1-1-2009

Andragogy: Does one size fit all? A study to determine the applicability of andragogical principles to adult learners of all ages

Wendy Conaway
Walden University

ABSTRACT

Andragogy: Does One Size Fit All? A Study to Determine the Applicability of Andragogical Principles to Adult Learners of All Ages

by

Wendy Conaway

M.A., Our Lady of the Lake University, 2003
B.A., University of Houston, 1979

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy
Walden University

Walden University
August, 2009

Walden University

COLLEGE OF SOCIAL AND BEHAVIORAL SCIENCES

This is to certify that the doctoral dissertation by

Wendy Conaway

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Kimberly Rynearson, Committee Chairperson, Psychology Faculty
Dr. Sandra Harris, Committee Member, Psychology Faculty
Dr. John Deaton, Committee Member, Psychology Faculty
Dr. Elisha Galaif, School Representative, Psychology Faculty

Chief Academic Officer

Denise DeZolt, Ph.D.

Walden University
2009

ABSTRACT

According to Knowles's theory of andragogy, the principles of adult learning are the need to know, self-directedness, the role of experience, intrinsic motivation, and readiness to learn. Whereas references in the andragogical literature have assumed that the principles uniformly apply to adults of all ages, differences between adult age groups may influence the effectiveness of the principles on adult learning. Therefore, the purpose of this study was to investigate which adult age group was most accepting of the principles so that more effective teaching may occur. Three adult age groups, emerging adults (18-25), young adults (26-39), and mature adults (40-59) were studied, guided by three research questions. The first two questions addressed the degree of acceptance of andragogical principles and student satisfaction by the three age groups, and the third addressed the degree to which age and acceptance of andragogical principles predicted student course satisfaction. Using a cross-sectional, quantitative design, a convenience sample of 59 college students completed an electronic, web-based, Likert-scale survey. Multivariate analysis of variance, analysis of variance, and multiple regression analyses examined the relationships between the three age groups, andragogical principles, and student course satisfaction. Although there was no difference between the age groups and the acceptance of the andragogical principles or student course satisfaction, age combined with acceptance of andragogical principles was predictive of student course satisfaction. The social change implications are that educators should continue to implement the current principles across all adult age groups when designing learning environments and opportunities to improve the quality of educational instruction for one of the fastest growing student populations, the adult learner.

Andragogy: Does One Size Fit All? A Study to Determine the Applicability of Andragogical Principles to Adult Learners of All Ages

by

Wendy Conaway

M.A., Our Lady of the Lake University, 2003
B.A., University of Houston, 1979

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy
College of Behavioral Sciences

Walden University
August, 2009

INFORMATION TO USERS

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleed-through, substandard margins, and improper alignment can adversely affect reproduction.
In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

DEDICATION

I have several people to whom I dedicate this work of love. First and foremost to my loving parents, Irving and Lilyan (Bootsie) Feld, whose unconditional love, confidence, and pride kept me going until the last page was written. How could I disappoint their only chance at having "our daughter, the doctor"? While he is no longer with us, I know my Dad will be with me in spirit and in love, and will be "kvelling" from above as I walk to receive my diploma.

To my awesome, wonderfully supportive sons, Jason and Jeremy, for their love and understanding when coursework, research, and writing took over my life for a few years. I hope you realize that even though my nose was buried deep in books and my laptop was overheating, my heart, soul, and 'mommy radar' were constantly with you.

Finally, to my loving husband Steve, whose patience, love, and ability to help me keep things in perspective kept me going through the final days of the dissertation process. It was his continuous support, understanding, and confidence in me that truly inspired me to believe in myself enough to continue the journey to achieve this lifelong goal. Thank you all, the most important people in my life, for believing in me, supporting me, and loving me so unconditionally. You helped turn my dream into a reality, and for that I will be eternally grateful. I love you all so much.

ACKNOWLEDGMENTS

There are several people I would like to thank who inspired me to achieve this goal. First, I would like to thank Dr. Kimberly Rynearson, who mentored me long before the dissertation process began. It was in her class that I became enlightened and fascinated with the topic of andragogy, and enamored by her teaching style, professionalism, and genuine desire to help her students succeed. Her confidence in me never wavered, and for that I will always be grateful. Next, I would like to thank Dr. John Deaton, who kept encouraging me through Statistics I and beyond, and Dr. Sandra Harris for helping me see the 'statistical light' at the end of the tunnel. I would also like to acknowledge Ms. Nadine Fidler, who was the first person to encourage me to go to graduate school when she recognized the potential I kept deep inside. Finally, I send special unspoken thank-you's to my late aunts Mamie and Anna Ray, who loved me so completely and unconditionally, and would be so proud of me right now.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1:

INTRODUCTION TO THE STUDY

Preface

While teaching general and life span psychology courses to adult learners of varying ages at the local community college, it became apparent that differences existed between younger adults and more mature adults with regