional scheme" (p. 111). He concluded that textbooks and teachers are secondary concerns in adult education.

Unlike conventional education in which students adjust to the curriculum, the curriculum in adult education is developed in consideration of the interest and the needs of the students (Lindeman, 1926). Adult learners come into the learning process with a lot of experiences accumulated by virtue of having lived longer. Lindeman stated that "The resource of the highest value in adult education is the learner's experience. If education is life, then life is also education. Experience is an adult learner's best living textbook" (Lindeman, 1926, p. 9). These

are some of the characteristics of adult learners and how learning is to be done in this context. While some adult educators may have been exposed to the writings of the major theorists like Lindeman, others may not have had this exposure. Therefore, these original concepts of adult education may be missing in some adult education transactions of working with adult students.

Adult learners, unlike children, engage in learning voluntarily and may leave whenever they feel dissatisfied with the content or the process (Knowles, 1970; Merriam & Bierema, 2014). Their participation and engagement in learning are driven by several reasons, including the intention to benefit or gain something useful now and not necessarily in the future. Building on the work of Lindeman, Houle (1961) studied 20 subjects to try and understand why adult learners participate in learning and to provide information on how they learn. Through the interviews, Houle discovered that his subjects could be organized into three categories. These categories are not isolated in nature, and in a visual presentation, it would appear to be like a Venn diagram. He came up with the three categories from the individual's major conception on the reasons as to why they wish to pursue continuing education and the corresponding values of such an education for themselves. The three types are:

> The goal-oriented learners use education as a means of achieving their objectives. This group of learners starts education a little late when they feel the need to, usually in their twenties or later. The continuing education of the goal-oriented learner is in chapters, each beginning with the utilization for a need or the identification of an interest. There is no uniform continuous flow of the learning of such people, though it is an ever-recurring characteristic of their lives. Nor do they restrict their activities to anyone institution or method of learning. The need or the interest appears, and they satisfy it by taking a course, joining a group, reading a book, or going on a trip (Houle, 1961).

The activity-oriented learners take part in the learning process because they find meaning, which is not connected to the purposes or content of the activity. This group of individuals begins to participate in education with the intention of finding solutions to their problems and meeting their needs. This type of learner makes decisions to participate in learning when these problems and needs are pressing. Among the reasons for participating in adult education is that they see it as a social place which is open to meeting people and making friends. This is also a place where some people hope to find a life partner and seek refuge from personal problems or unhappy relationships. Finally, there are those individuals who participate to get course credits that eventually lead to getting a certificate or a diploma. In sum, "All of the activity-oriented people interviewed in Houle's study were course-takers and group-joiners. They might stay within a single institution or they might go from one to another, but it was social contact that they sought, and their selection of any activity was essentially based on the amount and kind of human relationships it would yield" (p. 24-25).

The learning-oriented learners pursue knowledge for its own sake. Unlike the other types, most learning-oriented adults began learning when they were young, and it became a habit (Houle, 1960, p. 24). They seek to engage in learning simply for the sake of it with no intention of using it for any purpose, just as they may just enjoy reading for pleasure.

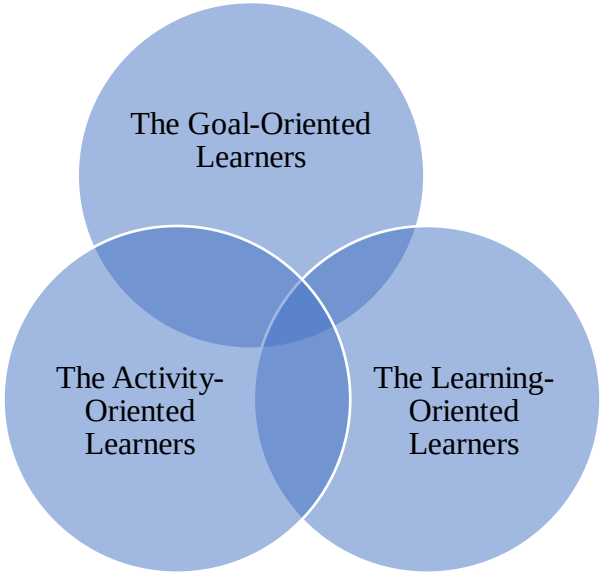


Figure 2. The Three Categories of Adult Learners

Carl Rogers (1983), the father of client-centered counseling, extended his approach to the general theory of education by equating client-centered therapy to student-centered approaches. In his book, *Freedom to Learn* (Rogers, 1969), he described the need to shift power away from the teachers, who assume the role of an expert, to the student learner. His idea was to change the traditional education environment where the students are passive recipients of knowledge, and his intention was for teachers to understand their role as facilitators and not experts. Rogers placed the student as the point of learning, and the role of the teacher is to provide the environment where the student can develop, be mature, and function fully as a responsible member of the society through engaging in learning. He emphasized personal relationships between the student and the teacher and recognized them as essential for facilitation. With the increasing populations of adult learners and the diverse nature of students (Merriam & Bierema, 2014), Rogers's views about learning are relevant to adult learning settings.

The work of Freire (1970) on education echoes that of Lindeman and continues to propose ideas and ways in which learners can be taught and the best way they can learn. His

work focuses on liberation through education and identifies two contradicting types of education: the banking system and the problem-solving system. In his views, the banking education system dehumanizes, while the problem-posing system is liberating. In the banking system, learning occurs through a single loop created by the teacher's view of the world. On the other hand, the problem-solving system is constituted by students' views of the world around them. According to Freire, banking education sees knowledge as the property of the teacher rather than a medium signifying the critical reflection of both the teacher and the students. It sees education as a transaction in which teachers deposit knowledge in their students. However, in the problem-posing education system, learning is done through dialogue, and both the teacher and the student are responsible for knowledge creation and become co-investigators in the learning transaction, also referred to as two-way (double loop). This type of education also draws from past experiences, or "looking at the past" as stated by Freire. It is a means of understanding more clearly about what and who students are so that they can more wisely build the future together. In relation to adult education, countries have traditionally reduced illiteracy by raising the cultural level of the people to fit into the system, providing minimal knowledge so that people can undertake complex roles required in developed countries, and providing credentials for participating in jobs for the economic process (Lloyd, 1972). This reflects the purpose of adult education especially with the population of immigrants, low-skilled individuals, and individuals preparing to get their GED credentials.

Bergevin (1967) also supported a collaborative teaching-learning mode. He argued that the traditional teaching-learning process views the learner as a vessel into which certain information is transferred. He added that "The programming of adult educational activities should be a cooperative endeavor where the learner is involved in learning as a full partner" (p.

168). Bergevin described the task of the adult educator in the process as that of a helper in identifying the needs of the learner, assessing essential resources, locating appropriate adult learning resources, setting educational goals for the learner, and evaluating the extent of goal achievement.

According to Kidd (1976), the central purpose of adult learning is to function as a means to support the learner in "being" and "becoming" (p. 125). He viewed the role of the teacher as that of enriching the total learning environment. The task of the teacher is not to be a "Repository of facts or ideas, ready to display them before others, but themselves taking little part except as transmitters" (p. 269). The teacher should assume the responsibility of creating an emotional and physical environment that is friendly, stimulating, reinforcing, welcoming, supportive, and primarily concerned with the welfare of the learner (p. 270).

Building on the work of the earlier theorists, Knowles realized that adult education instructors including himself were struggling to find instructional materials to guide them in conducting programs. He described this period as fascinating, and in retrospect, he stated that "Although there was a general agreement among adult educators that adults are different from youth as learners, there was no comprehensive theory about these differences. The literature was largely philosophical and anecdotal" (Knowles, 1984, pp. 3-4).

Adult Learning Theory of Andragogy

Before the 1970s, adult educators relied on other social philosophers and on behavioral and cognitive research learning theories to guide teaching and learning. To continue the concept of adult learning and adult education proposed by early theorists, Knowles introduced andragogy as a guiding principle. Even though the concept of adult education existed as early as 1926 when it was introduced by Lindeman, very little had been done to investigate it until recently (Merriam

& Bierema, 2014). “The adult learner, indeed, had been a neglected species,” stated Knowles (1990, p. 23). His ideas of formulating a theory of adult learning arose as a way to incorporate individuals’ experiences from what they already know and investigate the unique characteristics of adult learners.

In the mid-1960s Knowles was exposed to the term *andragogy* by a Yugoslavian adult educator. It means “the art and science of helping adults learn” (Knowles, 1990, p. 54). The word andragogy had then been used in other countries, and it was first proposed in 1968 and introduced in the U.S. in 1970 by Knowles. Knowles introduced andragogy as a model based on several assumptions. He first presented four assumptions, and two more were added later in his writings as Merriam, Caffarella, and Baumgartner (2007) noted. Assumption number one, the need to know, was added in 1990 and 1989 (Knowles, 1990, 1989), and assumption number six, motivation to learn, was added in 1984 (Knowles, 1984), leading to a total of six main assumptions or principles of andragogy that we have today (Knowles, Holton, & Swanson, 1998, 2012). These assumptions are:

Need to Know

Learners need to know why they are learning to acquire new knowledge and how it will be relevant to their immediate situations before undertaking learning. In his study, Tough (1979) found that when adults decide to learn something on their own, they will devote time and a considerable amount of energy inquiring about the benefits they will gain from learning it and the negative consequences of not learning it. Tough argued that, in adult learning, the teacher’s first task is to help the learner become aware of the need to know (Knowles, 1990).

The Learner's Self-concept

Adults are independent and self-directed (Bower & Hollister, 1967; Erikson, 1950, 1959, 1964). They feel that they are responsible for their own lives and for the decisions they make. Adults have a deep psychological need to be treated by others and seen by others and as being capable of self-direction. They do not like and may avoid situations in which they feel that others are enforcing their wills on them. The role of the teacher is to foster self-direction and independence of learning for the adults. However, when self-direction and autonomy are lacking in the learning environment, adults are more likely to take on the role of dependency and become passive learners. Dependency brings conflicts within them between the expectations to be taught as children and the deeper psychological need to be self-directed (Knowles, 1990).

The Role of Learners' Experience

This assumption deals with the prior experiences of adult learners. Practitioners in adult learning believe that the richest resources available to adult learners are their prior experiences. Adults tend to come into adult education activities with higher quality and a greater volume of experiences than younger children by virtue of having lived longer than youths. Consequently, practitioners of adult education theory put greater emphasis on the use of experiential techniques that tap into the experience of the learners such as simulation exercises, group discussions, case method, and laboratory method over transmittal techniques and problem-solving activities.

Readiness to Learn

Readiness to learn for adults depends on the relevancy of the topic to their lives. They believe in learning something when they are ready to use the learned skill. For example, with developmental stages, each stage comes with a social role that adults have to engage in. The demands of each of the roles change as one ages. Each stage may require unique learning

experiences that are relevant for that stage and the social roles played by the adults at the time. When adults get to that stage, they are ready to learn something teachable to them at that time and not later or before. Adults need to learn something to take them through that time and stage. Brockett (2015) reported that adults often seek out learning opportunities when they experience some sort of change or crisis in their lives. They, therefore, seek to find solutions to their current problem. Until adult learners see a need to acquire knowledge or skills to be used or to solve their existing problems, they may not be ready to learn.

Orientation to Learning

In comparison to children and youth, whose preference for learning is centered on the subject, adults are task-centered/problem-centered in their predilection to learning. Adults are motivated to learn something when they feel it will help them find solutions to their problems or perform a task they may face in real life. Thus, adults learn new knowledge best when skills and attitudes are provided in the context of real-life situations.

Motivation

The motivation to learn is intrinsic rather than external; adults are driven by internal pressure and the desire for self-esteem and goal attainment. In his study, Tough (1979) illustrated that adults were motivated to keep learning, growing, and developing.

Pedagogy

Prior to the introduction of andragogy, "pedagogy" was used as a guiding principle in teaching and learning. Understanding pedagogy is important in knowing how andragogy came into being and how to differentiate the use of these theories in teaching adults and children; researchers have also conducted studies to compare the efficacy of the two models, even though practitioners have discovered that both can be used interchangeably, depending on the situation.

"Pedagogy" is derived from the words *paid* meaning "child" (paediatrics/pediatrics are derived from the same stem) and *agogus* meaning "leader of." Thus, it literally means the art and science of teaching children (Knowles, 1990, p. 54). Pedagogy originated from Europe, and it can be traced back to the seventeenth century where it started—this is when organized schools and institutions for teaching children and preparing young men into priesthoods were introduced. These institutions were known as cathedrals and monastic schools (Knowles, Holton, & Swanson, 1998). Even as schools were established and expanded, the pedagogical model was the educational model that existed. Given that pedagogy was the only model of education that existed, it served as the basis of most educational systems including the U.S. educational system and higher education (Knowles, Holton, & Swanson, 1998). Until recently, adults had been largely taught as if they were children (Knowles, Holton, & Swanson, 2012).

Like andragogy, the pedagogical model was established on numerous assumptions about learners. These assumptions were to influence the educational model design. The model gives the teacher full control and responsibility of all aspects and variables of the learning process, and the teachers decide on the content of learning, when this content will be learned, the mode of learning, and whether the content has been learned. It is important to understand that the pedagogical model is teacher-centered, which makes the learner passive and submissive as they simply follow a teacher's instructions (Knowles, Holton, & Swanson, 2012; Knowles, 1990; Knowles, 1984). Just like andragogy, Ozuah (2005) presented four pedagogical assumptions. The model is based on assumptions about the learner.

The first pedagogical assumption is the dependent personality of the learner. This implied that the learner not only did not know but could not know his or her own learning needs. The second assumption was that learning needed to be subject-centered. Hence,

instructional curricula were organized around subjects, such as arithmetic and geography, and the student had to grasp the content of the subjects. A third assumption emphasized extrinsic motivation as the most important driving force for learning. Therefore, learners needed to be motivated through rewards such as good grades and punishment for failure. The last foundational assumption of pedagogy was the irrelevancy of a learner's prior experiences. It was not worth considering its inclusion in learning. As teachers and textbooks were the primary sources of learning (p. 83).

Application of Andragogy into Practice

Andragogy has been used as a guiding model in the teaching and learning of adults for over 50 years. It has been researched in numerous educational programs, human resource development, and in preparing people to work in adult education. Research continues to be conducted on andragogy, and practitioners continue to find ways to apply it to their field of practice. Research shows it is applicable to numerous settings, including correctional facilities (Stephen, 2011), nursing (DelCheccolo, 2017; Curran, 2013; Ozturk, 2011), higher education (Ekoto & Gaikwad, 2015; Dupin-Bryant, 2004; Prescott, 2014), police training (McCoy, 2006), and human resource management (Holton, Wilson, & Bates, 2009; Knowles, Holton, & Swanson, 2011). While andragogy has been widely applied and studied in different settings, results from these studies have been mixed, some being inconclusive and others showing support for andragogical assumptions.

In looking at the application of andragogy, Rachal (2012) reviewed 18 experimental or quasi-experimental thesis studies and dissertations of andragogy, all of which examined the effectiveness of an andragogical versus pedagogical instructional design. These studies were analyzed based on their measure of attendance, achievements, and satisfaction, and results were

mixed with some being supportive of andragogy and others being inconclusive. Rachal (2012) stated that the mixed results were a result of various modifications of the studies, for example, the lack of differentiation between adult undergraduate and traditional-age students and the fact that they were all categorized together as adult students. Predetermined objectives for students were also observed in several studies instead of using a collaborative effort of the instructors and learners in identifying the learning objective. Some used paper-pencil tests of content attainment, which may be difficult to define, while others involved mandated participation instead of voluntary participation. Rachal recommended seven actions or criteria for designing future studies in order to bring accuracy and comparability in empirical studies of andragogy. These seven factors are: 1. the decision to participate in learning should be voluntary from internal motivation and for personal fulfillment, 2. a college setting where learners are mixed should be avoided, and participants should not be students of traditional college-age but should be clearly adults; 3. the learner and the instructor should collaboratively determine the learning objectives; 4. assessment of students' learning should be based on proficiency or competency in the content area, and this assessment should be as low-threat as possible; 5. many of the adult learning activities are not about mastery of the content or acquisition of skills, but rather the focus should be achieving satisfaction and pleasure in participating in the learning activity; 6. a suitable adult environment that is both physically and psychologically fit for adult learning should be provided research should look at technical issues to deal with methodology to avoid threats to internal validity like considering random assignment to treatment groups where possible (Rachal, 2012).

Critiques

Andragogy, like other learning theories, has received criticism. A meta-analysis study by Taylor and Kroth (2009) found andragogy to lack the fundamental characteristics of science

since it is difficult to measure. Their analysis found that most theorists criticize research on andragogy for its inconclusive results and that the lack of empirical studies to investigate andragogy raises questions as to whether it can serve as a unifying theory of adult education. Taylor and Kroth (2009) reported that because of this lack of ability to be tested and measured, andragogy does not produce positive empirical evidence and may lack the ability to demonstrate its value to adult learning.

There are four reported obstacles that hinder empirical research on andragogy: i) the question of whether andragogy is an adult learning theory, ii) the absence of a clear meaning as to what procedures encompass andragogical practice because there are different approaches to teaching methodologies, iii) the concern on how achievement of an adult learner is to be measured, and iv) the extent to which the andragogical assumptions are typical of "adult" learners only (Taylor & Kroth, 2009).

In response to these obstacles, Knowles pointed out that "Andragogy was less of a theory of adult learning than a model of assumptions about learning or a conceptual framework that serves as a basis for an emergent theory" (Knowles, 1989, p. 112; Merriam, 2001, p. 5). It was also indicated that evaluations are collaborative and are determined by the learner and teacher since tests and grades are reported anathema to the idea of andragogy (Rachal, 2002). The assumption of an adult learner may not always be true, and a lack of a clear-cut difference between children and adults may be a limitation.

Taylor and Kroth (2009) suggested a need to develop a valid and reliable instrument to be used to assess the validity of andragogy. The instrument could evaluate how andragogical assumptions are being integrated into instruction to overcome the major criticisms that have continued for a long time. In response, a survey instrument was developed by Holton, Wilson,

and Bates (2009) to assess the effects of andragogical principles and design elements on learner satisfaction and outcomes. While no studies have reported on the use of this instrument, initial testing of the instrument with a sample of graduate learners shows it to be promising for advancing research on andragogy (Holton, Wilson, & Bates, 2009). The instrument was supported psychometrically, but there is a need for more studies to establish its credibility.

Some criticisms and critiques of andragogy are philosophical, questioning the relationship between adult education and societal change and focusing more on the individual and not the society (Knowles, Holton, & Swanson, 2012). The lack of embrace for social change and critical theory exists because andragogy is rooted in humanistic and pragmatic perspectives (Knowles, 1990; Merriam & Brockett, 1997) and is concerned with individual self-actualization and individuals developing into fully functional beings as pointed out by Maslow (1970) and Rogers (1959). The pragmatic perspective values experience from students more than knowledge obtained from formal authority and instructions as pointed by Lindeman (1926) and Dewey (1938). From a sociological perspective, andragogy is criticized for ignoring the structural system of privilege, class, race, and gender that influence learning (Merriam & Bierema, 2014; Merriam, Caffarella, & Baumgartner, 2007). In fact, a study on a group of foreign-born learners found andragogical assumptions to not be inclusive. Lee (2003) noted that

> The adults from whom Knowles drew andragogical assumptions were over-represented by privileged individuals, who were primarily white, male, educated, and from middle-class backgrounds, a population that was not unlike himself. In so doing, Knowles overgeneralized the characteristics of this population and silenced those who were less privileged, whose values and experiences were often ignored in educational setting. (Lee, 2003 p. 15).

Despite the criticism and lack of empirical research to measure its assumptions, andragogy is still considered a major theory/model approach to understanding and planning instruction for adult learners. In a review of cases across multiple fields that used andragogy, Knowles, Holton, and Swanson (2012) concluded that its use is situational and can be adapted to fit individual needs.

Conclusion

Andragogy as a model has been used in different settings and programs to demonstrate its efficacy. The assumptions of andragogy are about what the teacher and student can do to make the teaching and learning transaction successful. These are the behavioral characteristics depicted by both the teacher and the student; these behaviors are reflected in the teaching styles of the teacher and the learning style of the student. Of the most important is the behavior of the teacher which influences the learning outcomes. Teachers undertake different teaching styles depending on their philosophy, beliefs, and values on teaching, and thus there exist different teaching styles that a teacher can utilize depending on their situation.

Teaching Styles Models

To examine teaching styles, researchers have established several assessment tools and instruments. Several models have emerged based on a varied range of characteristics as shown in Table 1. Two models used to identify teaching styles, and which are characterized by static and distinctive traits, are Heimlich and Norland's Teaching Beliefs Scale (1994) and Conti's Principles of Adult Learning Scale (PALS) (1985). In contrast, Mosston and Ashworth's Spectrum of Teaching Styles Model (1990), Knowles' Andragogical Model (1980), and Grasha's Integrated Model of Teaching (1996) identify teaching style as dynamic and dependent on multiple variables, including various teacher-to-learner centered models.

Table 1

Teaching Style Models

Static and Distinctive Models	Dynamic and Dependent on Multiple Variables Models
Heimlich and Norland's Teaching Beliefs Scale (1994)	Mosston and Ashworth's Spectrum of Teaching Styles Model (1990)
Conti's Principles of Adult Learning Scale (1985)	Knowle's Andragogical Model (1980)
	Grasha's Integrated Model of Teaching (1996)

Heimlich and Norland's Teaching Beliefs Scale (1994)

Heimlich and Norland (2002) defined teaching style as not a method but as a constant quality independent of prevailing settings or subject content and related to the entire learning exchange. To them, congruency is important, and it is how an instructor brings or combines their values, attitudes, beliefs, and behavior. This congruence and combination of values, attitudes, beliefs, and behavior is the central element of understanding teaching style (Brookfield, 1990). They pointed out that style is a combination of a teacher's characteristics such as personal goals, values, mastery of concepts, and overall philosophy along with the environment. An educator's teaching style should be constant and should not be adapted to fit students' learning styles (Heimlich & Norland, 1994), since doing so is both problematic and time-consuming. Instead, the teacher can still be effective by adopting a choice of classroom techniques and strategies that are consistent with their own style (Heimlich & Norland, 1994).

To explore their teaching styles, Heimlich and Norland (1994) proposed two dimensions based on beliefs about teaching: (a) sensitivity: an educator's beliefs on the importance of knowing individual learners and their needs and (b) inclusion: an educator's beliefs about the importance of involving the learners in the learning process and how much control they have

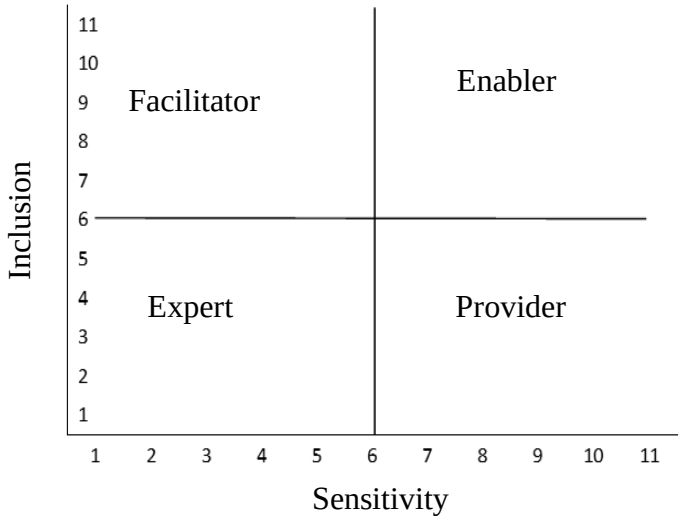
over their learning in the classroom. Because these dimensions are based on the teacher's beliefs, their ability to be sensitive to the cultural interactions in the learning environment, and their ability to renounce control, they will affect teaching effectiveness based on this model. The model gives teachers the ability to determine preferred styles based on the measurement of the intersection of the two dimensions. Heimlich and Norland's scale classifies adult educators into four categories according to the degree to which they accept beliefs about inclusion and sensitivity in the learning environment. Based on the scale, each of the two items is assigned a range of values, and teachers plot their position on the scale. The items on the instrument ask the teachers about their beliefs on inclusion and sensitivity, and the items are divided to reflect these two dimensions. Items A-K reflect a teacher's belief on inclusion, and items L-V reflect their beliefs on sensitivity. Figure 3 below illustrates the four quadrants and the items that fall in both the inclusion and sensitivity sides.

Inclusion:

A-9 B-5 C-11 D-10 E-7
F-2 G-3 H-1 I-6 J-4 K-8
Sum __÷ Circle ___=_

Sensitivity:

L-2 M-4 N-1 O-3 P-5 Q-7
R-9 S-11 T-6 U-10 V-8
Sum __÷ Circle ___=__



Note. Van Tilburg/Heimlich Teaching Beliefs Scale. By plotting their responses to items A-V on the scale and the corresponding point values assigned to each item, teachers may classify themselves as Facilitator, Enabler, Expert, or Provider. Adapted from Heimlich J. E., & Norland, E (1994). *Developing teaching style in adult education* (p. 209). San Francisco: Jossey Bass.

Figure 3. Van Tilburg/Heimlich Teaching Beliefs Scale

As illustrated in Figure 3 above, the Teaching Belief Scale is divided into four quadrants. The first quadrant, low inclusion, low sensitivity are the *experts.* The expert in a teaching-learning exchange examines what the students need, gives it to them, and exists. They are direct in their teaching and focus on delivery. The second quadrant, high inclusion, low sensitivity, is a *facilitator.* Instructors in this category are teacher-centered. They use the same method and techniques for all learners, believe in shared responsibilities, and show minimal interest in knowing their students. The third quadrant, high inclusion, high sensitivity are *enablers*.

Enablers have been referred to as "perfect adult educators" (Heimlich & Norland, 1994). They believe in collaborative learning, know their students well, and actively involve them in the learning process. The fourth quadrant, high sensitivity, low inclusion are *providers.* Providers involve their students in the teaching-learning exchange process and believe that students should not just receive information. Providers spend time getting to know their students well, and they are supportive and caring. Heimlich and Norland (1994) suggested that this group of instructors needs to strive for congruency in their philosophy and behaviors rather than focusing on expanding beyond current boundaries.

Grasha's Integrated Model of Teaching (1996)

Grasha's approach to the definition of teaching style grew out of a dissatisfaction with the limitations he believed existed in the previous models. According to Grasha, earlier models were one-sided, either for the teacher or student, largely descriptive, and did not give room for modification. Unlike the previous models, Grasha's model was developed to allow room for broadening the teacher's style and is grounded in the classroom experience. Grasha came up with five teaching styles based on the teacher qualities that were persistent across all disciplines and classroom environments. These styles are the expert, the facilitator, formal authority, the delegator, and the personal (Table 2).

Table 2

Grasha's Teaching Styles Model

Style	Characteristics
Expert	Possesses knowledge and expertise that students need. Strives to maintain status as an expert among students by displaying detailed knowledge and by challenging students to enhance their competence. Concerned with transmitting information and ensuring that students are well prepared.
Formal Authority	Possesses status among students because of knowledge and role as a faculty member. Concerned with providing positive and negative feedback, establishing learning goals, expectations, and rules of conduct for students. Concerned with the correct, acceptable and standard ways to do things and providing students with the structure they need to learn.
Personal Model	Believes in teaching by personal example and establishing a prototype for how to think and behave. Oversees, guides, and directs by showing how to do things, and encouraging students to observe and then to emulate the instructor's approach.
Facilitator	Emphasizes the personal nature of teacher-student interactions. Guides and directs students by asking questions, exploring options, suggesting alternatives, and encouraging them to develop criteria to make informed choices. The overall goal is to develop in students the capacity for independent action, initiative, and responsibility. Works with students on projects in a consultative fashion and tries to provide as much support and encouragement as possible.
Delegator	Concerned with developing students' capacity or parts of autonomous teams. The teacher is available at the request of students as a resource person.

Note. From Grasha, A. F. (1996). *Teaching with style: A practical guide to enhancing learning by understanding teaching and learning styles* (p. 154). Pittsburgh, PA: Alliance Publishers.

According to Grasha, a teacher possesses all five teaching styles to some varying degrees, and any group of them can be combined during a teaching session. Anyone individual may not exhibit pure presentations of each style but at least one more than others. The characteristics of the styles represent different approaches, namely teacher-centered, student-centered, and collaborative teaching approach. The Expert and the Formal Authority styles represent the teacher-centered style, the Personal Model represents a collaborative approach, while the Facilitator and Delegator are student-centered teaching approaches. These styles are combined

into four clusters. Among these styles are those used more often (dominant styles) and less often by instructors. While some styles are not used more often in the classroom, they play a secondary role in the overall teaching process. Each of the four clusters is a blend or combination of one dominant (primary) and one secondary style. The dominant-primary styles are those easily seen to be used across by multiple instructors while secondary styles are those that lie in the background and are more likely to contribute to distinctions of an individual approach to teaching. According to Grasha (1996), each cluster contributes to a set of climates and conditions in a learning environment. The four clusters showing the primary and secondary style components are given in Table 3.

Table 3

Grasha's Four Clusters of Teaching

Cluster	Primary Teaching Style	Secondary Teaching Style
Cluster 1	Expert/Formal Authority	Personal Model/Facilitator/Delegator
Cluster 2	Personal Model/Expert/Formal Authority	Facilitator/Delegator
Cluster 3	Facilitator/Personal Model/Expert	Formal Authority/Delegator
Cluster 4	Delegator/Facilitator/Expert	Formal Authority/Personal Model

Note. From Grasha, A. F. (1996). *Teaching with style: A practical guide to enhancing learning by understanding teaching and learning styles* (p. 155). Pittsburgh, PA: Alliance Publishers

Teachers may exhibit any of the five teaching styles in the classroom depending on instruction and the needs of the students. As much as each of the styles can be used in combination, "the expert teaching style" is always present. This is because faculty do not lose their expertise; they basically find other ways of presenting by adapting it with other teaching styles (Grasha, 2002 p. 140). In the five teaching styles, there are specific characteristics (Table 3) with corresponding behaviors, attitudes, and roles. Therefore, behavior and attitude

correspond with a specific role a teacher assumes in the classroom. Adopting a particular style comes with various behaviors, roles, and attitudes, whether or not one is aware of his or her teaching style at the moment (Grasha, 2002).

Grasha (1994) identified three factors that a teacher should consider when selecting a teaching style: 1) the capacity of the student to handle the demands and content of the course, motivation, the students' emotional maturity, and their ability to self-direct; 2) the extent of teachers' direct control of classroom activities, because the extent of control will determine the student learning objectives, define performance levels, and closely monitor student progress; and 3) the teacher needs to be ready and have the ability to build and establish relationships with students, a willingness for dialogue or double-loop learning, interest in encouraging collaboration among the students, and use of positive feedback to encourage students.

Mosston and Ashworth's (1990) Spectrum of Teaching Styles Model

This teaching style model is based on the fundamental principle that the teaching and learning transaction involves decision making both by the teacher and the learner. Therefore, the variations in teaching styles stem from decisions made by both participants. Decision patterns made by the teacher and learner define their behaviors and explain why teaching-learning is different from one situation to another; furthermore, teaching style is identified based on decisions made by both the teacher and the learner (Mosston & Ashworth, 1990). The model describes the shift of decision from the teacher to the student as they both move from style to style and how each style influences the social, moral, physical, and cognitive domains of the learner. This model identifies 11 teaching styles. In the first style, the teacher dominates the decisions, and the student responds by following all of them. In the second style, nine decisions

shift from the teacher to the learner, including the order of the tasks to be performed and when they are to be performed.

The Spectrum Model is based on six premises (Mosston & Ashworth, 1990, pp. 4-6):

1. *The axiom*. Teaching behavior is a result of a chain of decisions. Every deliberate act of teaching is a result of previously made decisions.
2. *The anatomy of any style*. The decisions that can be made in any teaching-learning transaction are categorized into three sets: the pre-impact set which is comprised of the decisions made before teaching takes place, the impact set which includes those decisions made during the actual teaching, and the post-impact set which entails those decisions concerning the evaluation of the experiences.
3. *The decision-maker*. The learner and the teacher can make decisions at any level. When one is at the maximum level of decision-making responsibility, the other will be at the minimum level.
4. *The Spectrum*. The 11 styles identified in the spectrum are based on the responsibilities of who makes which decisions, about what, and when.
5. *The cluster*. The styles in the spectrum are clustered according to the capacity for reproduction and production of knowledge, and none have supremacy over the other.
6. *The development effects*. The spectrum provides a framework for determining how each style affects the learner in the cognitive, social, affective, physical, and moral domains.

In Mosston and Ashworth's (1990) Spectrum of Teaching Styles, the 11 clusters of styles are identified based on the role of the student and the teacher in decision making. Clusters A-E are used when the learning outcome requires "reproduction" of knowledge and involves the

acquisition of basic skills, how much is recalled from past experience, and what they know. Styles F-K are used when learning objectives require the "production" of new knowledge by both the teacher and the student. These styles involve discovery, creativity, critical thinking, and problem-solving. As the learning activity progresses, responsibility shifts from simple cognitive to complex decision making beyond recalling knowledge for problem-solving. While this spectrum is not designed for adult learners, the autonomy it avails makes it suitable for the adult student.

Knowles' Andragogical Model

Knowles (1980) identified teaching styles as either pedagogical or andragogical. When he first presented the two models in *The Modern Practice of Adult Education: Pedagogy Versus Andragogy* (1970), it appears as "antithetical" that andragogy was good and was meant for teaching adults while pedagogy was bad and was meant for teaching children. Later, using feedback from the teachers on the use of pedagogy and andragogy, Knowles (1980) revised his ideas in the two models and changed the title of the next book to *The Modern Practice of Adult Education: From Pedagogy to Andragogy"* (1980). Practitioners discovered that not all adults can be self-directed in their learning as postulated by the principles of andragogy and that the andragogical model did not work in all situations. Knowles further described the differences that exist between pedagogy and andragogy and stated that the pedagogical model is an ideology based on beliefs and requires conformity and loyalty by its audiences. According to Knowles, andragogy is not an ideology, but rather an alternative set of assumptions, including some pedagogical assumptions. He concluded that because it is not a one-size-fits-all model, it is up to the educators to determine what assumptions apply to their situations.

Knowles' andragogical model emphasized that adult students are autonomous and self-directed. However, a model that assumes that adult learners are prepared to take obligation for their learning may not be suitable for all adult students. Also, not all adult students are autonomous at each stage of the learning process. Adult students have varying levels of responsibility, determined by their developmental levels and personal experience. All the assumptions of andragogy do not apply to all adults, and the content area should be considered when applying the model. This model may not be employed when the adult student is being introduced to something new but can be used later after the content has been introduced and adult students can relate and draw from their experiences (Knowles, Holton, & Swanson, 2012).

Conti's Principles of Adult Learning Scale

Conti's Principles of Adult Learning Scale (PALS) was designed to measure the degree to which adult educators report using the collaborative/student-centered approach advocated for in adult education literature. The scale is a 44-item instrument that asks teachers to identify the use of the practices identified on the items, it further helps them identify specific activities described in the seven factors: learner-centered activities, personalizing instruction, relating to experience, assessing student needs, climate building, participation in the learning process, and flexibility for personal development (Conti, 1989). The total scores indicate the overall teaching style and the strength of the teachers' support for this style. High scores in each of the factors indicate support of a student-centered approach while low scores indicate support for the teacher-centered approach. If teachers score in the middle of the mean, this indicates that a combination of teaching behaviors that are both teacher-centered and student-centered is present.

Conti (1983) first used the instrument to assess the teaching style of part-time adult educators and to relate it to student achievement levels. Although the results obtained showed a

significant influence of teaching style on students' academic gain, the gains were not in general agreement with the established adult education knowledge base. There were more gains observed with teacher-centered approaches than with student-centered approaches for a high school equivalency examination. In English as a Second Language class, the student-centered approach was more effective than the teacher-centered style. The observed differences between the two approaches in different sets of students were attributed to differences in their end goals (Conti, 1989). When students have short-term goals like in a preparatory class with a goal to pass the GED exam, they may find a teacher-centered approach appropriate. On the other hand, in English as a Second Language class, the student's goal is to attain the long-term ability to be fluent in the English language, and effective teaching may involve a collaborative approach. Therefore, Conti indicated that teachers could switch from one style to another depending on what is appropriate for the class and the content (Conti, 2004).

The teaching style models provide a general overview of the different behaviors teachers assume in their classrooms. Most of these behavioral characteristics are centered around the relationship between the student and the teacher along with the beliefs and values the teacher places on teaching and distribution of power.

Teacher-centered Approach

A teacher-centered approach is a style that promotes dependent learning. It is most dominant in North America (Conti, 2004) and is associated with behavioristic principles. Teacher-centered instructors are the sole suppliers of knowledge and information transmitted (Barrett, Bower, & Donovan, 2007; Nessipbayeva & Egger, 2015), while the student is a passive recipient of such information (Schaefer & Zygmont, 2003). It is characterized as using a traditional skill teaching method to communicate a selection of knowledge to the learner (Jarvis,

1995) and a lecture method approach to maintain control of the learning environment (Grubb, 1999). Learning is defined as a change in behavior (Conti, 2004) and is described as taking place if such a change in behavior is evident (Schaefer & Zygmont, 2003). With the teacher-centered approach, learner evaluation is based on the reproduction of learned and memorized content, with the outcomes being reinforced by the instructors' award of grades.

There are seven frequently employed teacher-centered methods: demonstration, lecture-discussion, controlled discussion, guided discussion, lecture, mentoring, and tutorial (Jarvis, 2010). The teacher-centered approach is reported to work with some children but may not work well with all adults. Consequently, many adult education theorists have found that the teacher-centered pedagogical approach does not promote understanding learners' diversity, motivators, and experiences (Bandura, 1986; Bandura, 2005; Brookfield, 1986; Galbraith, 2004; Knowles et al., 2011; Mezirow, 1969). Curriculum design that is guided by adult learning principles engages learners, promotes a student-centered approach to learning, and ultimately enhances learning transfer (Caffarella, 2010; Weimer, 2002). Research (Cross, 1981; Knowles, 1970; Merriam & Caffarella, 1999; Weimer, 2002) indicated that most students do not learn well when an instructor uses a passive teaching method, and this is the main disadvantage of the teacher-centered approach. Critical thinking, an important skill for adult education students, does not develop well in this passive learning environment (Willson, 2006). Weimer (2002) reported that often instructors assume that the students have learned something and are surprised when they discover that in fact, students have not.

Student-centered Approach

Compared to the teacher-centered approach, student-centered teaching styles have been advocated as the most preferred methods for teaching adults. The characteristics of andragogical principles are mostly associated with the student-centered approach. This approach is strongly linked with the writings of Abraham Maslow and Carl Rogers and assumes that people are naturally capable of learning and have unlimited potential for growth (Conti, 2004). Humanistic education is concerned with the growth of the 'person,' including those open to change and continuous learning, who strive for self-actualization, who can live as fully functioning individuals, and who deserve to be treated with respect and dignity (Elias & Merriam, 1984). The role of the teacher in this kind of education is that of a facilitator, to be a helper and a partner in the learning process.

The focus of a student-centered approach is on the learner's needs, perspectives, interest backgrounds, capacities, experiences, and talents. This approach creates an environment conducive for learning, motivation, and achievement for all learners (McCombs & Whisler, 1997). It gives students an opportunity to own their learning, make necessary decisions, and value judgments about the application of the content and teaching methods to their own lives and interests (Brown, 2008).

The student-centered approach concentrates on the individual learner more than the content of the subject. This concept is closely associated with Piaget's theory of constructive learning in which students interpret their work based on their knowledge, skills and developmental levels (Darling-Hammond & Bransford, 2012). Presentation of the subject material accommodates student needs and helps them develop a critical awareness of their feelings and values. In a student-centered classroom setting, the roles of the teacher and the

student change, and teachers view students as seekers of information to be guided along their academic journey (Freire, 1970; Knowles, 1970; McCombs, 2001; Weimer, 2002). The adult education curriculum should be learner-centered, where learning transactions benefit from the learner's experience and the teacher acts as a facilitator (Freire, 1970; Knowles, 1970; McCombs, 2001). In a student-centered approach, student-active instruction referred to as constructivism gives students opportunities to explore ideas and construct knowledge based on their observations and experiences (Ahmed, 2013). Numerous studies associated with the use of student-centered approaches and their effectiveness have been done. Positive results confirmed the impacts of student-centered learning approaches to teaching on attitudes towards learning academic performance and persistence in programs (Froyd & Simpson, 2003).

Cornelius-White (2007) conducted a meta-analysis study, a synthesis that included 119 studies to analyze the causal and correlational association between student-centered teaching and cognitive and affective (or behavior) student outcomes. The cognitive dependent variables included: perceived achievement, grade/retention, achievement batteries, verbal achievement, math, science, social science, and critical thinking. Affective behavioral dependent variables included: positive motivation, student participation, attendance/absences, social connection, self-esteem/mental health, global satisfaction, and drop-out prevention. The overall results from the analysis found that student-centered teaching was positive in student outcomes (r = 0.31), with SD = 0.29. The correlation between student-centered and cognitive student outcomes was r = 0.31 (SD = 0.25), and the correlation between student-centered and affective or behavioral student outcomes was r = 0.35, (SD = 0.20). In looking at a more specific effect of student-centered teaching on cognitive student outcomes, high correlations were reported in students' critical thinking or creative thinking (r = 0.45), and in terms of specific affective or behavioral

outcomes, student-centered teaching is associated with large increases in participation ($r = 0.55$), satisfaction ($r = 0.44$), and motivation to learn ($r = 0.32$). These findings, according to Cornelius-White, seem to indicate that students become very engaged in student-centered classrooms. Furthermore, the effects on self-esteem ($r = 0.35$) and social connections and skills ($r = 0.32$) seem to indicate that students make better relationships with both themselves and others. Cornelius-White concluded that student-centered teaching has above-average associations with positive student outcomes.

Despite the positive results of the student-centered approach, studies show instructors' inclination towards using a teacher-centered approach, as well as resistance to change their teaching styles. Most instructors are comfortable teaching as was done 30-40 years ago (Schaefer & Zygmont, 2003). This characteristic behavior by teachers is attributed to their academic success in a teacher-centered environment that relied heavily on lectures (Brown, 2003; Gilakjani, 2012). Another reason is that educators teach as they were taught most likely because they lack skills in adult learning theory, and this is particularly so in trainers with little understanding of adult learning principles. It is reported that instructors who are knowledgeable about adult education theory and principles and who are experienced with student-centered learning and constructivism are more likely to use a student-centered approach (Brown, 2003).

Weimer (2002) proposed several areas of focus on how to incorporate a student-centered approach of teaching which includes: the choice of content, the process of assessment, the responsibility of the learner, and the power relationship between the teacher and learners. However, he later described three areas as offering convincing approval of student-centered approaches: deep and surface learning, faculty orientations to teaching, and self-regulated learning (Weimer, 2013).

Student-centered Approach and Critical Thinking

When Weimer (2013) wrote her book *Learner-Centered Teaching* her ideas were influenced by the writings of Brookfield (1995) in *Becoming A Critical Reflective Teacher.* Weimer discovered how one's teaching could be learned through reflective practice and that by reflecting on their own practices, teachers are more likely to incorporate students in their teaching activities and help them develop critical thinking. Developing critical thinking helps students become self-directed and in charge of their own learning, and the teacher takes a facilitator role. In a student-centered approach, teachers facilitate, motivate, and actively engage students, and they redirect and intervene as learners make discoveries and inventions (Weimer, 2013). Brookfield (1986) highlighted six principles of effective practice in adult learning: adults learn voluntarily, there is a need for respect among participants for each other's self-worth, learning is collaborative, facilitation should foster self-direction, it should nurture adults' critical-reflections, and that praxis is essential to effective facilitation. Developing critical thinking in a learner requires critical teaching techniques where learners' past experience and existing mental structures are utilized to make them aware of their own ideas (Brookfield, 1987). Critical thinking requires a reflection of beliefs, values, actions, and decisions, and a belief that knowledge is non-static (Schaefer & Zygmont, 2003).

Research and Teaching Styles

While most instructors claim the use of student-centered approaches, the reality in practice contradicts this approach and is considered elusive (Ahmed, 2016; Lea & Troy, 2003; Kovačević & Akbarov, 2016). The Principles of Adult Learning Scale (PALS) has been used to examine the teaching styles of teachers and to categorize them into either teacher-centered or student-centered. In addition, PALS has been used in both face-to-face and online course

delivery teaching formats. Empirical studies on teaching style for adult students have used PALS alongside other variables like teaching philosophies, learning style preferences, student achievement, student engagement and performance, and distance learning (Brakefield, 2011; Dupin-Bryant, 2004; Liu et al., 2006; McCoy, 2006; McGowan, 2007; Schaefer & Zygmont, 2003; Snyder, 2006; Vaughn & Baker, 2008).

Teaching Styles of Face-to-Face Instructors

The student-centered approach fosters critical thinking among students and is a preferred style when this trait is desired (Schaefer & Zygmont, 2003). For example, in an attempt to produce nurses who are critical thinkers capable of good judgment and decision in their work with patients and colleagues, Schaefer and Zygmont (2003) assessed the teaching style of faculty in a nursing program. One purpose was to identify the major teaching style of a group of nursing faculty. The other objective was to compare teaching style and instructional methods used by faculty to their stated teaching/learning philosophies. The sample size included 187 faculty members teaching in a BSN program. The authors utilized a descriptive correlation design with a triangulation method, and their results showed that among nursing program faculty, a teacher-centered teaching approach was the dominant approach.

Curran (2014) carried out a quantitative, explanatory correlational study to examine the teaching styles of nursing professional development specialists. The study examined whether academic degree type and professional development activities influenced the teaching practices of nursing professional development specialists and how they affected their application of adult learning theory principles. The sample size consisted of 114 Nursing Professional Specialists across 15 acute care hospitals. A correlational analysis of data showed nursing professional development specialists support a teacher-centered teaching style. Also, regression analysis

showed that certification influenced the use of adult learning theory, with certified instructors being more likely to use the principles of adult learning theory in their teaching. Kovačević and Akbarov (2016) explored teaching styles of 52 university professors in different departments at a private international university using the PALS. The study's objective was to identify teaching styles and how they differed by gender and course taught. The results show that regardless of faculty gender and department, none of the professors conformed to the learner-centered teaching style. Finally, the authors suggested ways that the faculty could promote student-centered approaches in their teaching.

McCoy (2006) examined teaching styles of faculty at a Police Officer Standards and Training (POST) organization, an entity mandated to train all law enforcement instructors in a state in the Midwest. The study was driven by a need for law enforcement to transition into community-oriented policing, an approach requiring law enforcement officers to collaborate with the community members to solve local crimes. The idea created a need for instructors to incorporate principles of andragogy in training their law enforcement officers. Therefore, the training became an opportunity to assess the instructors' teaching styles, identify instruction methods most often used, and to determine if they align with the principles of adult learning and the student-centered teaching approach. The study used a mixed method involving the PALS questionnaire and an in-depth interview. The results showed a majority of the participants used teacher-centered styles of teaching. The author concluded that for successful implementation of community policing, instructors of the law-enforcement at POST should change their teaching philosophy to learner-centered to align with adult learning theories.

Teaching Styles of Online Instructors

Dupin-Bryant (2004) conducted a descriptive study on teaching styles of interactive television instructors at a land grant university using PALS. The study was guided by two research questions: 1) "What are the teaching styles of university interactive television instructors?" and 2) "To what degree are university interactive instructors committed to principles congruent with learner-centered and teacher-centered teaching styles?" (p. 41). A simple random sample was used to collect data from 330 instructors, a total of 222 surveys were returned, and 22 were deemed unusable. The Principles of Adult Learning Scale was adopted without modification, and the final analysis was done on 203 online instructors' teaching styles.

The author obtained internal consistency reliability ($\alpha = 0.84$), which confirmed the sufficient use of the PALS instrument. The results revealed that interactive television instructors were both student-centered and teacher-centered, but there was a tendency to use a teacher-centered approach. The result supported the study hypothesis that the teacher-centered approach would most likely be the preferred teaching style of university distance education instructors. In another study on teaching styles of online instructors, Barrett, Bower, and Donovan (2007) used PALS on online instructors at a community college in Florida. The study involved more than 250 instructors from the 28 community colleges and was meant to establish whether instructors in these colleges used the widely advocated learner-centered teaching style in their adult learners' classes. The result revealed that approximately 50% "($n = 135$) scored in the middle range with 84% ($n = 244$) of the participants' scores being on the teacher-centered range" p. 37.

In another study conducted at a Midwest university, Ahmed (2013) used PALS to explore the teaching styles of a convenience sample of 22 instructors across four departments using a quantitative exploratory method. The study findings were different from other studies and did not

conform to the common teacher-centered approach. The study reported two types of teaching styles among graduate education instructors, though there was a greater tendency towards a learner-centered style. Unlike large sample sizes reported from other studies and findings pointing to a teacher-centered style, the small sample size used in this study may explain the observed result, which despite this, fits into a growing body of research that emphasizes the need for a shift from a teacher- to learner-centered teaching style. Other studies were done to find out the extent of awareness of learner-centered concepts among students and teachers. Ahmad (2016) explored the extent to which classroom instruction to foreign students taking English as a Second Language was learner-centered. This mixed methods study utilized both questionnaires and observations. The questionnaire was used to examine the extent to which teachers are aware of the concept of learner-centeredness, and observations on the behavior of the teachers occurred through self-reflection notes. The observation-reflection results showed that there were constraints related to teachers, students, and families. The results of the questionnaire survey indicated that teachers were not aware of the concept of student-centeredness.

A mixed method study was conducted by Hassan (2016) to compare teaching styles of instructors and learning styles of students taking an online education recertification course. Participants for the study were drawn from a population of 120 online instructors. Qualitative data was gathered from respondents' narratives, and PALS was used to gather quantitative data. The results from their study revealed that they used a teacher-centered approach to teach. Prescott (2014) explored the university staff teaching styles and their attitudes towards the use of Facebook as an educational tool. The study aimed to find out whether the use of Facebook as an academic tool differed between teaching staff based on their teaching styles. In all, a majority (107 faculty, educators) were teacher-centered, and the rest were learner-centered. The analysis

revealed a difference between the two teaching styles, with the teacher-centered group being of the opinion that Facebook was just as effective as alternative teaching tools.

Meta-Analysis

Oslund (2015) conducted a meta-analysis study using 55 dissertations that used the PALS instrument to determine teaching style. The dissertations were grouped into 4-year colleges, 2-year colleges, and other educators (this was comprised of educators with a master or doctoral degree) (p. x). The results revealed that the "composite mean for PALS was statistically significant for each group and within one standard deviation of the norm mean (M = 146) and classified them as intermediate teacher-centered teaching style" (p. x).

Analysis and Synthesis of Empirical Studies

The PALS instrument has been used in over 100 studies to assess teaching styles. While it has been used without modification in a majority of work, some researchers have modified the instrument to fit their studies. As stated before, it has been used alongside other variables to compare, predict, and correlate the construct of PALS depending on the purpose for which the study is carried out. The teacher-centered approach was found to be dominant in most research findings, but PALS used in conjunction with other variables produced contradicting results. The majority of the studies utilized a quantitative design method while others used some meta-analysis and mixed methods. While some studies identified their sampling procedures, others did not. The sample sizes for most studies were reasonable, except for the study by Ahmed (2013) which comprised 22 instructors. While these studies used PALS, they were short studies that examined mainly teaching styles and were not theory-based. A majority of the studies analyzed their findings as either student-centered or teacher-centered, and few analyzed the seven PALS factors. Some studies missed the mean, standard deviation, or did not use composite scores.

The Principles of Adult Learning Scale (PALS) (Conti, 1982) has been and continues to be used by researchers to examine teaching styles. Although the validity of the instrument was originally established by Conti (1982), researchers have reaffirmed its reliability and validity through other studies. The reliability from past studies reported an acceptable threshold Cronbach $\alpha = 0.7$, making this instrument reliable for identifying the teaching styles of instructors. However, previous research also identified some limitations to the use of the PALS instrument. Some concerns have been expressed that the wording on some PALS items may limit its applicability in an online teaching environment (Dupin-Bryant, 2004; Barrett et al., 2007). These studies contribute to the body of literature as they identified teaching styles in use in real practice. However, the results revealed the discrepancies between theory and research/practice and the existence of a gap in the field of education and among practitioners. This shows that there is a possibility that practitioners are not aware of the views espoused in the literature that would guide instructors as they design their courses and instruction with adult learners. While there exist studies identifying teaching styles of adult learning instructors, a few of the studies have been done with basic adult education teachers; therefore, the instructors may not associate or benefit from the results of these studies. This is where this study can prove to be beneficial.

Teaching Styles, Age, Gender, and Other Variables

Studies illustrate that teaching styles can be influenced by several variables. Certain demographic variables determine the type of teaching styles of instructors, and some of the factors of interest in this study are age, gender, years of teaching experience, an instructor's educational level, professional development in adult education, and type of course taught. Findings from previous research on these variables yielded conflicting results, and a need exists for further research work to provide supportive evidence for contribution by these factors.

Gender. McGowan (2007) used Grasha's teaching style model to examine the teaching styles of technical college core and occupational faculty. The study found that male teachers exhibited student-centered styles while female teachers were teacher-centered in their teaching approach. Roger (2009) conducted a study to determine developmental, philosophical, and demographic characteristics of learner-centered community college faculty. He found gender to be a significant factor, with female teachers being learner-centered and male teachers being more likely to employ teacher-centered techniques. Female faculty tended to use activities that incorporated student participation and encouraged the student to be self-directed and to take charge of their learning. On the contrary, male faculty tended to control class activities and determine learning by students. Lacey, Saleh, and Gorman (1998) found significant differences in teaching between female and male instructors. Men were more likely to use lecturing approaches of teaching, and women were more likely to use small group discussions, a result similar to that was reported by Starbuck (2003). They also found male instructors to be more dominant and exacting, while female instructors were more informal and open towards student ideas. Evans, Harkins, and Young (2008) found female instructors to spend a small proportion of their time lecturing and a greater proportion of time on active classroom practices than male instructors. Grasha (1994) assessed teaching styles with a larger sample of institutions and faculty, and his results revealed women to be facilitators or delegators, relating more and guiding students as opposed to transmitting knowledge, setting goals, and providing feedback, as shown by their male counterparts. In a quantitative study to identify teaching styles of police trainee instructors, Ozturk (2011), found gender not to affect teaching styles. In another study, Kovačević and Akbarov (2016) found no difference in teaching styles between male and female university professors. Ahmed (2013), in his study on teacher-centered versus learner-centered

teachers, found no gender bias in the kind of teaching style an instructor used. The results of these studies showed the influence of gender on teaching styles to be mixed. This shows that female and male teachers could adapt to either of the styles.

Years of Teaching Experience. Experience in teaching may predict teaching styles more likely to be used. Years of teaching experience was not found to affect the development of a student-centered teaching style (Roger, 2009). However, contradicting results were reported in other studies (Liu, Qiao, & Liu, 2006; Ahmed, 2013) in which the length of teaching was found to be the best predictor of higher scores on PALS, an indication that teachers with more years of experience were more likely to shift to the use of a student-centered approach.

Age. Age was not a significant factor in teaching styles and did not determine the choice of a teaching style (Roger, 2009). Similar results were reported by Ahmed (2013) and Ozturk (2011).

Level of Education. A teacher's level of education or training may predict the instructional method they are more likely to use. Ozturk (2011) examined teaching style preferences of trainee instructors at a mid-size police department and found a significant difference in teaching styles between instructors of different educational levels. The same results were reported by McCollins (2000) who investigated differences between students' and college faculty members' perception of teaching styles and the extent to which faculty utilized different teaching styles for traditional and nontraditional students. The results indicated that there was a significant independent relationship between PALS scores and the educational level (p. 21). Educational level explained 14% of the original variance. This shows that the educational level is a good predictor of teaching styles. Furthermore, Gibbs and Coffey (2004) found that training can improve the extent to which teachers implement a student-centered approach. Another study

by Postareff, Lindblom-Yla¨nne, and Nevgi (2007) also confirmed the idea that teacher training in higher education does affect teaching.

Professional Development. Studies have found that training in adult education has a positive effect on the teaching style. Roger (2009) found that instructors who participate in professional development activities tend to score high on activities related to student-centered approaches. Similarly, McCollin (1998) and Curran (2014) showed a positive correlation between teaching styles and the number of hours spent participating in professional development activities on adult education theory. Moreover, Sharvashidze and Bryant (2011) conducted a study to examine the effects of incorporating principles of adult education in teacher training programs. Their mixed method study contained a sample size of 300 teachers, and it found that teachers reported positive affirmation of the importance of adult education in their training and professional development.

Type of Course. The use of a certain teaching style may depend on the course being taught, implying that teaching style is situational and depends on the nature of the course students are taking. Liu, Qiao, and Liu (2006) found that content instructors tend to think of themselves as knowledge providers rather than facilitators. In the same study, they reported that language instructors are more often facilitators and demonstrated a teacher-centered teaching style. However, Conti (2004) reported opposite results and suggested that content-oriented instructors are teacher-centered, while language instructors found student-centered approaches to be more effective. In his study examining basic adult education instructors preparing students for the GED, the author found teacher-centered approaches to be effective while instructors of English as a Second Language found student-centered styles to be more effective.

Several factors contribute to the adoption of certain teaching styles. While demographic factors such as age, gender, and years of teaching experience influence teaching styles, several researchers have included these variables in their studies, but there exists little research investigating the correlation of these variables and teaching styles. This study, therefore, contributes to the literature by investigating the relationship of these demographic factors and teaching style.

Match and Mismatch of Teaching Styles and Learning Styles

There is an ongoing debate about the congruency of teaching and learning styles and their influence on student learning. Teaching and learning styles are behaviors/actions that teachers and learners display in the learning exchange process (Brown, 2003). A match or a mismatch of teaching style can result in effective learning; however, the matching of teaching and learning styles depends on the combination of styles involved. Vaughn and Baker (2008) reported that a combination of certain teaching styles and learning styles leads to positive results, but not all the combinations are effective. They concluded that pairing educators and learners regardless of teaching or learning style may stimulate educators to use a variety of styles. The option to adopt other styles attracts weaker and stronger learning styles of the learners and encourages flexibility and versatility of the learning styles. This promotes adaptability for both the teacher and the learner and could lead to enhanced teaching and learning transactions and lifelong learning skills. Other findings have concluded that congruence in teaching and learning styles leads to student motivation and improved academic achievement in secondary school (Miller, 2001; Stitt-Gohdes, 2003). Ford and Chen's (2001) study with postgraduate students found significant differences in performance between students whose learning styles were matched to the

instructional style and those whose learning styles were mismatched. The performance in the matched conditions group was greater than those in the mismatched conditions.

Additionally, Spoon and Schell (1998) found contradicting results in their study while examining the influence of student learning styles and instructors' teaching styles on the achievement of basic skills. Their study concluded that matching teaching and learning styles may not be effective with adult learners because learning may differ with age and may be affected by situational factors. Therefore, it may be better for instructors to develop multiple techniques for adapting instructional practices to fit adult learners' developmental stages, age, and gender. These factors are dependent on prevailing situations and developmental stages because a learning style once preferred may no longer be the student's preferred learning style in the current moment. Situational factors like learners' goals and types of classes or courses taught may vary from one student to another. Though research has shown matching teaching and learning styles to be beneficial, these two factors alone do not guarantee greater learner achievement. Other factors like age, gender, educational level, the course taught, and motivation influence student learning (Amira & Jelas, 2010; Brown, 2003; Gilakjani, 2012). One study found that male students would prefer lecture and individual tasks in their social science, while female students in pure science courses may benefit from a well-structured lecture and hands-on experience (Amira & Jelas, 2010). It is therefore important for the instructors to adopt multiple teaching styles to accommodate the diverse learners in their classes (Heimlich & Norland, 1994). Studies on congruency in teaching and learning styles continue to give contradictory results and raise debate, and more studies are being conducted with no conclusive results insight.

Knowles, Holton, and Swanson (2012) expressed their concern that andragogy has not been used extensively in empirical research because it lacks an instrument that is

psychometrically valid to measure andragogical constructs. In the historical development of instruments that measure andragogical constructs, PALS is recognized as the most valid psychometrically. Even though it was designed to identify teaching styles and was not intended to examine andragogy, it measures teaching methodologies which are closely associated with the principles of the andragogical theory. Therefore, this study does not only identify teaching styles but will further the research of andragogy as a theory in adult learning. The results from this study are important for the present investigation because they further provide support on the relationship between teaching style and the demographic data of gender, age, years of teaching experience, level of education, professional development, and type of course, as there exists a paucity of knowledge on how these factors play a role in influencing the type of a teaching style an instructor can adopt. Identifying the relationship between teaching styles and the demographic factors could lead to focusing more resources on the progression of student success.

Chapter Summary

The literature review reveals some views about teaching and learning in adult education. A review of the earlier theorists' work explains the existing discrepancies in teaching and learning. The work of the adult learning theorists clearly identified the goal of adult education, their views on how they wanted it to continue forward, and an elaborate discussion on the benefits of aligning teaching and learning into their proposed measures. Even with existing critiques, the theory of adult learning can still be utilized to achieve good results. As illustrated by Knowles, the theory cannot be one-size-fits-all, but it could be used to achieve the goals of both the teachers and students. The difference between pedagogy and andragogy models should not be used to isolate the two but rather to complement each other and be applicable where possible depending on the situations.

The teaching style models bring out two major types: a) One that portrays the behavior of the teacher as constant, irrespective of the matter at hand or context under discussion, and b) the other that portrays teacher behavior as dynamic and constantly changing. The static models are dependent on whether two dimensions; i) that teaching is either student-centered or teacher-centered as explained in Conti's model, and ii) the behavior is dependent and on the beliefs of the instructor for inclusion and sensitivity as espoused by Heimlich and Norland's model. On the other side, dynamic styles are dependent on many variables, and the behavior of the teacher is represented through a combination of either of the variables in the model. Each style is comprised of several elements that teachers can match together to bring out the best and most effective style. There are attempts to explain the benefits and characteristics of each style with several studies showing the dominance of teacher-centered approaches even for studies not utilizing PALS to identify teaching styles. The characteristics of the dominant style reflect those espoused in teacher-centered approaches. Several reasons are explained as to why teachers have not shifted from the way they were taught and how they learned to a teaching style proposed as the best choice for adult learners, the student-centered approach.

A teaching style is the behavior of the teacher that is very important and determines learning outcomes (Curran, 2013). Teaching style as a variable is used alongside others to show its contribution to learning by students. This is shown in the student's engagement and motivation, outcome, and achievement (Brakefield, 2011; McGowan, 2007). The debate on the congruency between teaching and learning does not give conclusive results, but the teaching style of the teachers remains the most important factor in the teaching and learning transaction. Teachers can adjust their style to different instructional techniques and learning methods and adopt several teaching methods and adjust them to fit into the learning style of the students. This

allows them to meet the learning needs of diverse students and not vice versa. As succinctly put by Malcolm Knowles (1984), the father of adult education, the academic success of adult learners is dependent on adult educators using the best instructional practices to meet the needs of their adult learners.

Chapter 3: Methodology

This chapter describes the methods and procedures used to collect and analyze the data. The chapter begins with a restatement of the purpose of the study and the research questions. Next is a detailed description of the research design, population, sampling, instrumentation, data collection, procedures, and analysis.

Purpose of the Study

A teaching style is a behavioral characteristic portrayed by the teacher in the classroom. Teachers adopt different behavioral characteristics in their teaching based on diverse beliefs and values about teaching. The instructor's behavior plays an important and significant role in the success of teaching and learning transactions because it determines the outcome of learning (Heimlich & Norland, 1994; O'Brien, 2001). According to Knowles, "More than any other factor, a teacher's behavior influences the nature of the learning environment" (1970, p. 41). In addition to the influence of a teacher's behavior in learning, teaching style also provides a human connection between the learning environment, the content of learning, and the student (Heimlich & Norland, 1994). Therefore, to ensure that these connections optimize the effectiveness of the teaching and learning process, an instructor's teaching style needs to align with what is the previously identified to be ideal for a given category of students (Heimlich & Norland, 1994). Hence, the purpose of this study was to examine the teaching style preferences of adult education instructors and the influence of gender, age, professional development, years of teaching experience, type of course or teaching subject, and levels of education on teaching style preferences.

Research Questions

1. What are the teaching style preferences of adult education instructors as determined by the mean score on the Principles of Adult Learning Scale (PALS)?
2. What are the teaching styles of adult education instructors as measured by the scores on the seven PALS factors?
3. What is the relationship between teaching styles, the seven PALS factors, and the demographic factors which include years of teaching experience, age, gender, educational level achieved, the type of course/teaching subject, and professional development in adult education?

Research Design

There are two approaches to conduct quantitative research: nonexperimental and experimental research methods (Johnson & Christensen, 2014). A nonexperimental quantitative research design was used for this study. This method was chosen because it aligns with the principle of the study, which was to obtain descriptive numeric data that can be used for analysis and to make inferences about the population (Johnson & Christensen, 2014). Furthermore, a nonexperimental research method was the ideal approach for the study because the intent was not to provide evidence for causality, and no intervention or manipulation of independent variables was required. Unlike in experimental studies, in nonexperimental research studies, manipulation of independent variables and their random assignment to groups may not be possible (Johnson & Christensen, 2014).

While several methods are used for non-experimental research, this study used a survey research design, a nonexperimental research method that uses surveys and questionnaires to gather information (Johnson & Christensen, 2014). Survey research provides information on the

characteristics, opinions, attitudes, emotions, or knowledge of a particular population (Creswell, 2009). This type of research uses a questionnaire, an instrument designed to collect information about the characteristics of a specific sample that has been selected to represent the population of interest (Gay, Mills, & Airasian, 2009). Data can be collected using a questionnaire through personal administration, mail, email, telephone, and interviews (Gay, Mills, & Airasian, 2009). This method was chosen for the study because the researcher was interested in obtaining the opinions of the adult education instructors regarding their teaching styles. Also, with a survey, a larger number of instructors can provide information within a short period of time.

There are two major types of survey research design: longitudinal surveys and cross-sectional surveys. A cross-sectional design was chosen and used in this study. This survey research design obtains data from different groups at one point in time (Fraenkel & Wallen, 2006; Gall, 1996; Gay, Mills, & Airasian, 2009). To collect all the data using this design, a survey may take anywhere from a day to a few weeks or more (Fraenkel & Wallen, 2006), unlike the longitudinal survey where data is collected at different points in time in order to study changes over time (Fraenkel & Wallen, 2006).

The cross-sectional study design has several advantages, including the ability to obtain information about sample's attitudes, beliefs, and self-reported behavior (Mitchell, & Jolley, 2013). Data can also be collected fast and it is inexpensive (Mitchell, & Jolley, 2013) and the researcher does not have to wait many years (Gay, Mills, & Airasian, 2009). However, a cross-sectional study has some limitations and cannot be used when the study's goal is to understand trends or development over time. Also, because data can be collected at a single point in time, it may not provide enough broad perspectives to make decisions about changes in process and a system's reliability (Gay, Mills, & Airasian, 2009).

A survey research design was chosen because of the advantages of this design approach. First, it is highly flexible, and it can be used to answer a wide range of research questions. Second, the results from a research survey can be generalized to a population with the same characteristics. Third, it is efficient in terms of cost, and larger data can be gathered. Fourth, the anonymity of the respondents is guaranteed; therefore, respondents are likely to truthfully answer the questions. Fifth, the use of standardized questions makes it easy to compare between respondents and groups of respondents (Muijs, 2011; Gay, Mills, & Airasian, 2009).

Population and Sampling

The target population for this study was adult education instructors in the 22 regional programs across the Commonwealth of Virginia providing services to different cities and regions in its counties. These programs are federal and state-funded and are mandated to implement the Workforce Innovation and Opportunity Act (WIOA) Title II policies. Instruction is provided in areas of adult basic education, GED, workforce preparation, and ESL. Program managers oversee the implementation of these programs in their respective cities and locations. This population was chosen because little has been written or reported about their methods of instruction and the influence of the demographic factors on their choice of teaching style. Non-probability sampling, a technique that draws research participants from a larger population and in which not everyone in the population gets an equal chance of being included in the sample (Johnson & Christensen, 2014) was used.

An adequate sample size is determined by the population size, the type of research involved, time, and resources available (Fraenkel, Wallen, Norman, 2006; Gay, Mills, & Airasian, 2009). A sample of 10% to 20% of the population is considered acceptable for educational survey research of certain populations (Gay, Mills, & Airasian, 2009), and this is

determined by the response rate. Regarding the response rate, previous studies using PALS and using emails as a means of inviting respondents to respond to an online questionnaire, resulting in a usable response rate. Barrett, Bower, and Donovan (2007) contacted 804 instructors via email to respond to a 50-item online questionnaire. They received a total of 331 completed surveys, with a response rate of 41%. Dupin-Bryant (2004) randomly selected interactive television instructors to receive a research survey, and a total of 225 complete surveys were returned, bringing the response rate to 68%. Ozturk (2011) administered a survey to examine the teaching styles of police officers. The survey was electronically distributed to 1,193 police officers, and a total of 239 police officers responded to the questionnaire, resulting in 209 usable questionnaires leading to a 17.5% response rate. For this study, a population of 697 teachers was contacted with a request to participate in the study but there was no assurance on whether all the 697 teachers received the email communication. Only 100 teachers responded to the questionnaire, a 14.3% response rate; however, because of missing data, 67 questionnaires were complete and deemed usable.

A sample size determines the strength of the results of a study and consequently the extent to which inferences can be made about the larger population. The sample size also determines the extent to which differences in groups can be detected, which is defined as power. Power is the ability of a test to detect small differences (Huck, 2008), and a sample size of 67 out of 697 was an adequate number of instructors that could be used to detect apparent differences within the groups. According to Cochran's (1977) formulas for the calculation of appropriate sample size, "The alpha level is incorporated into the formula by utilizing the *t*-value for that alpha level which, for this study, is .05. T-value for .05 alpha level is 1.96 and valid for a sample size of at least 120" (Bartlett II, Higgins, & Kotrlik, 2001, p. 45). The "Table for Determining

Minimum Returned Sample Size for A Given Population Size For Continuous Data" shows that for a population of 1,500, a sample of 110 is considered as the minimum required number (Bartlett II, Higgins, & Kotrlik, 2001, p. 48).

According to Huck (2008), non-response bias can be addressed by comparing the demographic data of the participants and non-participants. In this study, the nonresponse bias was addressed by comparing the demographic data of participants and the total population. In comparing the data obtained from the state and the data from this study by using years of teaching experience, most of the teachers reported having had the highest number of years of teaching experience in adult education (from the state data, most teachers reported to have had more than 3 years of teaching experience, while the data from this study showed that most of the teachers had more than 11 years of teaching experience). From this comparison of the data, there were no substantial differential-difference that emerged between participants and non-participants when the data was compared using years of teaching experience in adult education.

While a sample size of 67 was adequate to detect differences between groups, the use of non-probability sampling may limit the generalization of the results of this study to the larger population. Although non-probability sampling may not be considered representative of a population (Fraenkel, Wallen, Norman, 2006), the results could be used to make inferences on a population similar to the one used for this study (McMillan, 2000).

Instrumentation

A two-part survey was used to collect data information from adult education instructors. The first part of the survey was designed by the researcher to ask respondents for demographic data, including gender, age, teaching experiences, the type of course taught, professional development, and education level (see Appendix A). The second part of the survey utilized the

unmodified Principles of Adult Learning Scale (PALS) instrument (Conti, 1998, 1983, 1985) (see Appendix B).

Principles of Adult Learning Scale (PALS). The Principles of Adult Learning Scale (PALS) was developed by Gary Conti (1982) as part of his doctoral program. It is an instrument meant to assist individuals in identifying their teaching styles, and in this case, adult education instructors assessed their teaching styles using PALS. The PALS is a 44-item instrument that asks instructors to identify how often they practice the action described in each item. The total scores on PALS may range from 0-220. The average mean score for PALS is 146 with a standard deviation of 20. The commitment to and strength of a particular style can be assessed by comparing the obtained score to 146. Scoring between 0-145 is suggestive of having a teacher-centered style, and scores of 146-220 imply support for a learner-centered approach of teaching. Scores near the mean indicate a blend of both teacher-centered and student-centered teaching behaviors, which could also imply differing behaviors (Conti, 1982). The PALS scores are interpreted by relating them to the average score of the instrument. The overall teaching style of an instructor and the strength of their use and commitment to that style is determined by how far their score is from 146 (Conti, 2004). Using the standard deviation, most scores will be within one standard deviation of the mean, which is between 126 and 166. When obtained scores are close to this score range, it indicates an increased commitment to a specific teaching style. Scores that are in the second standard deviation from the mean indicate very strong and consistent support of a teaching style, while scores that fall on the third standard deviation from the mean indicate an extreme commitment to a style (Conti, 2004, p. 79).

The PALS can be scored on a six-point Likert-type scale ranging from Always to Never with positive and negative items. The numbers correspond as follows for the positive items: 5—

Always, 4—Almost Always, 3—Often, 2—Seldom, 1—Almost Never, 0—Never. For the negative items, the numbers correspond as follows: *0—Always, 1—Almost Always, 2—Often, 3—Seldom, 4—Almost Never,* and *5—Never*. A neutral value score of 2.5 is assigned to omitted items. The survey can be completed in 10-15 minutes and is self-administered. The total score can be computed by summing the value of the response to all items and relating the score to the norm score for the instrument (Conti, 2004).

In addition to summing the total points which indicate the dominant teaching style of the respondent, the responses in PALS can be grouped into seven factors intended to reveal more specific inclinations on the part of the instructor. The seven groups with the associated questions used in Conti's survey (2004) are as follows:

Factor One: Learner-centered Activities. This factor is comprised of 12 negative items: 2, 4, 11, 12, 13, 15, 19, 21, 29, 30, 38, and 40. These items relate to using formal tests in evaluating students and comparing the performance of the students to the outside standards. Scoring low on this factor indicates that the instructor prefers the use of formal testing over informal evaluation and relies on standardized tests. Instructors who score low on these items are also supportive of the teacher-centered approaches of teaching. In general, these instructors "tend to practice one basic teaching method and support the view that most adults have a similar style of learning" (Conti, 1985, p. 9).

Factor Two: Personalizing Instruction. This factor comprises three negative items and six positive items: 3, 9, 17, 24, 32, 35, 37, 41, and 42. Instructors who score high on these items use various types of instructional methods that customize learning to adjust to the specific needs of each student. Objectives are set based on the learner's motives and abilities, students learn at their pace, and, therefore, cooperation rather than competition is encouraged (Conti, 1985, 2004).

Factor Three: Relating to Experience. This factor is comprised of six positive items: 14, 31, 34, 39, 43, and 44. Scoring high on these items means that the instructor values prior experiences of their students by encouraging them to associate their new learning to their experiences and accommodates learning activities accordingly.

Factor Four: Assessing Student Needs. This factor includes four positive items: 5, 8, 23, and 25. These items relate to assessing student needs. A high score indicates that the instructor gets to know the needs of each student, they try to meet their pursuit of the need to know, and they treat the student as an adult. These teachers mostly use one-on-one counseling to discuss individual performance and to identify ways to meet the objectives and goals of the students (Conti, 1985, 2004).

Factor Five: Climate Building. This factor is made up of four positive items: 18, 20, 22, and 28. A high score on these items indicates the use of student-centered activities, most of which echo the work of Knowles (1990), Freire (1970), and others on using dialogue and interaction with and among students and the use of periodic breaks in between learning. Teachers also attempt to eliminate learning barriers by recognizing different competencies already possessed by the students. Climate building involves setting a friendly and informal environment where students are free to share their views without being afraid of making errors. This is where errors are accepted and failure serves as a feedback device to direct future positive learning (Conti, 1985, 2004).

Factor Six: Participation in the Learning Process. The factor contains four positive items: 1, 10, 15, and 36. Teachers who score high on these items release their authority in the classroom to the students. They involve the students in curriculum development and let them determine their learning objectives and how these objectives are evaluated (Conti, 1985, 2004).

Factor Seven: Flexibility for Personal Development. This factor is made up of five negative items: 6, 7, 26, 27, and 33. Scoring low on these items means that the teacher is non-andragogical, against the collaborative mode, and views herself or himself as a provider of knowledge rather than as a facilitator. The teacher determines the learning objectives, and authority remains with the teacher (Conti, 1985, 2004).

The factor scores are calculated by summing the values of the responses for each item in the factor. The mean values and the standard deviation of the obtained scores are then compared to the established norm reference score as indicated in Table 4 (Conti, 2004).

Table 4

Factor Score Values

Factor	Mean	Standard Deviation
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

Note. From Conti, 2004, p. 91

Validity and Reliability

Validity and reliability are important properties for checking the credibility and quality of a measurement. Before an instrument is considered appropriate for a measure, these psychometric properties should be met (Gay & Airasian, 2000). For every use of the scores to make decisions other than that for which it was originally intended, evidence of validity is required while reliability has to be met for every sample used in a study (Gay & Airasian, 2000).

Validity. Validity is the extent to which the results of the scores can be used to make specific decisions or make inferences (McMillan, 2000). The validity of the PALS instrument was established by Conti (1982). Three sources of evidence were used to establish the validity of PALS: construct validity, content validity, and criterion-related validity.

Construct validity "indicates the degree to which a test measures an intended proposed construct" (Gay, Mills, & Airasian, 2009, p. 157). Its main aim for construct validity is to evaluate the items to determine if all aspects or components of the construct are represented in the appropriate degree (McMillan, 2001). The construct validity for PALS was established by two juries of adult educators. The first jury analyzed the items on the instrument, provided comments on the construct of the items, and suggested improvements for various items. This first jury was made of three adult educators from North Illinois University (Conti, 1982, p. 139). The

second jury was national and consisted of 10 professors who were highly recognized in the adult education field who came from different parts of the country. Among these professors in the second jury was Malcolm Knowles who was a very influential author in the field of adult education. The jury members evaluated the construct of each item in the instrument. The concepts in the instrument were found to be congruent with adult education principles and supportive of the collaborative mode (Conti, 1982, pp. 139-140).

Content validity is the extent to which the assessment items represent the proposed content of interest (Gay, Mills, & Airasian, 2009; McMillan, 2001). Its main concern is to find out how well the sample in the assessment represents the larger domain. The content validity for PALS was established through field-testing with 57 adult basic education practitioners in public schools in Illinois. This was determined by "Pearson correlations which measured the relationship between each item and the total score from each participant" (Conti, 1982, p. 140).

Criterion-related validity is determined by comparing a test to a second test or other measures (Gay, Mills, & Airasian, 2009); this seeks to shed light on the relationship of the scores in terms of measuring the same content or construct. The criterion-related validity for PALS was established by comparing the scores on the PALS of those who scored two standard deviations above or below the mean to the scores on the Flanders Interaction Categories (FIAC): "To link these two instruments the jury was asked to judge the action in each item as either initiating or responsive" (Conti, 1982, p.140). The result of the comparison confirmed that the two instruments (PALS and FIAC) were congruent in measuring responsive or initiating actions. Furthermore, it was revealed that PALS can measure both responsive and initiative constructs and also consistently distinguish among those who have divergent views about these constructs (Conti, 2004, p. 142). In addition to the validity established during the development of the

instrument, the validity of PALS was also reported in another study by Yoshida, Conti, Yamauchi, and Iwasaki (2014) who translated the PALS instrument into Japanese and further established the content, construct, and criterion-related validity of the items.

Reliability. Reliability is the extent to which test scores are free from measurement errors (Muijs, 2011) and are dependable and consistent (McMillan, 2001). The reliability of PALS was established when the instrument was developed by the test-retest method. This was done with a group of 23 adult basic education practitioners in Chicago to examine the stability of their performance on the instrument. The re-test was done using the same form of the instrument, which was administered after a 7-day interval, and their scores were compared by a Pearson correlation. The results of the Pearson correlation for the 23 practitioners in the sample group yielded a reliability coefficient of 0.92 (Conti, 1982, pp. 140-141). The instrument has also been tested for the social desirability of items and clarity of item interpretations (Conti, 1982, p. 142).

Previous use of PALS in different settings and populations to identify teaching styles yielded sufficient evidence of reliability. In their study to develop an instrument to measure teaching styles in Japan, Yoshida, Conti, Yamauchi, and Iwasaki (2014) reported a coefficient alpha of 0.86. Dupin-Bryant (2004) in her descriptive study on teaching styles of interactive television instructors yielded a coefficient alpha of 0.84. Previous studies by Curran (2014) and Barrett, Bower, and Donovan (2007) have reported a reliability coefficient of 0.69 and 0.60, respectively. With the report of strong coefficient alphas, these studies have established PALS to be a reliable instrument to measure teaching style. Similarly, in this study, Cronbach's alpha was computed to determine the internal consistency of the items on the PALS instrument, and that of PALS seven factors.

Variables

The dependent variables in the study are the teaching styles (teacher-centered and student-centered, as measured by the total scores of the PALS) and the seven PALS factors. Independent variables are the demographic factors of age, gender, years of teaching experience, education level, professional development, and the type of course/teaching subject. See Table 5 for a detailed summary linking the variables, research questions, and the items on the questionnaire.

Table 5

Variables, Research Questions, and Items on PALS Questionnaire

Independent Variables	Dependent Variables	Research Questions	Items on the Scale
	PALS	1. What are the teaching style preferences of adult education instructors as determined by the mean score on the Principles of Adult Learning Scale (PALS)?	Positive items 1, 3, 5, 8, 10, 14, 15, 17, 18, 20, 22, 23, 24, 25, 28, 31, 32, 34, 35, 36, 39, 42, 43, 44. Negative items 2, 4, 6, 9, 11, 12, 13, 16,19, 21, 26, 27, 29, 30, 33, 37, 38, 40, 41,
	Seven PALS factors	2. What are the teaching styles of adult education instructors as measured by the scores on the seven PALS factors?	Factor 1-Items 2, 4, 11, 12, 13, 16, Factor 2-Items 3, 9, 17, 24, 32, 35,37 Factor 3-Items 14, 31, 34, 39, and 44 Factor 4-Items 5, 8,23, and 25 Factor 5-Items 18, 20, 22, and 28 Factor 6-items 1,10,15, and 36 Factor 7-Items 6, 7, 26, 27, and 33
Demographic factors: years of teaching experience, age, gender, educational level achieved, the type of course and participation in professional development in adult education?	Factors: 1, 2, 3, 4, 5, 6, 7 PALS	3. What is the relationship between teaching styles, seven PALS factors, and the demographic factors which include years of teaching experience, age, gender, educational level achieved, the type of course/teaching subject, and professional development in adult education?	Factor 1-Items 2, 4, 11, 12, 13, 16, Factor 2-Items 3, 9, 17, 24, 32, 35, 37 Factor 3-Items 14, 31, 34, 39, and 44 Factor 4-Items 5, 8, 23, and 25 Factor 5-Items 18, 20, 22, and 28 Factor 6-Items 1, 10, 15, and 36 Factor 7-Items 6, 7, 26, 27, and 33

Procedures and Data Collection

This section provides a detailed description of the steps that were taken to collect data. The process of collecting data began after a successful prospectus defense and the approval of the study from the Virginia Commonwealth University Institutional Review Board (IRB). As for permission to use PALS, there is public permission given by Dr. Gary Conti to practitioners and researchers to produce and use PALS (see Appendix D).

In terms of pilot testing, the link to the questionnaire was sent electronically through RedCap to a few doctoral students who provided comments and feedback on the formatting of the items on the survey. Upon receipt of their feedback and incorporating adjustments, an email with a cover letter (Appendix E) was sent to the adult education program managers requesting their teachers' participation in the study. The cover letter introduced the research project and described the purpose of the study in detail, and an assurance of confidentiality was stated. In addition, the teachers were also informed about voluntary participation in the survey. A link to the two-part questionnaire survey was generated through RedCap and was attached to the email sent to the program managers. The program managers were requested to share the link with their teachers. A second email with the link to the questionnaire was sent directly to the teachers' listserv 3 weeks following the first email being sent out, and a reminder email was sent to the teachers after 5 weeks. The data collection was done between October and November of 2019 when the initial email and the reminder emails were sent, which led to a total of 100 teachers responding to the survey leading to 67 usable data.

Data Analysis

A summary of the characteristics of the respondents provided in the demographic factors was analyzed using descriptive statistics. Data analysis was conducted using IBM SPSS statistics

25.0, and the guidelines provided by Conti on the scoring of the items were followed. The first and the second research questions— What are the teaching style preferences of adult education instructors as determined by the mean score on the Principles of Adult Learning Scale (PALS)? and What are the teaching styles of adult education instructors as measured by the scores on the seven PALS factors?—were analyzed using descriptive statistics. The mean and standard deviation were the two measures of central tendency used for the analysis. The mean was used to compare the mean scores obtained to the norm reference mean score of 146 (Conti, 1982). Similarly, standard deviations obtained were compared to the norm-referenced standard deviation of 20 (Conti, 1982) to identify the teaching style (teacher-centered or student-centered). The same norm mean reference was used for the seven PALS factors (see Table 4 for the norm means). Frequency distributions were used to show the values obtained by the teacher.

The third research question was analyzed using independent samples *t*-tests where there were two groups in the demographic variables (gender and levels of education), and analysis of variance (one-way ANOVA) was used where there were more than two groups in the independent variables (age, years of teaching experience, number of hours participated in professional development in adult education within 5 years, and the type of course/subject. The same analysis was used to determine the differences between the seven PALS factors. Analysis of variance is an inferential statistic used to determine whether scores from two or more groups are significantly different at a selected probability level (Gay, Mills, & Airasian, 2009). A summary of the data analysis approach is provided in Table 6.

Table 6

Data Analysis Method

Research Questions	Independent Variables	Dependent Variables	Data Analysis
1. What are the teaching style preferences of adult education instructors as determined by mean scores on the Principles of Adult Learning Scale (PALS)?		PALS	Descriptive statistics: Mean, Standard Deviations, and Frequencies
2. What are the teaching styles of adult education instructors as measured by the scores on the seven PALS factors?		Seven PALS factors	Descriptive statistics: Mean, Standard Deviation, and Frequencies
3. What is the relationship between teaching styles/seven PALS factors and the demographic factors which include years of teaching experience, age, gender, educational level achieved, course/program taught, and professional development in adult education?	Demographic factors:		
	Gender	PALS and seven PALS factors	Independent samples *t*-test
	Levels of education	PALS and seven PALS factors	Independent samples *t*-test
	Age	PALS and seven PALS factors	1X4 One-Way ANOVA
	Professional development hours in adult education	PALS and seven PALS factors	1X4 One-Way ANOVA
	Years of teaching experience	PALS and seven PAL factors	1X4 One-Way ANOVA
	Type of course/ Subject	PALS and seven PALS factors	1X3 One-Way ANOVA

Chapter 4: Data Analysis and Results

The teaching style of adult education instructors was examined in this study. Information collected from 67 adult education instructors in 22 regional programs that provide services to different cities and counties across the Commonwealth of Virginia provided the data for this study. In this chapter, the purpose statement and research questions are restated, followed by the demographic characteristics of the participants. The rest of the chapter presents the data analysis and findings of the survey.

Purpose of the Study

The purpose of this study was to examine the teaching style preferences of adult education instructors and the influence of gender, age, professional development, experience in teaching adults, teaching subject, and levels of education on teaching style preferences. The dependent variables were determined by the total scores on the PALS and the total scores of each of the seven PALS factors. The independent variables were the demographic variables of gender, age, educational level, years of teaching experience, professional development, and teaching subject/program.

Research Questions

1. What are the teaching style preferences of adult education instructors as determined by the mean score on the Principles of Adult Learning Scale (PALS)?
2. What are the teaching styles of adult education instructors as measured by the seven PALS factors?

3. What is the relationship between teaching style, seven PALS factors, and the demographic factors which include years of teaching experience, age, gender, educational level achieved, the type of course//teaching subject, and professional development in adult education?

Data Cleaning and Checking Assumptions

Data Cleaning. A two-part questionnaire was sent electronically through a link developed in RedCap to the program managers for distribution to their teachers, and the link was also sent to the teacher's listserv between October and November of 2019. A total of 100 participants responded to the questionnaire, with 65 participants giving complete responses. Of the 35 incomplete responses, 33 participants completed only the demographic questionnaire while two completed the demographic questionnaire and about 95% of the PALS survey. Before analysis, missed questions from the two near-complete questionnaire responses were coded according to PALS, assigned 2.5 points for missing values, and were included among the 65 completed responses for data analysis leading to a total of 67 participants used for the analysis.

Assumptions. One-way ANOVA and independent samples *t*-test assumptions were checked before the analysis. Shapiro-Wilk's test ($p > .05$), visual presentation of histograms, and normal Q-Q plots were used to check for normality for dependent variables of PALS and the seven PALS factors. The results showed that the teaching style scores approximated a normal distribution. Also, the assumption of homogeneity of variances was tested and satisfied by Levine's *F* test.

Participants' Characteristics

The demographic data of gender, age, level of education, number of years of teaching experience within the last 5 years, professional development hours in adult education, and the

teaching subject were obtained from the survey. The (N = 67) participants in the study were predominantly female 83.6% (n = 56). The teachers' ages ranged between 20 and above 60 years. Forty-three point three percent of the teachers were above 60 years old (n = 29), 28.4% (n = 19) were between ages 51 and 60, 18% (n = 12) were between 41 and 50 years old, 9% (n = 6) were between 31 and 40 years old, and one teacher was between 20 and 30. Fifty-eight percent (n = 39) of the teachers were master's degree holders, 32.8% (n = 22) had bachelor's degrees, and 4.5% (n = 3) had a doctorate degree. Three teachers have other types of educational levels other than those indicated here. Most of the teachers reported having participated in more than 15 hours of professional development in adult education 59.7% (n = 40); there were 11.9 % (n = 8) of teachers who had 11-15 hours of professional development in adult education during the past 5 years. Eight teachers (11.9%) each reported 6-10 hours and 1-5 hours of professional development, and 4.5% (n = 3) reported not to have participated in any professional development in adult education in the past 5 years. The majority of the teachers 41.8 % (n = 28) had above 11 years of teaching experience with adults. Fifty-three point seven p0ercent (n = 36) of the teachers taught GED, 37.3% (n = 25) were ESL teachers, and 9% (n = 6) were basic adult education teachers. Table 7 below gives a summary of the descriptive statistics of the demographic variables.

Table 7

Demographic of Sample (N = 67)

Variables	Frequency	Percent
Gender		
Male	11	16.4
Female	56	83.6
Other	0	0
Age		
20-30 years	1	1.5
31-40 years	6	9
41-50 years	12	17.9
51-60 years	19	28.4
Above 60 years	29	43.3
Educational Level		
Associate degree	0	0
Bachelor's degree	22	32.8
Master's degree	39	58.2
Doctorate degree	3	4.5
Other	3	4.5
Years of Teaching Experience with Adults		
0-1 years	3	4.5
2-5 years	17	25.4
6-10 years	19	28.4
Above 11 years	28	41.8
Professional Development Hours in Adult Education within 5 years		
0 hours	3	4.5
1-5 hours	8	11.9
6-10 hours	8	11.9
11-15 hours	8	11.9
More than 15 hours	40	59.7
Teaching Subject/Program		
GED	36	53.7
ESL	25	37.3
Basic Education Literacy	6	9

Research Questions and Analysis

This study aimed to identify the teaching style preferences of adult education teachers; three research questions were used to address the purpose of the study. The means, standard deviations, median, overall PALS scores, and overall scores for PALS seven factors were

calculated using the SPSS 25.0 software package. The same software package was used for performing an independent samples *t*-test where there were two groups and a one-way ANOVA where there were two or more groups in the independent variables. A Tukey's Post Hoc Test was used for follow-up analysis where significance was detected.

Research Question One

The teaching style of adult education teachers was measured using the Principles of Adult Learning Scale (PALS). The items on the instrument comprise several activities that a teacher of adults might perform in a classroom. Each of the items responds to the frequency in which one practices the teaching-learning of adults as described in the literature (Conti, 2004). PALS is a 44-item instrument scored on a six-point Likert scale ranging from Always to Never. The assessment contains positive and negative items, and the negative items are reverse coded while "omitted items are assigned a neutral value of 2.5" (p. 90). The total scores of the items are obtained by summing scores on the 44 items. The total scores of the 44 items measured on a Likert scale may range from 0 to 220, with a mean score of 146 and a standard deviation of 20. Scoring above 146 suggests a tendency towards the use of a student-centered approach, while scores below 146 imply support of the teacher-centered approach (Conti, 2004, p. 79).

Cronbach's alpha was computed to determine the internal consistency of the PALS instrument and its subscales. The overall alpha for the PALS instrument ($\alpha = .81$) surpasses the common threshold of .70 for acceptable consistency (Cronk, 2006). In this study, the scores of adult education teachers ranged from 107.5 to 171. The mean score for the teachers was 135.6 with a standard deviation of 14.7, and this was .52 standard deviations below the mean for PALS (146-135.6=10.4; 10.4/20 = .52). The study found that 49 (73.1%) of the respondents scored below 146 (teacher-centered instructional preferences). The remaining 18 (26.9%) respondents

scored at or above 146 (student-centered instructional practices). The distribution of the scores for the respondents is indicated in Figure 4.

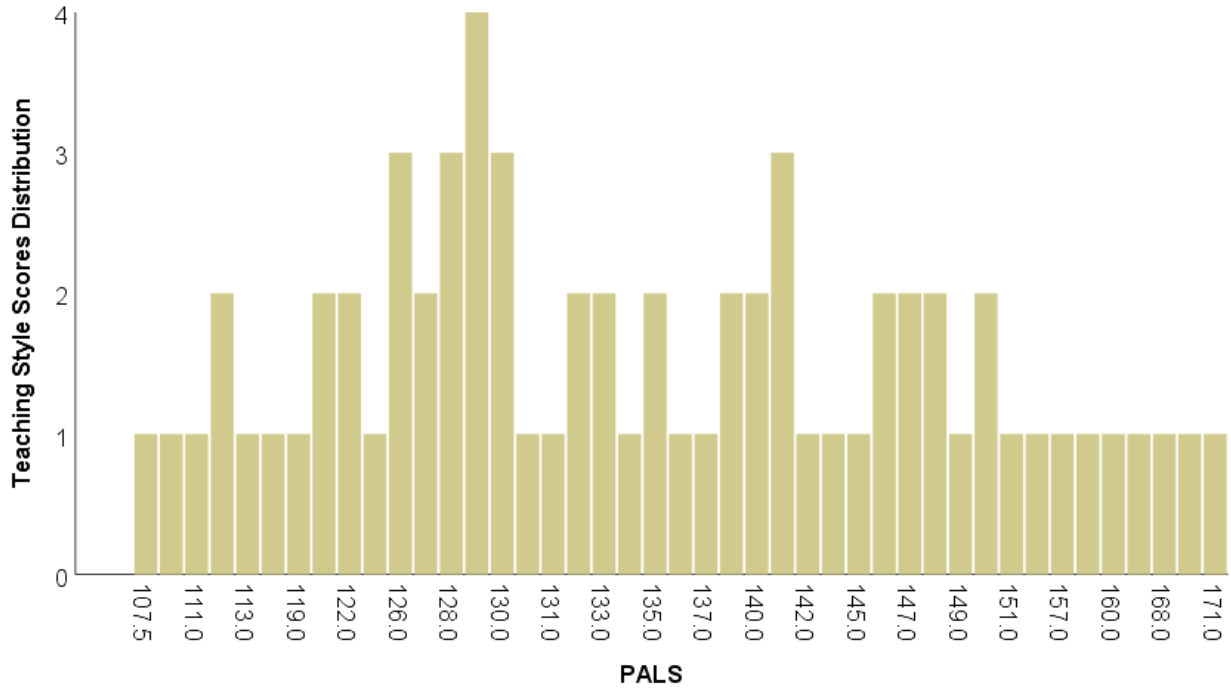


Figure 4. Distribution of PALS Scores for Adult Education Teachers

The aim of research question one was to identify the teaching style preferences of adult education teachers. Compared to the overall PALS mean score of 146, the examined adult education teachers' PALS mean score was 135.6, an indication that adult education teachers tend to be teacher-centered. Scores below the norm mean of 146 show an inclination to teacher-centered approaches while scores above146 indicate the use of a student-centered approach. The results of the study revealed that 73.1% (n = 49) of the teachers scored below the mean of 146, and 26.9%, (n = 18) of the teachers scored above the norm mean of 146. The majority of the teachers scored below the norm indicating that the teachers are teacher-centered. Given that the majority of the teachers scored below the norm mean and that the overall mean score was below

146, it can be concluded, therefore, that as a group they are inclined to use a teacher-centered approach.

Research Question Two

In addition to the total scores that can be obtained from PALS, total scores for PALS can be subdivided into seven factors which are intended to reveal more specific inclinations on the part of the instructor. Cronbach's alpha was computed to determine the internal consistency of the seven subscale factors. The alpha for two of the subscales, factor one, Learner-centered Activities ($\alpha = .76$), and factor four, Assessing Student Needs ($\alpha = .79$), exceeded the common threshold of .70 for acceptable consistency (Cronk, 2006). The alpha for five of the subscales, factor two, Personalized Instructions ($\alpha = .22$), factor three, Relating to Experience ($\alpha = .61$), factor five, Climate Building ($\alpha = .49$), factor six, Participation in the Learning Process ($\alpha = .45$), and factor seven, Flexibility for Personal Development ($\alpha = .57$) fell below the common threshold for acceptable consistency. However, for the sample measured, it is common for subscales to have computed alphas below the common threshold for acceptable consistency since the subscales often have too few items to produce a large alpha (Croker & Algina, 1986).

Factor one, Learner-centered Activities, is about using "evaluation by formal tests and a comparison of students to outside standards and use of disciplinary action when needed, [and] use of methods that controls the classroom and determining educational objectives for each student" (Conti, 2004, p. 80). This factor is made of 12 negative items. Scoring low on this factor suggests a preference for the teacher-centered approach of teaching with a preference for formal testing (p. 80). Scores for factor one may range from 0 to 60, with a mean score of 38 and a standard deviation of 8.3 (p. 90). In this study, scores for adult education teachers ranged from 10 to 51, the mean for the factor was 34.4, the median was 34, and the standard deviation was

7.7. This means that it was 0.43 standard deviations below the mean for factor one for the study (38-34.4 =3.6; 3.6/8.3=0.43). The distribution of scores for factor one is shown in Figure 5. The scores distribution shows what the teachers scored. Most of the teachers scored below the norm mean for learner-centered activities and therefore did not use teaching practice that related to student-centered activities.

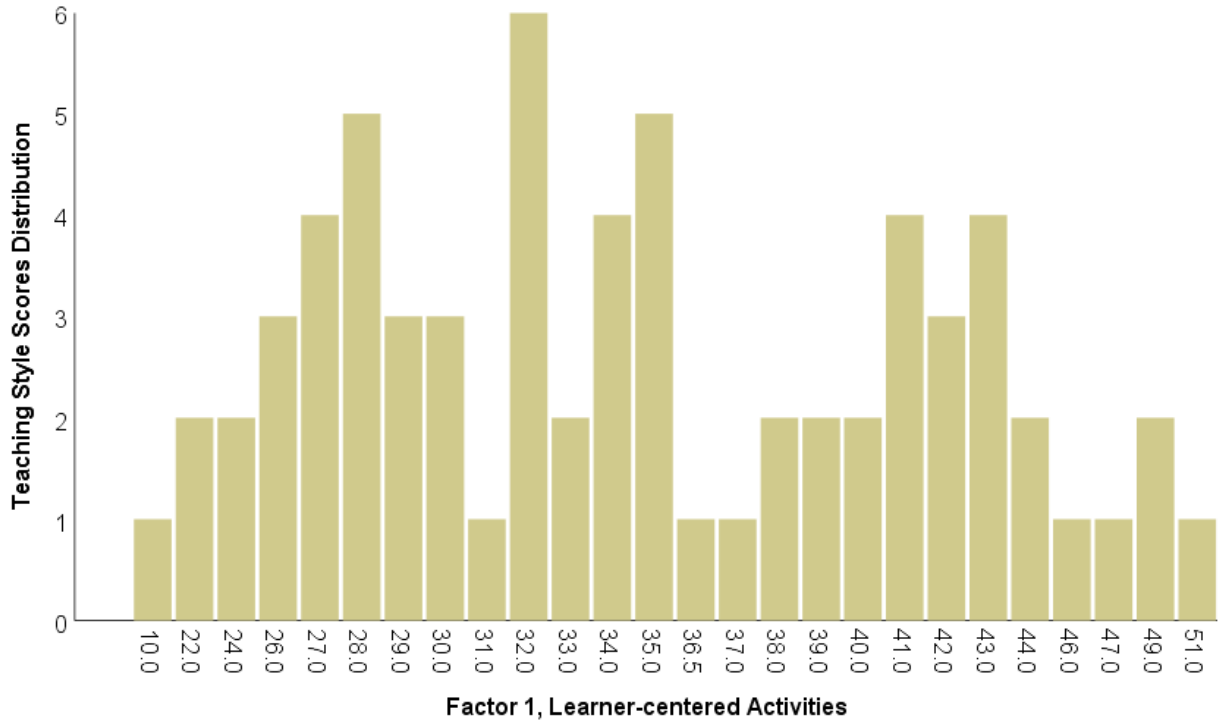


Figure 5. Distribution of Factor 1, Learner-centered Activities Scores for Adult Education Teachers

Factor two is Personalized Instruction, and this factor contains six positive items and three negative items. It deals with the use of a variety of methods, materials, assignments, and other things that make learning personalized to meet the individual needs of each student. Goals are set depending on the individual's abilities and purposes; therefore, a self-paced and collaborative mode of learning is encouraged (Conti, 2004, p. 80). The scores for factor two can

range from 0 to 30, the norm mean is 31, and the standard deviation is 6.8 (Conti, 2004, p. 91). A high score on this factor means a teacher utilizes several instructional methods that are customized to meet the needs of each student. In this study, factor two scores for adult education teachers ranged from 18 to 42 (Figure 6), the mean was 30, the median was 31, and the standard deviation was 5. This was 0.15 standard deviations below the mean for factor two for this study (31-30=1; 1/6.8=0.15).

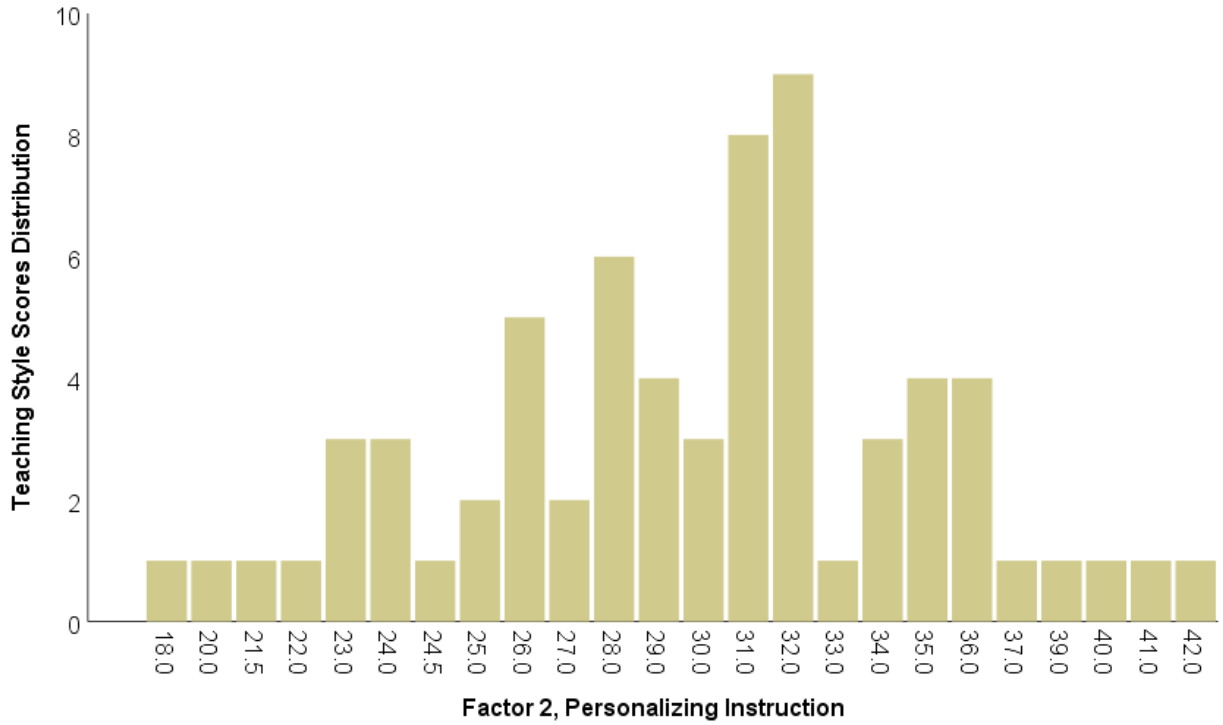


Figure 6. Distribution of Factor 2, Personalizing Instruction Scores for Adult Education Teachers

Factor three, Relating to Experience, consists of six positive items. This factor deals with planning "learning activities that take account of students' previous experiences and encourage students to relate their new learning to experiences" (Conti, 2004, pp. 80-81). The scores for this factor may range from 0 to 30 with a mean score of 21 and a standard deviation of 4.9 (Conti,

2004, p. 91). As shown in Figure 7, the distribution of the scores for adult education teachers in this study ranged from 14 to 29. The mean for the factor was 21.5, the median was 21, and the standard deviation was 3.4. This means that it was 0.1 standard deviations above the mean for factor three for this study (21.5-21=.5;0.5/4.9=.1).

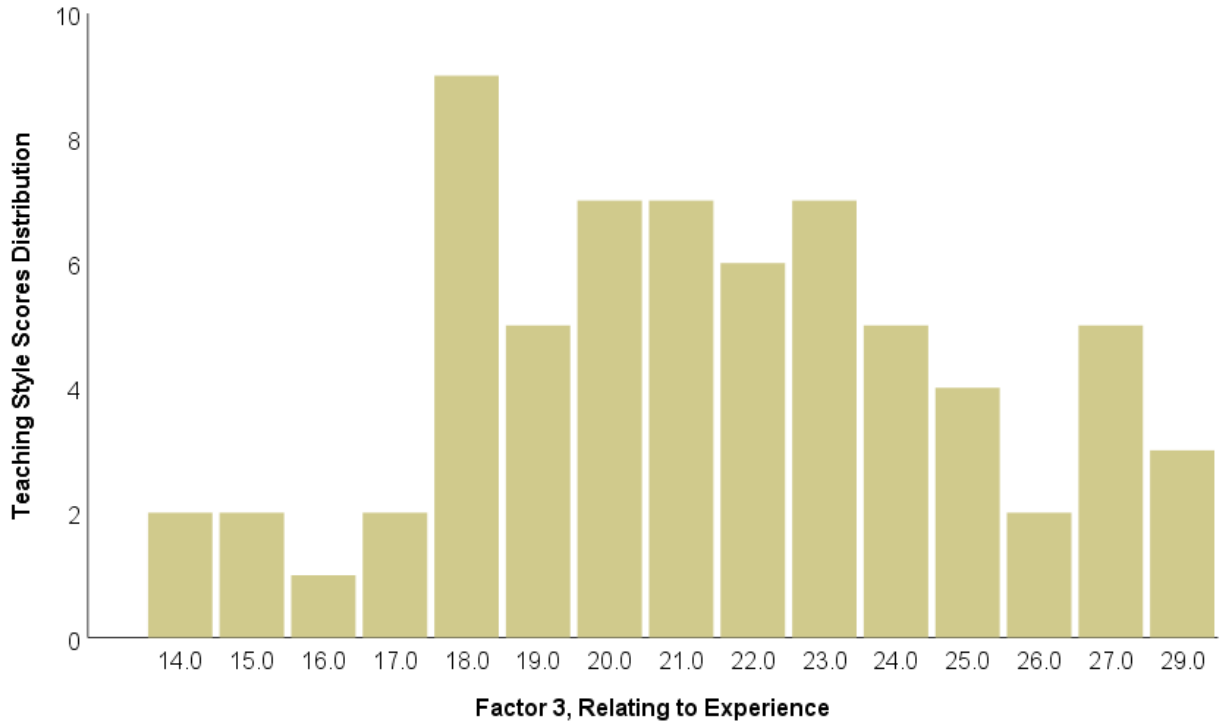


Figure 7. Distribution of Factor 3, Relating to Experience Scores for Adult Education Teachers

Factor four is Assessing Student Needs, and it is made of four positive items. This factor relates to the way a teacher of adults "views a student as an adult, [and] this can be done by discovering what a student wants and needs to know" (Conti, 2004, p. 81). The range of the scores for this factor can be from 0 to 20, the mean score is 14, and the standard deviation is 3.6 (Conti, 2004 p. 91). A high score on this factor indicates that a teacher treats students like adults (p. 81). In this study, factor four scores for adult education teachers ranged from 6 to 20 (Figure

8), the mean and the median were 14, and the standard deviation was 3.1. This means that it was 0.03 standard deviations above the mean for factor four for this study (14.1-14=.1;.1/3.6=0.03).

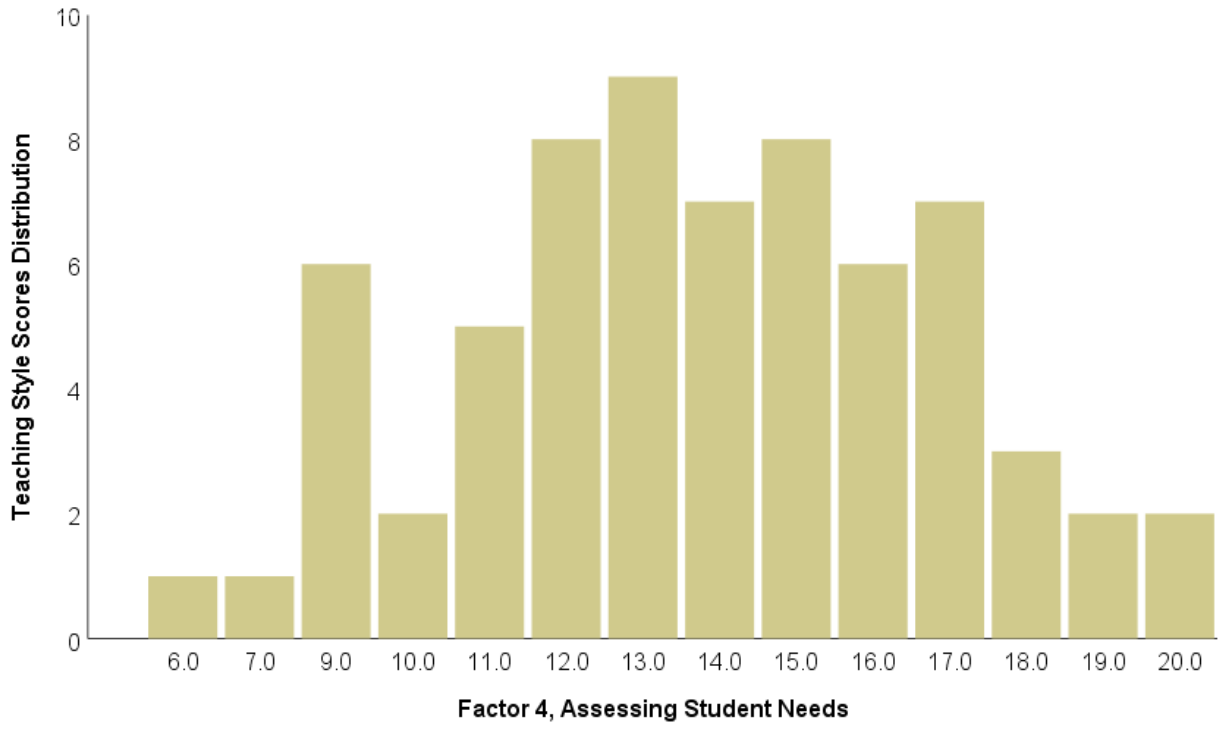


Figure 8. Distribution of Factor 4, Assessing Student Needs Scores for Adult Education Teachers

Factor five, Climate Building, contains four positive items. This factor relates to "creating a friendly and informal climate as an initial step in the learning process. Setting an environment that encourages students dialogue and interaction with each other" (Conti, 2004, p. 81). Scoring high on this factor indicates a preference for setting a friendly and informal climate in the learning process (p. 81). The range of the scores for factor five can be from 0 to 20, the mean is 16, and the standard deviation is 3.0 (p. 91). In this study, factor five scores for adult education teachers ranged from 9 to 19 (Figure 9), the mean was 13.4, the median was 14, and

the standard deviation was 1.9. This was 0.9 standard deviations below the mean for factor five for this study (16-13.4=2.6;2.6/3.0= 0.9).

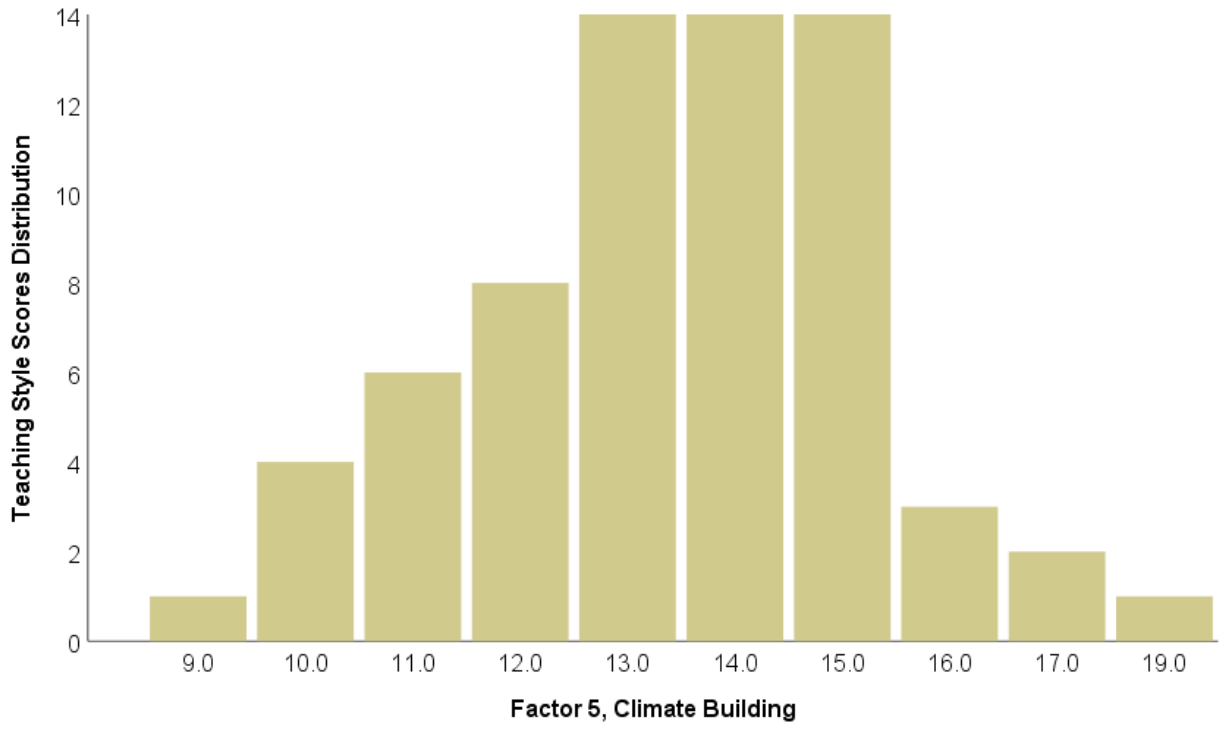


Figure 9. Distribution of Factor 5, Climate Building Scores for Adult Education Teachers

Factor six, Participation in the Learning Process, includes four positive items in the factor. This factor relates to "the extent of involvement of the student in deciding the nature and the assessment of the content material" (Conti, 2004, p. 81). Scoring high on this factor indicates a preference for "having students find the problems that they wish to solve and letting them participate in making decisions about the topics that will be covered" (p. 81). The score for factor six can range from 0 to 20; the mean is 13, and the standard deviation is 3.5 (p. 91). In this study, factor six scores for adult education teachers ranged from 4 to 19 (Figure 10); the mean was 13,

the median was 13, and the standard deviation was 2.7. This was 0.03 standard deviations above the mean for factor six for this study (13.1-13=.1;.1/3.5= 0.03).

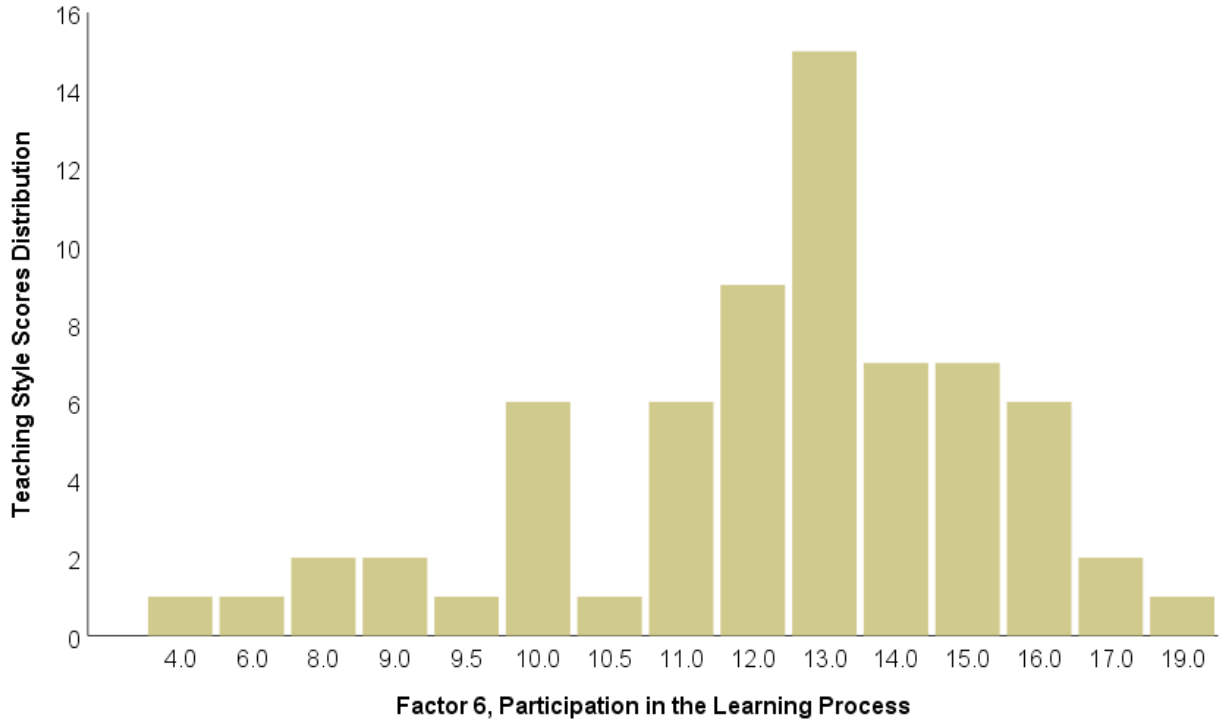


Figure 10. Distribution of Factor 6 Participation in the Learning Process Scores for Adult Education Teachers

Factor seven, Flexibility for Personal Development. This factor contains five negative items that do not foster flexibility for personal development. Scoring low on this factor shows that a teacher sees herself or himself as a source and as someone who can provide knowledge rather than as a facilitator (Conti, 2004, p. 82). The range score for this factor can be 0 to 35, the mean is 13, and the standard deviation is 3.9 (p. 91). The results showed that adult education teachers in this study scored between 1 to 20 (Figure 11), with a median of 10, a mean of 10, and

a standard deviation of 3.3. This was 0.8 standard deviations below the mean for factor seven for this study (13-10=3;3/3.9=0.8).

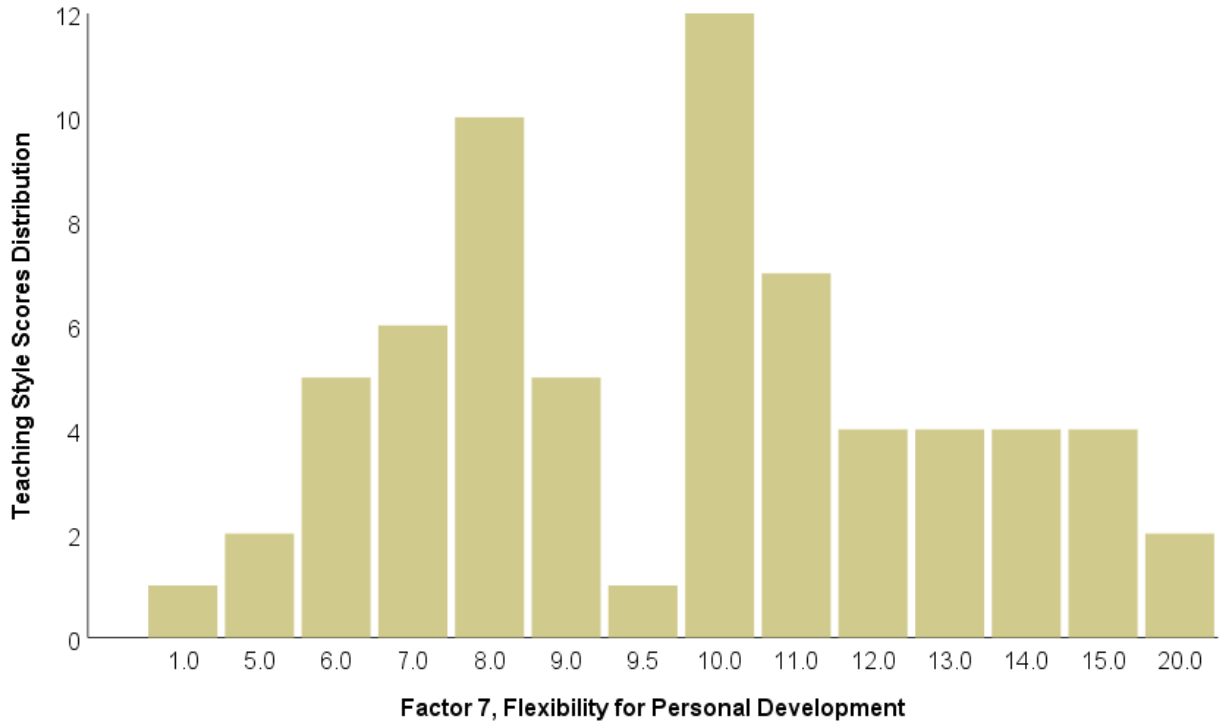


Figure 11. Distribution of Factor 7, Flexibility for Personal Development Scores for Adult Education Teachers

The means and standard deviations of the seven factors in comparison to the norm means and standard deviations are summarized in Table 8. The means for factors three, four, and six were above the norm means, while the means for factors one, two, five, and seven were below the established norm means. Mean scores above the norm mean imply that the teachers utilized the teaching practices described in those factors. On the other hand, factors that scored below the norm mean, signify that the teachers mostly did not use the teaching practices described in those factors.

Table 8

PALS and Seven PALS Factors Scores

Dependent Variables	PALS Mean	PALS SD	Study Mean	Study SD
PALS	146	20	136	14.7
Factor 1: Learner-centered Activities	38	8.3	34.4	7.7
Factor 2: Personalizing Instruction	31	6.8	30.0	5.0
Factor 3: Relating to Experience	21	4.9	21.5	3.4
Factor 4: Assessing Student Needs	14	3.6	14.1	3.1
Factor 5: Climate Building	16	3.0	13.4	1.9
Factor 6: Participation in the Learning Process	13	3.5	13.1	2.7
Factor 7: Flexibility for Personal Development	13	3.9	10.0	3.3

The second research question aimed to identify the teaching style preferences of adult education teachers as measured by the seven PALS factors. Each of the PALS factors reveals an inclination to a specific approach described in the factors. The scores of these factors are compared to the norm means (see Table 8). A low score on the factors indicates a rejection of a specific approach described in the factors. A high score on the factors reveals the use of the instructional practices described in the factors. Like the PALS total score, scoring low implies favoring the use of a teacher-centered approach, and a high score shows an inclination towards the use of a student-centered approach. The results from the study revealed that of the seven PALS factors, only three had means values above the norm means while the other four factors were below the norm means. The fact that four of seven (57%) PALS factors registered mean scores lower than the norm mean values supports the observation that adult education teachers tend to incline more on the teacher-centered approach.

Research Question Three

For question three, a one-way ANOVA was used to assess the relationship between PALS, the seven PALS factors and the demographic factors of age, the number of hours

participated in professional development within 5 years, years of teaching experience, and type of course. An independent samples *t*-test was used to assess the relationship between PALS, the seven PALS factors, and the demographic factors of gender and levels of education.

Independent Sample *t*-test for Gender and PALS

An independent sample *t*-test was performed to determine whether there were differences reported in teaching style preferences according to gender. The results of the independent sample *t*-test showed that there was no statistical significance in style preference between male and female teachers. On average, as shown in Table 9, female teachers (M = 136.79, SD = 14.42) tended to be more student-centered compared to male teachers (M = 129.82, SD = 15.72), t (65) = -1.444, p = .15.

Independent Sample *t*-test for Gender and Factor One, Learner-centered Activities

An independent sample *t*-test was used to compute whether there were differences in teaching style preferences by gender. The results of the independent sample *t*-test showed no statistical significance in teachers who used learner-centered activities between male and female teachers. On average, as indicated in Table 9, female teachers (M = 34.97, SD = 6.73) tended to use more learner-centered activities as compared to male teachers (M = 31.46, SD = 11.46), t (11.39) = -.99, p = .35.

Independent Samples *t*-test for Gender and Factor Two, Personalizing Instruction

To determine whether gender influenced using personalized instruction by the teachers, an independent sample *t*-test was carried out. The results showed that there was no statistical significance in personalizing instruction between male and female teachers. On average, female teachers (M = 30.14, SD = 5.24) tended to use more personalized instruction than male teachers

(*M* = 29.18, *SD* = 4.07), *t* (65) = -.02, *p* = .568. The means and standard deviations are reported in Table 9.

Independent Sample *t*-test for Gender and Factor Three, Relating to Experience

To test whether there were differences in the use of instruction that relates to student experience between male and female teachers, an independent sample *t*-test was used. The results showed that there was no statistical significance in teachers who used instruction that relates to student experience between male and female teachers. On average, as shown in Table 9, female teachers (*M* = 21.48, *SD* = 3.45) were slightly more likely to use instruction that related to student experiences than male teachers (*M* = 21.46, *SD* = 4.78), *t* (65) = -.02, *p* = .982.

Independent Sample *t*-test for Gender and Factor Four, Assessing Student Needs

The results of an independent sample *t*-test revealed no statistical significance in teachers who used instruction that assesses student needs between male and female teachers. On average, as indicated in Table 9, the means for both female teachers (*M* = 13.73, *SD* = 2.91) and male teachers (*M* = 13.73, *SD* = 4.19), *t* (65) = -.005, *p* = .996 were the same.

Independent Sample *t*-test for Gender and Factor Five, Climate Building

An independent sample *t*-test was used to determine whether there were differences reported in teachers who used instruction that foster a friendly and informal atmosphere for learning (Climate Building) according to gender. The results showed no significant differences between male and female teachers. On average, female teachers (*M* = 13.54, *SD* = 1.95) tended to create a friendlier and more informal learning atmosphere for students than male teachers (*M* = 12.91, *SD* = 1.51), *t* (65) = -1.00, *p* = .319. The means and standard deviations are illustrated in Table 9.

Independent Sample *t*-test for Gender and Factor Six, Participating in the Learning Process

An independent sample *t*-test was used to determine whether there were differences reported in teaching style preferences by gender. The results revealed no statistical significance in style preference between male and female teachers. On average, as indicated in Table 9, female teachers (M = 12.75, SD = 2.49) tended to use instruction that allowed student participation in their learning than male teachers (M = 11.91, SD = 3.42), t (65) = -.96, p = .340.

Independent Sample *t*-test for Gender and Factor Seven, Flexibility for Personal Development

An independent sample *t*-test was used to determine whether there were differences reported in teaching style preferences by gender. There was no statistical significance in style preference between male and female teachers. On average, as presented in Table 9, female teachers (M = 10.17, SD = 2.87) had a tendency to be more facilitators rather than knowledge providers, they also offer flexibility for student personal development than male teachers (M = 9.18, SD = 5.21), t (11.22) = -.61, p = .554.

Table 9

Descriptive Statistics for Gender, PALS, and Seven PALS Factors

Dependent Variables	Gender	N	Mean	SD
PALS	Male	11	129.82	15.71
	Female	56	136.79	14.42
Factor 1	Male	11	31.46	11.46
	Female	56	34.97	6.73
Factor 2	Male	11	29.18	4.07
	Female	56	30.14	5.24
Factor 3	Male	11	21.46	4.78
	Female	56	21.48	3.45
Factor 4	Male	11	13.73	4.19
	Female	56	13.73	2.91
Factor 5	Male	11	12.91	1.51
	Female	56	13.54	1.95
Factor 6	Male	11	11.91	3.42
	Female	56	12.75	2.49
Factor 7	Male	11	9.18	5.21
	Female	56	10.17	2.87

Independent Sample *t*-test for Levels of Education and PALS

An independent sample *t*-test was used to determine whether there were differences reported in teaching style preferences by educational levels. The results showed that there was no statistical significance in teaching style preference between teachers who had a bachelor's degree and teachers with a master's degree. On average, teachers with a bachelor's degree (M = 135.5, SD = 13.57) tended to be less student-centered than teachers with a master's degree (M = 137.5, SD = 15.55), t (59) = -.50, p = .618. Means and standard deviations are reported in Table 10.

Independent Sample *t*-test for Levels of Education and Factor One, Learner-centered Activities

The results of the independent sample *t*-test did not find statistical significance in learner-centered activities between teachers who had a bachelor's degree and teachers with a master's degree. On average, as presented in Table 10, teachers with a bachelor's degree (M =

34.82, *SD* = 5.46) tended to use less learner-centered activities than teachers with a master's degree (*M* = 35.45, *SD* = 8.08), *t* (56.93) = -.36, *p* = .718.

Independent Sample *t*-test for Levels of Education and Factor Two, Personalizing Instruction

The results of the independent sample *t*-test showed no statistical significance in personalizing instruction between teachers who had a bachelor's degree and teachers with a master's degree. On average, as indicated in Table 10, teachers with a bachelor's degree (*M* = 28.82, *SD* = 5.47) tended to use less personalized instruction than teachers with a master's degree (*M* = 30.97, *SD* = 4.78), *t* (59) = -1.61, *p* = .113.

Independent Sample *t*-test for Levels of Education and Factor Three, Relating to Experience

An independent sample *t*-test was used to assess whether there were differences reported in teaching style preferences by levels of education. The results revealed no statistical significance in the way teachers used instruction related to student experience between teachers who had a bachelor's degree and teachers with a master's degree. On average, as presented in Table 10, teachers with a bachelor's degree (*M* = 21.82, *SD* = 3.61) tended to use instruction that related to student experience more than did teachers with master's degrees (*M* = 21.03, *SD* = 3.62), *t* (59) = 0.82, *p* =.414.

Independent Sample *t*-test for Levels of Education and Factor Four, Assessing Student Needs

There was no statistical significance found in the results of the independent sample *t*-test in factor four between teachers who had a bachelor's degree and teachers with a master's degree. On average, teachers with a bachelor's degree (*M* = 14.18, *SD* = 3.48) tended to use instruction

that assessed student needs more than teachers with a master's degree (M = 13.44, SD = 2.89), t (59) = .89, p =.372. The means and standard deviations are provided in Table 10.

Independent Sample *t*-test for Levels of Education and Factor Five, Climate Building

The results of the independent sample *t*-test did not show statistical significance in factor five between teachers who had a bachelor's degree and teachers with a master's degree. On average, as indicated in Table 10, teachers with a bachelor's degree (M = 13.46, SD = 1.65) tended to provide a student-friendly environment in classrooms more than teachers with a master's degree (M = 13.36, SD = 2.06), t (59) = .17, p =.853.

Independent Sample *t*-test for Levels of Education and Factor Six, Participating in the Learning Process

There was no statistical significance found in the results of the independent sample *t*-test in factor six between teachers who had a bachelor's degree and teachers with a master's degree. On average, teachers with a bachelor's degree (M = 12.68, SD = 2.90) were slightly more likely to use instruction that included the student in the learning process and was, therefore, more student-centered as compared to that of teachers with a master's degree (M = 12.67, SD = 2.69), t (40.99) = .02, p = .984. The means and standard deviations are reported in

Independent Sample *t*-test for Levels of Education and Factor Seven, Flexibility for Personal Development

The results of the independent sample *t*-test did not show statistical significance in factor seven between teachers who had a bachelor's degree and teachers with a master's degree. On average, teachers with a bachelor's degree (M = 9.73, SD = 2.93) tended to allow less flexibility for student development than teachers with a master's degree (M = 10.58, SD = 3.37), t (59) = -.989, p = .327. The means and standard deviations are presented in Table 10.

Table 10

Means and Standard Deviations for Levels of Education, PALS, and Seven PALS Factors

Dependent Variables	Levels of Education	N	Mean	SD
PALS	Bachelor's	22	135.5	13.57
	Master's	39	137.5	15.54
Factor 1	Bachelor's	22	34.82	5.46
	Master's	39	35.45	8.08
Factor 2	Bachelor's	22	28.82	5.47
	Master's	39	30.97	4.78
Factor 3	Bachelor's	22	21.82	3.61
	Master's	39	21.03	3.62
Factor 4	Bachelor's	22	14.18	3.47
	Master's	39	13.44	2.89
Factor 5	Bachelor's	22	13.46	1.65
	Master's	39	13.36	2.06
Factor 6	Bachelor's	22	12.68	2.90
	Master's	39	12.67	2.69
Factor 7	Bachelor's	22	9.73	2.93
	Master's	39	10.58	3.37

PALS and Age

A one-way analysis of variance (ANOVA) was conducted to assess the relationship between PALS and age. The results of the one-way ANOVA as indicated in Table 11 revealed no significant relationship between age and teaching style preference F (3, 62) = 1.04, p = .381. The means and standard deviations are presented in Table 12.

Factor One, Learner-centered Activities, and Age

A one-way ANOVA was computed to compare whether there was a relationship between factor one and age. The results of the one-way ANOVA showed no significant relationship between age and the use of learner-centered activities F (3, 62) = 1.09, p = .362. As shown in Table 11, in general, teachers between 31-40 years old tend to use instruction that include learner-centered activities (M = 37.50, SD = 7.06) than teachers between ages 51-60 (M = 33.11, SD = 6.05). The means and standard deviations are illustrated in Table 12.

Factor Two, Personalizing Instruction, and Age

A one-way ANOVA was conducted to determine whether there was a relationship between factor two and age. The results of the one-way ANOVA as presented in Table 11 revealed no significant relationship between age and the use of personalized instruction F (3, 62) = .70, p = .555. The means and standard deviations are shown in Table 12.

Factor Three, Relating to Experience and Age

A one-way ANOVA was performed to determine whether there was a relationship between factor three and age. The results of the one-way ANOVA indicated no significant relationship between age and the use of instruction that relates to the student experience, F (3, 62) = .13, p = .941. See Table 11 for the ANOVA results and Table 12 for the means and standard deviation.

Factor Four, Assessing Student Needs and Age

A one-way ANOVA was computed to determine whether there was a relationship between factor four and age. The results revealed no significant relationship between age and assessing student needs, F (3, 62) = .46, p = .709. See Table 11 for the ANOVA results and Table 12 for the means and standard deviations.

Factor Five, Climate Building and Age

A one-way ANOVA was computed to determine whether there was a relationship between factor five and age. The results of the one-way ANOVA revealed no significant relationship between age and factor five, climate building, F (3, 62) = 1.37, p = .262. See Table 11 for the ANOVA results and Table 12 for the means and standard deviations.

Factor Six, Participation in the Learning Process and Age

A one-way ANOVA was conducted to determine whether there was a relationship between factor six and age. The results of the one-way ANOVA suggested that there was a significant relationship between age and participation in the learning process, F (3, 62) = 3.323, p < .05, η2 (eta-squared) = .14. See Table 11 for the ANOVA results. The effect size as measured by eta squared was large. A post-hoc analysis using Tukey HSD test was conducted to further examine differences between specific groups and found that the teaching style of the teachers in the age group 41-50 (M = 14.46, SD = 2.43) was significantly different from the teaching style of the teachers who are above 60 years of age (M = 12.19, SD = 2.16, Tukey HSD, p < .05). Although teachers between the ages of 41 and 50 reported a mean of greater magnitude (M = 14.46, SD = 2.43) than teachers between the ages of 51 and 60 (M = 12.89, SD = 2.47), those above 60 (M = 12.19, SD = 2.16) and for teachers ages 31-40 years (M = 11.50, SD = 2.43), all were statistically similar. The means and standard deviations for these age groups are illustrated in Table 12.

Factor Seven, Flexibility for Personal Development and Age

A one-way ANOVA was performed to determine whether there was a relationship between factor seven and age. The results of the one-way ANOVA as shown in Table 11 revealed no significant relationship between age and flexibility for personal development, F (3, 62) = 2.12, p = .107. Means and standard deviations are reported in Table 12.

Table 11

ANOVA Table for Age, PALS, and Seven PALS Factors

Dependent Variables		Sum of Squares	*df*	Mean Square	*F*	Sig.
PALS	Between Groups	653.37	3	217.79	1.04	.381
	Within Groups	12,979.99	62	209.36		
	Total	13,633.36	65			
Factor 1	Between Groups	194.35	3	64.78	1.09	.362
	Within Groups	3,701.89	62	59.71		
	Total	3,896.25	65			
Factor 2	Between Groups	50.36	3	16.79	.70	.555
	Within Groups	1,485.31	62	23.96		
	Total	1,535.67	65			
Factor 3	Between Groups	5.52	3	1.84	.13	.941
	Within Groups	866.93	62	13.98		
	Total	872.44	65			
Factor 4	Between Groups	13.04	3	4.35	.46	.709
	Within Groups	582.13	62	9.39		
	Total	595.17	65			
Factor 5	Between Groups	14.65	3	4.88	1.37	.262
	Within Groups	221.61	62	3.57		
	Total	236.26	65			
Factor 6	Between Groups	53.89	3	17.97	3.32	.025
	Within Groups	335.23	62	5.41		
	Total	389.12	65			
Factor 7	Between Groups	68.23	3	22.74	2.12	.107
	Within Groups	665.02	62	10.73		
	Total	733.25	65			

Note. Factor 1: Learner-centered Activities, Factor 2: Personalizing Instruction, Factor 3: Relating to Experience, Factor 4: Assessing Student Needs, Factor 5: Climate Building, Factor 6: Participation in the Learning Process, Factor 7: Flexibility for Personal Development

* The mean difference is significant at the .05 level.

Table 12

Means and Standard Deviations for Age, PALS, and PALS Seven Factors

Dependent Variables	Age	N	Mean	SD
PALS	31-40 Years	6	139.50	12.63
	41-50 Years	12	141.79	17.44
	51-60 Years	19	133.42	12.02
	Above 60 Years	29	134.67	14.93
	Total	66	136.05	14.49
Factor 1	31-40 Years	6	37.50	7.06
	41-50 Years	12	36.92	6.75
	51-60 Years	19	33.11	6.05
	Above 60 Years	29	33.39	9.05
	Total	66	34.33	7.74
Factor 2	31-40 Years	6	29.83	4.62
	41-50 Years	12	31.38	5.36
	51-60 Years	19	28.95	4.26
	Above 60 Years	29	30.53	5.12
	Total	66	30.17	4.86
Factor 3	31-40 Years	6	21.17	3.76
	41-50 Years	12	22.08	4.12
	51-60 Years	19	21.58	3.25
	Above 60 Years	29	21.35	3.87
	Total	66	21.53	3.66
Factor 4	31-40 Years	6	13.67	2.42
	41-50 Years	12	13.00	2.73
	51-60 Years	19	14.32	3.46
	Above 60 Years	29	13.89	3.01
	Total	66	13.83	3.02
Factor 5	31-40 Years	6	13.83	1.47
	41-50 Years	12	13.58	1.93
	51-60 Years	19	14.00	2.03
	Above 60 Years	29	12.93	1.85
	Total	66	13.44	1.91
Factor 6	31-40 Years	6	11.50	2.43
	41-50 Years	12	14.46	2.43
	51-60 Years	19	12.89	2.47
	Above 60 Years	29	12.19	2.16
	Total	66	12.74	2.45
Factor 7	31-40 Years	6	12.00	2.37
	41-50 Years	12	10.38	2.48
	51-60 Years	19	8.58	3.06
	Above 60 Years	29	10.38	3.78
	Total	66	10.01	3.36

PALS and Number of Hours Participated in Professional Development (PD) in Adult Education Within 5 Years

A one-way ANOVA was computed to assess whether there was a relationship between PALS and the number of hours participated in professional development in adult education within 5 years. The results of the one-way ANOVA showed no significant relationship between PALS and the number of hours participated in professional development, F (3, 63) = .56, p = .641. See Table 13 for the ANOVA results and Table 14 for the means and standard deviations.

Factor One, Learner-centered Activities and Hours Participated in Professional Development in Adult Education within 5 Years.

A one-way ANOVA was conducted to determine whether there was a relationship between factor one and the number of hours participated in professional development in adult education within 5 years. The results of the one-way ANOVA as presented in Table 13 showed no significant relationship between learner-centered activities and the number of hours participated in professional development within 5 years, F (3, 63) = .392, p = .759. The means and standard deviations are illustrated in Table 14.

Factor Two, Personalizing Instruction and Hours Participated in Professional Development in Adult Education within 5 Years

A one-way ANOVA was conducted to assess whether there was a relationship between factor two and the number of hours participated in professional development in adult education within 5 years. The results of the one-way ANOVA as indicated in Table 13 showed no significant relationship between personalized instruction and the number of hours participated in professional development within 5 years, F (3, 63) = 1.04, p = .379. The means and standard deviations are presented in Table 14.

Factor Three, Relating to Experience and Hours Participated in Professional Development in Adult Education within 5 Years

A one-way ANOVA was performed to assess if there was a relationship between factor three and the number of hours participated in professional development in adult education within 5 years. The results of the one-way ANOVA as indicated in Table 13 showed no significant relationship between the use of instruction that relates to the student experience and the number of hours participated in professional development within 5 years, F (3, 63) = 1.61, p = .195. The means and standard deviations are presented in Table 14.

Factor Four, Assessing Student Needs and Hours Participated in Professional Development in Adult Education within 5 Year

A one-way ANOVA was performed to determine whether there was a relationship between factor four and the number of hours participated in professional development in adult education within 5 years. The results of the one-way ANOVA as presented in Table 13 revealed no significant relationship between assessing student needs style and the number of hours participated in professional development within 5 years, F (3, 63) = 1.54, p = .21. The means and standard deviations are shown in Table 14.

Factor Five, Climate Building and Hours Participated in Professional Development in Adult Education within 5 Years

A one-way ANOVA was computed to determine whether there was a relationship between factor five and the number of hours participated in professional development in adult education within 5 years. The results of the one-way ANOVA revealed no significant relationship between climate building style and the number of hours participated in professional

development within 5 years, F (3, 63) = .635, p =.595. See Table 13 for the ANOVA results and Table 14 for the means and standard deviations.

Factor Six, Participation in the Learning Process and Hours Participated in Professional Development in Adult Education within 5 Years

A one-way ANOVA was performed to assess if there was a relationship between factor six and the number of hours participated in professional development in adult education within 5 years. The results of the one-way ANOVA as indicated in Table 13 showed no significant relationship between participation in the learning process style and the number of hours participated in professional development within 5 years, F (3, 63) = .09, p =.964. The means and standard deviations are given in Table 14.

Factor Seven, Flexibility for Personal Development and Hours Participated in Professional Development in Adult Education within 5 Years.

A one-way ANOVA was computed to assess whether there was a relationship between factor seven and the number of hours participated in professional development in adult education within 5 years. The results of the one-way ANOVA showed no significant relationship between flexibility for personal development style and the number of hours participated in professional development within 5 years, F (3, 63) = .20, p =.894. The results of the ANOVA are reported in Table 13, while the means and standard deviations are shown in Table 14.

Table 13

ANOVA Table for Hours of PD, PALS, and Seven PALS Factors

Dependent Variables		Sum of Squares	*df*	Mean Square	*F*	Sig.
PALS	Between Groups	375.51	3	125.17	.56	.641
	Within Groups	13,978.39	63	221.88		
	Total	14,353.90	66			
Factor 1	Between Groups	71.81	3	23.94	.39	.759
	Within Groups	3,845.96	63	61.05		
	Total	3,917.77	66			
Factor 2	Between Groups	79.66	3	26.55	1.04	.379
	Within Groups	1,601.83	63	25.43		
	Total	1,681.49	66			
Factor 3	Between Groups	63.16	3	21.05	1.61	.195
	Within Groups	821.56	63	13.04		
	Total	884.72	66			
Factor 4	Between Groups	43.83	3	14.61	1.54	.213
	Within Groups	597.33	63	9.49		
	Total	641.16	66			
Factor 5	Between Groups	6.94	3	2.31	.64	.595
	Within Groups	229.51	63	3.64		
	Total	236.45	66			
Factor 6	Between Groups	2.05	3	.68	.09	.964
	Within Groups	462.36	63	7.34		
	Total	464.41	66			
Factor 7	Between Groups	7.02	3	2.34	.20	.894
	Within Groups	726.23	63	11.53		
	Total	733.25	66			

Note. Factor 1: Learner-centered Activities, Factor 2: Personalizing Instruction, Factor 3: Relating to Experience, Factor 4: Assessing Student Needs, Factor 5: Climate Building, Factor 6: Participation in the Learning Process, Factor 7: Flexibility for Personal Development

* The mean difference is significant at the .05 level.

Table 14

Means and Standard Deviations for Hours Participated in PD, PALS, and Seven PALS Factors

Dependent Variable	PD Hours	N	Mean	SD
PALS	0-5 Years	11	134.55	16.82
	6-10 Years	8	135.00	16.98
	11-15 Years	8	129.94	11.95
	More than 15 Years	40	137.21	14.44
	Total	67	135.64	14.75
Factor 1	0-5 Years	11	34.18	8.22
	6-10 Years	8	36.88	6.88
	11-15 Years	8	32.75	4.27
	More than 15 Years	40	34.29	8.34
	Total	67	34.39	7.70
Factor 2	0-5 Years	11	28.32	4.52
	6-10 Years	8	29.38	6.07
	11-15 Years	8	28.56	5.05
	More than 15 Years	40	30.85	4.96
	Total	67	29.99	5.05
Factor 3	0-5 Years	11	22.73	4.24
	6-10 Years	8	20.50	2.67
	11-15 Years	8	19.38	3.89
	More than 15 Years	40	21.75	3.53
	Total	67	21.48	3.66
Factor 4	0-5 Years	11	13.27	3.17
	6-10 Years	8	11.88	4.45
	11-15 Years	8	13.38	3.20
	More than 15 Years	40	14.30	2.71
	Total	67	13.73	3.12
Factor 5	0-5 Years	11	13.09	1.64
	6-10 Years	8	13.75	2.31
	11-15 Years	8	12.75	1.75
	More than 15 Years	40	13.60	1.92
	Total	67	13.43	1.89
Factor 6	0-5 Years	11	12.86	3.92
	6-10 Years	8	12.25	2.49
	11-15 Years	8	12.44	2.06
	More than 15 Years	40	12.65	2.45
	Total	67	12.61	2.65
Factor 7	0-5 Years	11	10.09	3.02
	6-10 Years	8	10.38	5.01
	11-15 Years	8	10.69	2.15
	More than 15 Years	40	9.78	3.31
	Total	67	10.01	3.33

PALS and Years of Teaching Experience with Adults

A 1X3 one-way ANOVA was computed to determine whether there was a relationship between PALS and years of teaching experience with adults. The results of the one-way ANOVA suggest that there was a significant relationship between PALS and years teaching experience, F (3, 64) = 4.68, $p < .05$, η2 (eta-squared) = 0.13, as presented in Table 15. The strength of the relationship between PALS and years of teaching experience was medium to large, as assessed by eta squared. A post-hoc analysis was conducted to further examine the differences between specific groups in terms of teaching style preference and found that teachers with 6-10 years of teaching experience with adults (M = 143.63, SD = 15.38) differed significantly from teachers with teaching experience of above 11 years (M = 131.05, SD = 13.26, Tukey HSD, $p < .05$). There were no significant differences in teaching style between teachers with other years of teaching experience. Teachers who had teaching experience between 6-10 years reported the highest mean, followed by teachers with 0-5 years of teaching experience. The lowest mean was reported with teachers who had more than 11 years of teaching experience. The means and standard deviations are provided in Table 16.

Factor One, Learner-centered Activities and Years of Teaching Experience with Adults

A one-way ANOVA was performed to determine whether there was a relationship between factor one and years of teaching experience with adults. The results of the one-way ANOVA as presented in Table 15 were close to being significant, F (2, 64) = 2.744, p =.072. Table 16 shows the means and standard deviations.

Factor Two, Personalizing Instruction and Years of Teaching Experience with Adults

A 1X3 one-way ANOVA was computed to assess whether there was a relationship between factor two and years of teaching experience with adults. The results of the one-way

ANOVA as shown in Table 15 revealed no significance, F (2, 64) = 1.95, p = .151. The means and standard deviations are reported in Table 16.

Factor Three, Relating to Experience and Years of Teaching Experience with Adults

A 1X3 one-way ANOVA was conducted to determine the influence of years of teaching experience with adults on factor three. The results of the one-way ANOVA as indicated in Table 15 revealed no significance, F (2, 64) = 1.88, p = .160. The means and standard deviations are shown in Table 16.

Factor Four, Assessing Student Needs and Years of Teaching Experience with Adults

A one-way ANOVA was conducted to assess whether there was a relationship between factor four and years of teaching experience with adults. The results of the one-way ANOVA as indicated in Table 15 were not significant, F (2, 64) = 2.58, p =. 084. The means and standard deviations are reported in Table 16.

Factor Five, Climate Building and Years of Teaching Experience with Adults

A 1X3 one-way ANOVA was computed to determine whether there was a relationship between factor five and years of teaching experience with adults. The results of the one-way ANOVA as shown in Table 15 revealed no significance, F (2, 64) = 2.13, p = .127. The means and standard deviations are given in Table 16.

Factor six, Participation in the Learning Process and Years of Teaching Experience with Adults

A 1X3 one-way ANOVA was performed to determine whether there was a relationship between factor six and years of teaching experience with adults. The results of the one-way ANOVA as shown in Table 15 revealed no significance, F (2, 64) = 2.09, p = .132. The means and standard deviations are shown in Table 16.

Factor Seven, Flexibility for Personal Development and Years of Teaching Experience with Adults

1X3 one-way ANOVA was conducted to assess whether there was a relationship between factor seven and years of teaching experience with adults. The results of the one-way ANOVA as presented in Table 15 revealed no significance, F (2, 64) = .31, p = .732. The means and standard deviations are reported in Table 16.

Table 15

ANOVA Table for Years of Teaching Experience, PALS, and Seven PALS Factors

Dependent Variables		Sum of Squares	*df*	Mean Square	*F*	Sig.
PALS	Between Groups	1,829.58	2	914.79	4.68	.013
	Within Groups	12,524.33	64	195.69		
	Total	14,353.90	66			
Factor 1	Between Groups	309.42	2	154.71	2.74	.072
	Within Groups	3,608.35	64	56.38		
	Total	3,917.77	66			
Factor 2	Between Groups	96.56	2	48.28	1.95	.151
	Within Groups	1,584.92	64	24.76		
	Total	1,681.49	66			
Factor 3	Between Groups	49.18	2	24.59	1.88	.160
	Within Groups	835.54	64	13.06		
	Total	884.72	66			
Factor 4	Between Groups	47.74	2	23.87	2.58	.084
	Within Groups	593.42	64	9.27		
	Total	641.16	66			
Factor 5	Between Groups	14.74	2	7.37	2.13	.127
	Within Groups	221.70	64	3.46		
	Total	236.45	66			
Factor 6	Between Groups	28.53	2	14.26	2.09	.132
	Within Groups	435.89	64	6.81		
	Total	464.41	66			
Factor 7	Between Groups	7.11	2	3.55	.31	.732
	Within Groups	726.14	64	11.35		
	Total	733.25	66			

Note. Factor 1: Learner-centered Activities, Factor 2: Personalizing Instruction, Factor 3: Relating to Experience, Factor 4: Assessing Student Needs, Factor 5: Climate Building, Factor 6: Participation in the Learning Process, Factor 7: Flexibility for Personal Development

* The mean difference is significant at the .05 level.

Table 16

Means and Standard Deviations for Years of Teaching Experience, PALS, and Seven PALS Factors

Dependent Variable	Years of Teaching Experience with Adults	N	Mean	SD
PALS	0-5 Years	20	134.48	13.61
	6-10 Years	19	143.63	15.38
	Above 11 Years	28	131.05	13.26
	Total	67	135.64	14.75
Factor 1	0-5 Years	20	35.90	7.00
	6-10 Years	19	36.53	7.03
	Above 11 Years	28	31.88	8.13
	Total	67	34.39	7.70
Factor 2	0-5 Years	20	28.73	5.04
	6-10 Years	19	31.79	5.48
	Above 11 Years	28	29.66	4.56
	Total	67	29.99	5.05
Factor 3	0-5 Years	20	21.90	3.69
	6-10 Years	19	22.47	3.32
	Above 11 Years	28	20.50	3.74
	Total	67	21.48	3.66
Factor 4	0-5 Years	20	12.50	3.69
	6-10 Years	19	14.63	2.87
	Above 11 Years	28	14.00	2.62
	Total	67	13.73	3.11
Factor 5	0-5 Years	20	13.45	1.82
	6-10 Years	19	14.11	1.56
	Above 11 Years	28	12.96	2.06
	Total	67	13.43	1.89
Factor 6	0-5 Years	20	12.38	2.91
	6-10 Years	19	13.63	2.71
	Above 11 Years	28	12.09	2.30
	Total	67	12.61	2.65
Factor 7	0-5 Years	20	9.62	3.62
	6-10 Years	19	10.47	2.86
	Above 11 Years	28	9.96	3.50
	Total	67	10.01	3.33

Note. Factor 1: Learner-centered Activities, Factor 2: Personalizing Instruction, Factor 3: Relating to Experience, Factor 4: Assessing Student Needs, Factor 5: Climate Building, Factor 6: Participation in the Learning Process, Factor 7: Flexibility for Personal Development

*95% CI was used in all the analyses

PALS and Teaching Subject

A 1X3 one-way ANOVA was computed to assess the influence of the teaching subject on teaching style. The results of the one-way ANOVA as shown in Table 17 revealed no significance, F (2, 64) = .48, p = .624. The means and standard deviations are shown in Table 18.

Factor One, Learner-centered Activities and Teaching Subject

A 1X3 one-way ANOVA was conducted to determine whether there was a relationship between factor one and the teaching subject. The results of the one-way ANOVA as presented in Table 17 showed no significance, F (2, 64) = .96, p = .387. The means and standard deviations are reported in Table 18.

Factor Two, Personalizing Instruction and Teaching Subject

A 1X3 one-way ANOVA was performed to determine whether there was a relationship between factor two and the teaching subject. The results of the one-way ANOVA as indicated in Table 17 revealed no significance, F (2, 64) = .79, p = .455. The means and standard deviations are given in Table 18.

Factor Three, Relating to Experience and Teaching Subject

A 1X3 one-way ANOVA was computed to determine whether there was a relationship between factor three and the teaching subject. The results of the one-way ANOVA as shown in Table 17 suggest that there was a significant relationship between factor three, relating to experience, and the teaching subject, F (2, 64) = 3.06, $p < .05$, $\eta 2$ (eta-squared) = 0.09. The strength of the relationship between factor three, relating to the student experience, and the teaching subject was large. A post-hoc analysis using Tukey was conducted to further examine the differences between specific groups in terms of teaching style preference, and it found that

ESL teachers (M = 22.76, SD = 3.06) are slightly more likely to use instruction that relates to the student experience and are, therefore, more student-centered than GED teachers (M = 20.50, SD = 3.68, Tukey HSD, $p < .05$). There were no significant differences in teaching style in GED teachers (M = 20.50, SD = 3.68) and basic education teachers (M = 22.0, SD = 4.65), p = .606) nor between ESL teachers (M = 22.76, SD = 3.06) and basic education teachers (M = 22.0, SD = 4.65), p = .885). The highest mean was reported in ESL teachers, and the lowest mean was reported with basic education teachers. The means and standard deviations are illustrated in Table 18.

Factor Four, Assessing Student Needs and Teaching Subject

A 1X3 one-way ANOVA was conducted to determine whether there was a relationship between factor four and the teaching subject. The results of the one-way ANOVA as indicated in Table 17 revealed that there was almost significance, F (2, 64) = 2.81, p = .067. A post-hoc analysis using Tukey was performed to further examine differences between specific groups in terms of teaching style preference, and the results indicated no significance in assessing student needs by the teaching subject. The means and standard deviations are given in Table 18.

Factor Five, Climate Building and Teaching Subject

A 1X3 one-way ANOVA was computed to determine whether there was a relationship between factor five and teaching subject. The results of the one-way ANOVA as shown in Table 17 suggest that there was a significant relationship between climate building, and the teaching subject, F (2, 64) = 3.00, $p < .05$, $\eta 2 = .09$. The magnitude of the relationship between climate building and teaching subject was moderate, as assessed by eta squared**.** A post-hoc analysis using Tukey was conducted to further examine differences between specific groups in terms of

teaching style preference for factor five, and post hoc results indicated no significance in climate building and the teaching subject. The means and standard deviations are shown in Table 18.

Factor Six, Participation in the Learning Process and Teaching Subject

A one-way ANOVA was conducted to determine whether there was a relationship between factor six and the teaching subject. The results of the one-way ANOVA as shown in Table 17 revealed no significance, F (2, 64) = .41, p = .665, between the teaching subject and participation in the learning process. The means and standard deviations are given in Table 18.

Factor Seven, Flexibility for Personal Development and Teaching Subject

A 1X3 one-way ANOVA was computed to determine whether there was a relationship between factor seven and the teaching subject. The results of one-way ANOVA as shown in Table 17 showed no significance, F (2, 64) = 1.23, p = .299, between teaching subject and flexibility for personal development. The means and standard deviations for teaching subjects are illustrated in Table 18.

Table 17

ANOVA Table for Teaching Subject, PALS, and Seven PALS Factors

Dependent Variables		Sum of Squares	*df*	Mean Square	*F*	Sig.
PALS	Between Groups	209.78	2	104.89	.48	.624
	Within Groups	14,144.13	64	221.00		
	Total	14,353.90	66			
Factor 1	Between Groups	114.39	2	57.19	.96	.387
	Within Groups	3,803.38	64	59.43		
	Total	3,917.77	66			
Factor 2	Between Groups	40.84	2	20.42	.79	.455
	Within Groups	1,640.65	64	25.64		
	Total	1,681.49	66			
Factor 3	Between Groups	77.16	2	38.58	3.06	.054
	Within Groups	807.56	64	12.62		
	Total	884.72	66			
Factor 4	Between Groups	51.82	2	25.91	2.81	.067
	Within Groups	589.34	64	9.21		
	Total	641.16	66			
Factor 5	Between Groups	20.27	2	10.14	3.00	.057
	Within Groups	216.17	64	3.38		
	Total	236.45	66			
Factor 6	Between Groups	5.89	2	2.95	.41	.665
	Within Groups	458.52	64	7.16		
	Total	464.41	66			
Factor 7	Between Groups	27.13	2	13.57	1.23	.299
	Within Groups	706.11	64	11.03		
	Total	733.25	66			

Note. Factor 1: Learner-centered Activities, Factor 2: Personalizing Instruction, Factor 3: Relating to Experience, Factor 4: Assessing Student Needs, Factor 5: Climate Building, Factor 6: Participation in the Learning Process, Factor 7: Flexibility for Personal Development

Table 18

Means and Standard Deviations for Teaching Subject, PALS, and Seven PALS Factors

Dependent Variable	Teaching Subject	N	Mean	SD
PALS	GED	36	136.21	15.28
	ESL	25	136.18	15.32
	Basic Education Skills	6	130.00	8.25
	Total	67	135.64	14.75
Factor 1	GED	36	34.54	6.89
	ESL	25	35.16	7.48
	Basic Education Skills	6	30.33	12.64
	Total	67	34.39	7.70
Factor 2	GED	36	30.68	5.84
	ESL	25	29.02	4.03
	Basic Education Skills	6	29.83	3.25
	Total	67	29.99	5.05
Factor 3	GED	36	20.50	3.68
	ESL	25	22.76	3.06
	Basic Education Skills	6	22.00	4.65
	Total	67	21.48	3.66
Factor 4	GED	36	14.25	2.84
	ESL	25	12.64	3.13
	Basic Education Skills	6	15.17	3.76
	Total	67	13.731	3.12
Factor 5	GED	36	13.17	1.73
	ESL	25	14.08	1.99
	Basic Education Skills	6	12.33	1.75
	Total	67	13.43	1.89
Factor 6	GED	36	12.54	2.60
	ESL	25	12.90	2.90
	Basic Education Skills	6	11.83	1.94
	Total	67	12.61	2.65
Factor 7	GED	36	10.53	3.29
	ESL	25	9.62	3.48
	Basic Education Skills	6	8.50	2.59
	Total	67	10.01	3.33

Note. Factor 1: Learner-centered Activities, Factor 2: Personalizing Instruction, Factor 3: Relating to Experience, Factor 4: Assessing Student Needs, Factor 5: Climate Building, Factor 6: Participation in the Learning Process, Factor 7: Flexibility for Personal Development

There were fewer cases in basic education teachers.

The third research question intended to examine the relationship between PALS, the seven PALS factors, and the demographic factors of gender, levels of education, age, the number of hours participated in professional development in adult education in the past 5 years, years of teaching experience, and the subject taught. Both independent samples *t*-tests and one-way ANOVAs were used in the analysis.

The independent samples *t*-tests were used to determine the relationship between PALS, the seven PALS factors, and the demographic factors of gender and levels of education. The results showed that there was no difference in teaching style preferences between male and female teachers nor in the instructor's level of education.

A one-way ANOVA was used to determine the relationship between PALS, the seven PALS factors, and the demographic factors of age, the number of hours participated in professional development in adult education in the past 5 years, years of teaching experience, and the type of subject taught. The results of the relationship between PALS and the demographic factors identified were not significant except for years of teaching experience in adult education.

The results of the relationship between the seven PALS factors and the demographic factors of age, the number of hours participated in professional development in adult education within 5 years, year of teaching experience, and the subject taught revealed that there was significance in the relationship between age and factor six (participating in the learning process); there was no significance in the relationship between age and other PALS factors. There was no significance in years of teaching experience, the number of hours participated in professional development in adult education within 5 years, and the seven PALS factors. However,

significance was reported in factor three (relating to students' experience) and the teaching subject.

Summary

In this chapter, the analysis of the data approaches was described, and the results of the Analyses were presented. The demographic descriptive statistics are provided along with relevant analysis to address the specific research questions. A total of 100 teachers participated and responded to the study questionnaire, but the analysis was done on 67 completed and usable data. There were more female (83.6%) than male (16.4%) teachers who completed the questionnaire and whose responses were used in the analysis. A majority of the teachers were aged 60 years and above (43.3%). There were more teachers with master's degrees (58.2%), and a higher number had more than 11 years of adult education teaching experience, which constituted 41.8%. of the sample. A majority of the responding teachers had participated in more than 15 hours of professional development in adult education within the last 5 years (59.7%). Of all the responding teachers, 53.7% were GED instructors, and the rest of the sample were ESL and basic education skills teachers. Compared to the overall PALS mean score of 146, the examined adult education teachers' PALS mean score was 135.6, suggesting that adult education teachers tend to use teacher-centered instruction. Based on this score, it is more likely that adult education teachers tend not to adhere to the adult learning principles recommended by adult education theorists. Also, of the seven PALS factors, only three had means values above the norm means. The fact that four of the seven (57%) PALS factors registered mean scores lower than the norm means supports the observation that adult education teachers tend to be teacher-centered.

The results of independent samples *t*-tests showed that there was no difference in teaching style preferences between male and female teachers and on the instructor's levels of education.

The Analysis of Variance (ANOVA) results indicated that the age of the teacher affects how they get their students to participate in the learning process. The age of the teacher influenced neither the teaching style preference (PALS total scores) nor the other six factors of PALS. Also, ANOVA results indicated that a teacher's years of teaching experience influence PALS (total score) but not the seven factors of PALS. While teaching experience showed a teacher-centered style, those with 6-10 years of experience had a significantly greater mean score than those with 11 or more years of teaching experience and closer to those of a student-centered teaching style.

The ANOVA results showed no relationship between PALS total score and teaching subject. However, among the seven PALS factors, a significant relationship with the teaching subject was only observed with Relating to Experience. The teaching subject did not determine whether a teacher adopts a student- or a teacher-centered teaching style. Past student experience influenced a teacher's instruction style, and teachers in GED programs showed lower mean scores compared to those in ESL and basic education skills programs. Similarly, the number of hours spent in adult education professional development programs did not influence teaching style preference. A summary of the results for each of the research questions and the analysis used is reported in Table 19. Finally, in consideration of the literature in adult education, research from previous studies, and the findings from this study, the researcher gives a detailed explanation of the results, links the results to the literature and previous findings, and provides recommendations for practice and future research and conclusions in Chapter 5.

Table 19

A Summary of the Results

Research Questions	Independent Variables	Dependent Variables	Data Analysis	Results
Research Question One		PALS	Descriptive statistics: Means, Standard Deviation, and Frequencies	M = 135.6, SD = 14.7 (n = 49), 73.1%, Teacher-centered (n = 18), 26.9%, Student-centered
Research Question Two		Seven PALS factors	Descriptive statistics: Means, Standard Deviation, and frequencies	Factor 1 M = 34.4, SD = 7.7 Factor 2 M = 30, SD = 5 Factor 3 M = 21.5, SD = 3.4 Factor 4 M = 14.1, SD = 3.1 Factor 5 M = 13.4, SD = 1.9 Factor 6 M = 13.1, SD = 2.7 Factor 7 M = 3.3, SD = 10
Research Question Three	Demographic factors: Gender	PALS and seven PALS factors	Independent samples t-test	No significance
	Levels of education	PALS and seven PALS factors	Independent samples t-test	No significance
	Age	PALS and seven PALS factors	1X4 One-Way ANOVA	Significant for factor 6 and no significance for PALS and other PALS factors
	Professional development hours in adult education	PALS and Seven PALS factors	1X4 One-Way ANOVA	No significance
	Years of teaching experience	PALS and Seven PALS factors	1X4 One-Way ANOVA	Significant for PALS and no significance for Seven PALS factors
	Type of course/ Subject	PALS and Seven PALS seven	1X3 One-Way ANOVA	Significant for factor 3 and not significant for PALS and other PALS factors

Chapter Five: Discussion, Recommendations, and Conclusions

This chapter gives a summary of the study beginning with a restatement of the purpose, followed by a summary of the methodology. A broad description of the results reported in Chapter 4 above is presented. In addition, a discussion of the results, a comparison of these results with previous findings and the literature, study limitations, and recommendations for practice and future research are presented.

The purpose of this study was to examine the teaching style preferences of adult education instructors and the influence of gender, age, professional development, experience in teaching adults, teaching subject, and levels of education on teaching style preferences. The dependent variables were determined by the total scores on the PALS and the total scores of each of the seven PALS factors. The independent variables were the demographic variables of gender, age, educational level, years of teaching experience, professional development, and teaching subject/program.

Research Design

This is a nonexperimental cross-sectional survey design study where a questionnaire was used to collect data. The survey design was chosen because of its advantages, including obtaining data from different groups at one point in time (Fraenkel & Wallen, 2006; Gall, 1996; Gay, Mills, & Airasian, 2009). It can also obtain information about a sample's attitudes beliefs and self-reported behavior (Mitchell, & Jolley, 2013). The method allows data to be collected fast and it is inexpensive (Mitchell, & Jolley, 2013), and therefore, reduces the researcher's time spent in acquiring desired data (Gay, Mills, & Airasian, 2009).

Population and Sample

The target population for this study was adult education instructors in 22 regional programs across the Commonwealth of Virginia who provide educational services to adult learners in different cities and counties. These programs, funded at both federal and state levels, are mandated to implement the Workforce Innovation and Opportunity Act (WIOA), Title II policies. Non-probability sampling was used to draw a sample for this study from the larger teacher population. Six hundred and ninety-seven 697 instructors were contacted where 100 responded to the survey questionnaire, and due to missing data, the usable data was 67 (N = 67). Cochran's (1977) formulas for calculation of the appropriate sample size led to an acceptable sample size based on the return rate. Nonetheless, nonresponse bias was still addressed by comparing the demographic data of the participants to the total population. In comparing the data obtained from the state and the data obtained from this study, most teachers reported having had the highest number of years of experience in adult education (in the state data, most teachers had more than three years of teaching experience, and the data from this study showed that most of the teachers had more than 11 years of teaching experience). Therefore, based on this comparison, there were no substantial differences between participants and non-participants when years of experience in adult education were used to compare the participants and non-participants.

Instrument

A two-part survey was used to collect data and general information from adult education instructors. The first part of the survey was designed by the researcher and asked respondents for demographic data, including gender, age, teaching experiences, the type of course taught, professional development, and level of education. The second part of the survey utilized the

unmodified Principles of Adult Learning Scale (PALS) instrument (Conti, 1983; 1998; 1985). The 44-item is on a six-point Likert-type scale ranging from Always to Never with positive and negative items. The numbers correspond as follows for the positive items: 5—Always, 4—Almost Always, 3—Often, 2—Seldom, 1—Almost Never, 0—Never. For the negative items, the numbers correspond as follows: 0—Always, 1—Almost Always, 2—Often, 3—Seldom, 4—Almost Never, and 5—Never. A neutral value score of 2.5 is assigned to omitted or missed items. The survey can be completed in 10-15 minutes and is self-administered. The items on the instrument ask instructors to indicate the frequency with which they practice the action described in the items. The total scores on PALS range from 0-220; a score ranging between 0-145 is indicative of a teacher-centered style, and a score of 146-220 indicates a style that is more learner-centered. The mean of PALS is 146, and the standard deviation is 20. The total score in PALS can be calculated by adding the value of the response to all items and can be interpreted by relating the obtained score to the norm mean score for the PALS instrument (Conti, 2004). In addition, the overall calculation of total points indicates the dominant (teacher-center or student-centered) teaching style of the respondents. The responses from PALS items can be grouped into seven factors meant to reveal more specific use of the items described.

Research Procedure

After a successful prospectus defense, approval to conduct the study was obtained through the Virginia Commonwealth University Institutional Review Board (IRB). A link to the surveys developed through RedCap was then sent to the program managers' and teachers' listservs for data collection between October and November of 2019. In the email with the link, an introductory message and a detailed description of the study were included, and teachers were informed that participation was voluntary.

Data Analysis

Statistical Package for Social Science (SPSS) version 25.0 was used for data analysis. The research questions were answered in the order in which they appeared. Descriptive statistics were used to answer the first two research questions, and independent samples *t*-tests were used to investigate the relationship between demographic variables and teaching style preferences where only two groups existed. One-way ANOVA tests were used to investigate the relationship between demographic variables and teaching style preference where there were more than two groups in the independent variables.

Results and Explanation

The demographic data revealed that there were 56 (83.6%) female and 11 (16.4%) male teachers who participated in the study. Twenty-nine of the teachers (43.3%) were aged 60 and above. Thirty-nine teachers had master's degrees, (58.2%), and 28 teachers (41.8%) had more than 11 years of teaching experience with adults. Forty teachers who participated (59.7%) had gone through more than 15 hours of professional development in adult education within the last 5 years, and 36 (53.7%) of them were GED instructors.

The first research question aimed to identify the teaching style preferences of adult education instructors as determined by the mean scores on the Principles of Adult Learning Scale (PALS). The results revealed that 49 (73.1%) of the respondents preferred teacher-centered instructional practice. According to the norm scores originally established by Conti (2004), scores above 146 indicate a tendency toward learner-centered instruction while scores below 146 indicate support of a teacher-centered instructional style. The overall PALS mean score of this study was 135.64, which was below the norm PALS score of 146, indicating that adult education teachers prefer teacher-centered instructional approaches.

The second research question aimed to identify the teaching styles of adult education instructors as measured by the seven factors in PALS. The total scores for PALS can be subdivided into seven factors, each with its score. The seven factors are intended to reveal more specific instructional style inclinations of the instructor. When the scores for each of the seven factors from this study were compared to the norm scores (see Table 11), only three factors Relating to Experience, (factor three), Assessing Student Needs (factor four), and Participation in the Learning Process (factor six) were above the norm mean. Teachers with mean scores above the norm practiced activities related to each of the factors. For example, teachers in this study reported a mean score above the norm for factor three. This group of teachers uses practices that relate to student experience in their classroom and will take into account learners' prior experiences as they impart new experiences to the student. In this case, the teacher is practicing a student-centered approach. The reported score above the norm means in factor four, Assessing Student Needs, shows that teachers provide informal counseling to their students and take into account the learner's goals. These teachers help their students to see the gaps between their goals and their current performance and to develop both short- and long-term objectives. The high means score for factor six, Participation in the Learning Process, means that adult education teachers provide a chance for learners to participate in developing the criteria for evaluating their performance in class. The teachers arrange the classroom in a way where students find it easy to communicate and can participate in making decisions about the topics to be covered in class.

Research question three aimed to identify the relationship between teaching style and the demographic factors of years of teaching experience, age, gender, educational level achieved, type of course taught, and professional development in adult education. For this question, both independent samples *t*-tests and one-way ANOVA were used to analyze the data. Independent

samples *t*-tests results between PALS and the seven PALS factors by gender and levels of education revealed no significant differences. A one-way ANOVA for hours spent in adult education professional development activities and PALS or any of the seven PALS factors found no significant differences between the means. These results indicate that teaching style preferences are not dependent on instructors' gender, their levels of education, or the number of hours they have participated in professional development programs in adult education.

The results of the one-way ANOVA showed no relationship between age and PALS. However, a one-way ANOVA of age and the seven PALS factors revealed that participation in the learning process was influenced by the age of the instructor. The teaching style of teachers between ages 41 and 50 significantly differed from teachers older than 60. This group of teachers between ages 41 and 50 preferred a teaching style that allowed for student participation in the learning process. These mean differences had a large effect size, signifying practical significance. When checking the mean score of these four categories (31-40 years, 41-50 years, 51-60 years, 60 and above years), younger teachers (31-40 years) scored low on this factor (participation in the learning process), followed by teachers who are older than 60. This result shows that younger and older teachers do not value the inclusion of their students in the learning process and therefore may be less student-centered compared to those in their forties.

The results of the one-way ANOVA of PALS and years of teaching experience showed significant differences. Teachers with 6-10 years of teaching experience with adults differed significantly from teachers who had teaching experience of 11 years and above. The effect size aa measured by eta squared was large indicating practical significance in the teaching style preference and experience in teaching adults. The mean scores of the three years of teaching experience categories decreased in the following order: 6-10 years, then 0-5 years, and finally 11

years and above. Teachers with more experience teaching adults were inclined to use teacher-centered than student-centered teaching approaches. These differences were surprising because of the nonlinear results where linear results were expected. It is expected that the longer the teachers teach, the higher their total score is (higher scores indicate that their teaching style moves more towards student-centeredness). On the other hand, the results from this study could be linked to the fact that teachers may still be using the teaching style they were taught 30-40 years ago as revealed by Schaefer and Zygmont (2003), a time when most teachings used the traditional teacher-centered approach method (Brown, 2003; Gilakjani, 2012). Also, it is most likely that these teachers are not exposed to the adult learning theories that have been recommended for use in the recent past. However, the results of the one-way ANOVA for the seven PALS factors and years of teaching experience were not significant. This indicates that years of teaching experience do not result in an instructor adopting a specific teaching style that closely matches one of the seven PALS factors.

The relationship between PALS and the teaching subject was not significant. Therefore, an instructors' preference for a teacher- or student-centered teaching style was not influenced by the subject taught. However, among the seven PALS factors, only factor three Relating to Experience was influenced by the teaching subject. English as a Second Language teachers' mean score for this factor differed significantly than that of GED teachers, and this mean difference had a large effect size signifying practical significance. According to the survey data, ESL teachers tended to adopt instructional practices that relate to student experience when compared to GED instructors.

Discussion and Relating Results to the Literature

Internal consistency reliability for the PALS was conducted based on the inter-item correlation. All 44 items on the PALS were included to determine the extent to which the items were related to each other. The test resulted in accepted alpha levels of $\alpha = .81$, which suggests that the teacher-centered and student-centered components of the PALS instrument were sufficiently distinct from each other. The reliability reported here is within the accepted threshold and is comparable to $\alpha = 0.84$ (Dupin-Bryant, 2004), $\alpha = 0.75$ (Barrett, Bower, & Donovan, 2007), and $\alpha = 0.697$ (Curran, 2014). These past studies with their reported Cronbach alphas found PALS as a reliable instrument in identifying the teaching style preferences of adult education instructors. Therefore, the result of the reported internal consistency analysis supports the use of PALS to analyze the research data collected in this study.

Few studies have reported the results of the seven factors of PALS; thus, there exist limited reports on their computed internal consistencies. For example, McCaskey (2009) computed the internal consistency of the seven factors and found that a few of the factors met the acceptable Cronbach alpha threshold while others did not. Cronbach alpha for factor three, Relating to Experience, was .79, and factor four, Assessing Student Needs, was .73. The other five factors, factor one, Learner-centered Activities ($\alpha = .65$), factor two, Personalizing Instruction ($\alpha = .51$), factor five, Climate Building ($\alpha = .52$), factor six, Participation in the Learning Process ($\alpha = .58$), and factor seven, Flexibility for Personal Development ($\alpha = .50$) fell below the common threshold for acceptable consistency (McCaskey, 2009, p. 63). Like for McCaskey, Cronbach alpha values for some of the factors in this study fell below the accepted threshold while others were above it. The alpha for two of the subscales (factor one, Learner-centered Activities ($\alpha = .76$), and factor four, Assessing Student Needs ($\alpha = .79$) surpassed the

commonly accepted consistency threshold of .70. The alpha for five of the subscales, factor two, Personalizing Instruction (α = .22), factor three, Relating to Experience (α = .61), factor five, Climate Building (α = .49), factor six, Participation in the Learning Process (α = .45), and factor seven, Flexibility for Personal Development (α = .57) fell below the common threshold for acceptable consistency.

As supported by adult learning theorists and expounded by Knowles (1990) in the andragogical assumptions, adult learners need to know why they need to learn. They come to the learning environment with vast experience, tend to be self-directed, are more problem-oriented, have intrinsic motivation, and their readiness to learn depends on the opportunity to move from one developmental stage to the next. Because of vast experience and problem-driven learning desires, adult learners expect a more learner-centered instructional style in their learning environment. The results from this study indicated that a majority of the teachers (73.1%) scored below the norm PALS mean score of 146, and 26.9% of them scored above 146, indicating that the teachers were inclined to teacher-centered approaches of teaching.

The findings of this study contradict what adult theorists support because more teachers scored below the norm mean of 146, which is an indication that they mostly used teacher-centered instruction as opposed to the student-centered approach. However, while the results from this study contradict the assumptions in adult theory literature, they concur with almost all other studies that used PALS. Studies like the ones conducted by Dupin-Bryant (2004), Barrett, Bower, and Donovan (2007), and Curran (2014) reported mean scores that were below the norm mean of 146, indicating that the teaching style preferences of teachers in these studies, too, were teacher-centered. Contrary to a majority of studies scoring below 146, Ahmed (2013) in his study reported a mean score above the PALS norm score of 146.

The result of this study is in agreement with others. For example, Kovačević and Akbarov (2016) found a mean score of 115 among university professors. They concluded that learner-centered instruction is not widely spread among university professors and that requirements for proper use of the learner-centered teaching style are not easy to meet. Barrett, Bower, and Donovan (2007) in a study examining the teaching styles of online instructors in a group of colleges found that 115 (39.4%) of the respondents scored below the norm means, a strong indication of teacher-centered instructional styles. They found that only 7 (2.4%) of the respondents exhibited a very strong commitment to the learner-centered instructional approach.

Furthermore, Dupin-Bryant (2004) reported that there exists a discrepancy between what theory suggests and actual instructors' teaching styles when he found a mean score of 128 among interactive television instructors. McCoy (2006) found police instructors to have a mean score of 128, and numerous studies in the past (Clark & Seevers, 1993; Curran, 2014; Liu, Qiao, & Liu, 2006; Schaefer & Zygmont, 2003; Schell & Spoon, 1998) have reported similar results. It is important to note that as indicated earlier in various studies (Barrett, Bower, & Donovan, 2007; Kovačević & Akbarov, 2016; McCoy, 2006), despite the positive results attributed to a student-centered approach, teachers are inclined towards the use of a teacher-centered instructional approach. It is reported that instructors are comfortable teaching as was done 30 to 40 years ago (Schaefer & Zygmont, 2003). They believe that their academic success was a result of a teacher-centered environment that relied heavily on lectures (Brown, 2003; Gilakjani, 2012) and that this method should still work. Additionally, lack of skills in adult learning theory, particularly so in instructors with little understanding of adult learning principles, make them teach as they were taught in the past. The above scenario is supported by findings which indicate that instructors knowledgeable in adult education theory and principles and who are experienced with student-

centered learning and constructivism are more likely to use a student-centered approach (Brown, 2003).

Further examination of the PALS factors, which was the purpose for research question two, found some factors to score above and others below the norm mean. Conti (1998) developed the seven PALS factors based on adult learning literature as detailed in previous chapters. Factor three (Relating to Experience), factor four (Assessing Student Needs), and factor six (Participation in the Learning Process) all scored above the norm mean. All the remaining five factors scored below the norm mean. Similar results were found by Ozturk (2011), whose study found that only two factors (factor five, Climate Building, and factor six, Participation in the Learning Process) scored above the norm mean. The findings from Ozturk's study concluded that the participants had a balanced teaching style preference based on the seven PALS factors and that they were neither teacher-centered nor learner-centered. The finding contradicts that of McCaskey (2009) who found that all of the seven PALS factors scored below the norm means, indicating strong teacher centeredness in instructional style.

Even though the mean scores for the three factors (factor three, four, and six) in this study were above the norm mean, they were just slightly above it. Because these factors scored just slightly above the norm mean indicates that respondents in this study do not prefer solid student-centered instruction but rather a possibly mixed method of student- and teacher-centered approaches with a strong inclination towards teacher-centered. This was unlike the other factors that scored further below the norm mean, indicating a more solid teacher-centered approach.

The data gathered from this study showed that more female teachers $n = 56$ (83.6%) responded to the survey than male teachers $n = 11$ (16.4%). Independent samples *t*-tests revealed no significant relationship between gender and the education level of the teacher. A teacher's

choice of instructional style was not influenced by their gender, and a given style could be adopted by both male and female instructors. While results similar to those found above are reported by Ahmed (2013), Kovačević and Akbarov (2016), and Ozturk (2011), contradicting results indicating that female teachers were student-centered and male teachers were teacher-centered have been reported by Starbuck (2003) and Roger (2009). While female teachers were reported to use activities that incorporate student participation and that allow students to be self-directed and to take charge of their learning, the male faculty tended to control class activities and determine learning of students. Additionally, the levels of education did not influence the choice of teaching style, and instructors with a bachelor's or a master's degree could potentially adopt a similar teaching style. However, Ozturk (2011) found contradicting results with regards to Personalizing Instruction. He reported that police instructors with bachelor's degrees had a lower mean score compared to those with a master's degree and that those with a master's degree tend to use a student-centered approach of teaching.

A one-way ANOVA was used to determine the relationship between PALS and the seven PALS factors and demographic data of hours participated in professional development, age, years of teaching experience, and teaching subject. First, even though the majority of the teachers $n = 40$ (59.7%) who responded in this study had participated in more than 15 hours of professional development in adult education within 5 years, participation in professional development related to adult education did not influence teachers' choice of teaching style. The results from this study contradict Sharvashidze and Bryant's (2011) and Curran's (2014) studies that found that the number of hours participated in professional development influence teaching style preferences. They reported that instructors who participate in professional development activities tend to score high on activities related to student-centered approaches.

Second, the ANOVA results for age and PALS, and age and PALS factors showed that the PALS total score was not affected by the age of the instructors. However, the age of the instructor influenced a teacher's choice to allow student participation in the learning process (factor six). A majority of the teachers $n = 29$ (43.3%) in this study were aged 60 years old and above, and this group scored low on factor six. Therefore, their teaching style did not include allowing student participation in the learning process. However, teachers aged 41-50 years scored an average mean greater than the norm and therefore tended to include student participation in the learning process. Also, this mean difference for teachers ages 41-50 and 60 years and above was large and had practical significance. The finding of this study showing age influencing an instructors' tendency to allow student participation in the learning process contradicted the results of previous research studies that indicated no influence (Ahmed, 2013; Ozturk, 2011).

Third, a between-subjects test for years of teaching experience with adults, PALS, and the seven PALS factors found significant results in PALS total scores and non-significant results in the seven factors. Teachers who have between 6 and 10 years of experience teaching adults differed significantly from teachers who have above 11 years of experience in teaching. The mean differences had a large effect size, indicating practical significance. Teachers with 6-10 years of experience scored above the norm mean and therefore used student-centered instruction. Those with more than 11 years of experience scored lower than the norm means and were more likely to be teacher-centered in their teaching style. This result contradicts those of Liu, Qiao, and Liu (2006) and Ahmed (2013) who found the length of teaching to be the best predictor of higher scores on PALS. They suggested that the more years of teaching experience an instructor had, the more likely they would be to shift to the use of a student-centered teaching approach. In

this study, even though a majority of the teachers n = 28 (41.8%) had above 11 years of teaching experience with adults, the findings on the influence of teaching experience contradict those reported by Ahmed (2013) and Liu, Qiao, and Liu (2006).

Fourth, the ANOVA test for teaching subject and teaching style preferences found significance for PALS factor three, Relating to Experience. No significance was found with PALS total scores and the other factors. Although factors four and five were close to significance, Tukey's test did not indicate where the significant mean differences occurred. For PALS factor three, ESL teachers differed significantly from GED teachers in their teaching style preferences. English as Second Language teachers scored a high mean, and GED teachers scored a lower mean than the norm, indicating that ESL teachers tend to use teaching practices that relate to the student experience than the GED teachers. As reported by Conti (2004), scoring high above the norm mean in each of the factors means that a teacher uses the methods described in each of the factors. Since ESL teachers had a mean score that was above the norm mean, it indicates that unlike GED teachers, ESL teachers take into account a learner's prior experience and try to make the learner relate new learning experiences to the prior ones. They are more likely to stimulate learner's independence in the learning process and to organize learning tasks in the way they could be encountered in everyday life, hence making their student connect what they learn to their real-life experience (Conti, 2004). The mean difference had a medium effect size, indicating some practical significance.

The results on teaching subject and teaching style preference concur with the findings by Conti (1984). In his study of teachers in basic adult education programs, he found a teacher-centered approach to be most effective in the preparatory courses for the high school equivalency examination (GED). The opposite was true with ESL classes where student-centered instruction

was found most effective. However, Liu, Qiao, and Liu (2006) reported contradicting results and found that language instructors demonstrated a teacher-centered teaching style. This finding was contrary to their thinking that language instructors position themselves as facilitators rather than knowledge providers.

Limitations

This study, like other research studies on adult education, has some limitations. In general, the design of the study, the instrument used, the perceptions of the participants, sample size, the reliability coefficient alpha, statistical analyses, and some other unexpected factors might have affected the accuracy of this study. The outcomes of the study, therefore, should be evaluated considering these limitations:

1. The non-probability procedure used in the study may limit the extent to which the results of the study can be generalized to the larger population. This is because this kind of sampling is less representative of the larger population, and results may depend on the unique characteristics of the sample, making it difficult to generalize to other subjects (McMillan, 2000).
2. This study was conducted with adult education teachers in the Commonwealth of Virginia, and, therefore, the reported results may not be generalized to the wider population in the United States.
3. The sample size of 67 used for this study suggests that findings are not conclusive. The low response rate,(sample size) led to small numbers in some of the group categories, and therefore, the mean differences for these groups may be biased because of the low number of respondents represented in the groups.

4. The response rate of this study was small, and even though attempts were made to address non-response, over 80% of the population's perceptions remained unexplored.
5. Low alpha was reported in some of the seven PALS factors, which may have impacted the ANOVA results for the factors with a low-reliability coefficient.
6. Even though the items on the PALS instrument have been tested for social desirability and clarity of the items' interpretations (Conti, 1982), PALS is a self-administered questionnaire. As such, the responses could have been compromised with issues of social desirability (Mitchell & Jolley, 2013).
7. The number of items (44) in the survey instrument (PALS) might have been high, leading to fatigue or boredom. Therefore, some respondents did not respond to the survey. Perhaps having the survey appear first before the demographic questions could have improved the response rate.
8. One of the biggest challenges in data collection is the response rate, especially for researchers who are outsiders. It is possible that the response rate could have been better if the researcher was collecting data as an insider.

Recommendations for Future Study

1. Based on the limitations of this study, the response rate was small given the large number (population) of adult education teachers in the Commonwealth of Virginia. Future studies should consider ways to improve the response rate. A high response rate means a large sample size which may improve the conclusion of the results.
2. The results from this study contradict those from previous studies, and therefore, there is a need for further investigation. There could be other factors that influence the teaching style preferences of the teachers other than those identified and used in this study.

3. I recommend exploring the influence of teaching style on student achievement with the same population in the future to link the type of teaching style to the students' performance.
4. Students' perceptions of their teachers' style of teaching in comparison to the teachers' perception of their teaching styles could also be assessed and compared in future studies.
5. A mixed method design is recommended for future studies to follow up on the quantitative responses to explore the reasons that led to the choice of a specific teaching style.
6. Multilevel modeling is recommended for future studies with students, teachers, and programs to examine the contribution of the location of the program in determining a teaching style.
7. For further research in adult education, particularly on the use of andragogical theory, principles, and assumptions, I recommend using Holton III, Wilson, and Bates' (2009) recently developed instrument called *The Andragogical Practices Inventory* because it measures the andragogical principles directly unlike PALS.

Recommendation for Practice

As described by Conti (2004), in each of the PALS factors, a low score signifies the use of a teacher-centered method. A recommendation for practice may include improving on those methods to reflect the student-centered approach. For example, the scores in some of the subscales for PALS (factor one, Learner-centered Activities, factor two, Personalizing Instructions, factor five, Climate Building and factor seven, Flexibility for Personal Development) were below the norm mean which indicates that the use of these approaches described in these factors by the teachers were low (scoring low indicates that their teaching

style is inclined towards teacher-centered). Therefore, to improve performance, teachers might need to find ways to evaluate students' performance instead of using formal tests and outside standards as described in the Learner-centered Activities, factor one. They might need to be flexible, adjusting course objectives throughout the semester to meet the specific needs of the learners, and lecturing as a method of teaching may not always be the best method for presenting subject materials as described in factor two, Personalizing Instruction. Additionally, teachers should find ways of creating a friendly and informal environment where students are free to share their views without being afraid as described in factor five, Climate Building, and find ways of using the collaborative mode of teaching by involving and allowing learners to determine their learning objectives in the learning process which is the aim of factor seven, Flexibility for Personal Development.

Moreover, teaching subject was influential in the kind of teaching style preferred by instructors. General Educational Development (GED)and ESL teachers differed significantly in their teaching style preferences. These differences indicated practical significance meaning that they could be used to improve instructional practices. Teachers could utilize teaching practices that best fit the learning objectives of their students. For example, by knowing that a student-centered approach is effective in teaching students in ESL classes, teachers can utilize instructional methods that relate to their experiences and are relevant to their learning for improved learning outcomes.

Exposure to student-centered teaching methods may also be an item to consider for professional development. Research indicates that when passive teaching is used, students do not learn well. This approach is the main disadvantage of the teacher-centered approach. A passive environment does not develop critical thinking, which is an essential skill for students. Changes

need to be made so that teachers adopt a more learner-centered approach to teaching (McCaskey & Crowder, 2015). Furthermore, research theories support the use of methods, activities, and strategies associated with the learner-centered teaching style. This approach of teaching is considered as effective in improving participation, students' motivation, and final achievements in all kinds of learning processes (Liu, Qiao, & Liu, 2006).

Conclusion

The study aimed to examine the teaching style preferences of adult education instructors and the influence of instructors' gender, age, professional development, experience in teaching adults, levels of education, and the teaching subject. This study found adult education teachers who participated and responded to the survey used both teacher and student-centered approach but were strongly inclined to teacher-centered in their instructional practices as assessed by the PALS total scores. In addition, the results of the seven PALS factors revealed a blended use of both teacher and student-centered approaches. Moreover, significance was found for instructors' age and participation in the learning process; PALS total score and years of teaching experience; teaching subject and factor three (Relating to Experience). The reported significance of these factors indicates the extent to which these factors influence the adoption or use of a certain teaching style. The age of the instructor can influence the extent to which instructional methods such as student Participation in the Learning Process are used by the teacher. In addition, years of teaching experience can influence whether a teacher utilizes student-centered or teacher-centered instructional practices. Finally, the teaching subject can influence the instructional approach used, and based on this study, there was a difference in ways in which GED and ESL teachers used instructional practices that related to students' experiences. These factors may be used to assist in decision making on choosing specific approaches to teach adults in a particular

subject or course. However, the study did not find significance in gender, levels of education, and the number of hours participated in professional development within 5 years with both PALS and the seven PALS factors. The non-significant results from this study does not mean that significance did not exist, nor that these factors did not influence the teaching style. It means that significance was not found in this study and may or may not be related to limitations unique to this specific study. One such limitation is the sample size that may have reduced the statistical power.

The results from this study were in agreement with other previous studies that reported a teacher-centered style as the dominant style of teaching (Barrett, Bower, & Donovan, 2007; Curran, 2014; Dupin-Bryant, 2004). Nonetheless, the ANOVA results revealed practical significance among some of the factors that influence the choice of instructional approach. These could be leveraged to develop targeted instructional materials that are inclusive of the students' learning objectives and considerate of the students' needs that may have a greater return on student learning.

Knowles' principles of andragogy were founded based on the assumptions or the characteristics of the adult learner, all of which centered on understanding the needs and the interests of the learner. Adult students need to know why they are engaged in a learning activity. Therefore, it becomes the responsibility of the teacher to provide an explicit explanation of the importance of the training and the individual learning activity and how it is relevant to learners' personal lives or work. Additionally, Individuals have different ways of learning and understanding individual learning preferences provide an avenue for the teacher to best communicate with their learners. The teacher can provide relevant learning activities and materials that fit the learning preferences of the individual learner. Adult learners come with a lot

of experience, recognizing, and respecting their knowledge creates a learning atmosphere that is comfortable and leads to productive learning. Acknowledging the experience that learners bring could be done by asking participants to share stories, using case studies and problem-solving exercises. Finally, research have shown that using a warm-up activity at the beginning, can engage adult learners and increase their participation.

In conclusion, teaching style remains an important factor that determines learning outcomes, regardless of the conflicting results obtained in different studies, including the current study. The literature on adult education offers a lot to be learned in the teaching and learning of adults. Despite the available literature in the field of adult education proposing a student-centered approach as the preferred method of teaching, the findings of this study and others revealed teacher-centered approach as the dominant teaching style and points to a disconnect between theory and practice. Moving forward, a lot remains to be done to fill the gap and to expand the knowledge base and the application of andragogical principles and to facilitate a paradigm shift from teacher-centered to student-centered teaching approaches.

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APPENDIX A

Demographic Survey

About you
The following information will help better understand the information you provide

1. Gender
    - Male
    - Female
    - Other
2. Age
    - 20-30 years
    - 31-40 years
    - 41-50 years
    - 51-60 years
    - Above 60 years
3. Educational Level
    - Associate degree
    - Bachelor's degree
    - Master's degree
    - Doctorate degree
    - Other

4. Years of Teaching Experience with Adults
    - 0-1 years

- 2-5 years
- 6-10 years
- Above 11 years

5. Professional Development Hours in Adult Education within 5 years
    - 0 hours
    - 1-5- hours
    - 6-10 hours
    - 11-15 hours
    - More than 15 hours

6. Teaching Subject/program
    - GED
    - ESL
    - Basic Education literacy Skills

APEENDIX B

Principles of Adult Learning Scale

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. On your answer sheet, circle 0 if you always do the event; circle number 1 if you almost always do the event; circle number 2 if you often do the event; circle number 3 if you seldom do the event; circle number 4 if you almost never do the event; and circle number 5 if you never do the event. If the item **does not apply** to you, circle number 5 for never.

Always	Almost Always	Often	Seldom	Almost Never	Never
0	1	2	3	4	5

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

23. I have individual conferences to help students identify their educational needs.
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.
25. I help my students develop short-range as well as long-range objectives.
26. I maintain a well-disciplined classroom to reduce interferences to learning.
27. I avoid discussion of controversial subjects that involve value judgements.
28. I allow my students to take periodic breaks during the class.
29. I use methods that foster quiet, productive, deskwork.
30. I use tests as my chief method of evaluating students.
31. I plan activities that will encourage each student's growth from dependence on others to greater independence.
32. I gear my instructional objectives to match the individual abilities and needs of the students.
33. I avoid issues that relate to the student's concept of himself/herself.
34. I encourage my students to ask questions about the nature of their society.
35. I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.
36. I have my students identify their own problems that need to be solved.
37. I give all students in my class the same assignment on a given topic.
38. I use materials that were originally designed for students in elementary and secondary schools.
39. I organize adult learning episodes according to the problems that my students encounter in everyday life.
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.
41. I encourage competition among my students.
42. I use different materials with different students.
43. I help students relate new learning to their prior experiences.
44. I teach units about problems of everyday living.

APPENDIX C

Email and Recruitment Script

Dear Adult Education Teachers,

I am a doctoral student at Virginia Commonwealth University. I am writing to you to request your participation in my dissertation research project. The purpose of my study is to identify the type of teaching style preferences. I am interested in knowing the type of teaching approach you prefer as a teacher in providing instruction to your students. The questions pertaining to the specific activities employed will be provided in a questionnaire.

You have been invited to participate in this research because of your role as an adult education teacher in Virginia's adult education programs. Your participation is voluntary. Your responses will be anonymous and will remain completely confidential. Information will only be reported as group data with no identifying information. Responses to all questions are important for the ability to answer the research questions of this study; therefore, all questions are considered required from a progress perspective. There are no risks associated with this survey and you may choose to stop or not participate at any time and for any reason without penalty. The total time to complete the survey should be approximately 10-15 minutes.

Your participation in this study is sincerely appreciated. If you have questions before or after participating, you may contact me at the number or email provided below. Thank you, in advance, for your time and consideration.

Sincerely,

Beatrice Lele

Doctoral Student
Virginia Commonwealth University
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[redacted]

APPENDIX D

Permission to use PALS

Note: Dr. Gary J. Conti hereby grants permission for practioners and researchers to reproduce and use the Principles of Adult Learning Scale in their work.

Vita

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EDUCATION

2020 Ph.D. in Education
Virginia Commonwealth University, Richmond Virginia
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Dissertation: *Analysis of Teaching Styles, Adult Learning Theories, and Factors Influencing Teaching Style Preferences in Adult Education Instructors: Implication for Practice*

2013 Master of Social Work and Certificate in Non-Profit Management
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2008 B.A. in Environmental Studies and Community Development
Kenyatta University, Nairobi, Kenya

WORK EXPERIENCE

2017-2020 *Graduate Research Assistant School of Education Department of Teaching and Learning*
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2014-2016 *Graduate Teaching Assistant*
University of Georgia Athens, Georgia

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Non-Refereed Papers Published

Lele, B. C. (2018). Supporting diversity & inclusion at the READ Center. *Progress, 28*(2)8-10. Virginia Adult Learning Resource Center

Lele, B. C. & Major, H. (2018). Teaching with technology at REEP. *Progress, 28*(3)8-11. Virginia Adult Learning Resource Center

Professional Conference Presentation and Poster Presentation

Lele, B. C. (2020, April). *Family Perception, Levels of US Acculturation and School Contextual Effects on Achievement of Second-Generation Immigrants: Multi-Level Modeling.* Accepted poster session for the 2020 VCU Graduate Student Association Graduate Research Symposium.

Lele, B. C. (2018). *Workforce development in Virginia: An analysis of Plugged-In VA.* Presented at American Association of Adult and Continuing Education (AAACE)-with Dr. Robin Hurst and Dr. Kathleen Rolander. Myrtle Beach, South Carolina.

Lele, B. C. (2017). *Researcher practitioner partnerships: Leveraging research-based practices for educational improvement*-with Joan Huebner and Rachel. Presented at Virginia Association for Adult and Continuing Education (VAACE) Fredericksburg, VA.

GRANTS AND AWARDS

Outstanding Master of Social Work Concentration Student of the year 2012-2013

(November 2018). VCU School of Education Travel Grant, American Association of Adult and Continuing Education Annual Conference ($400)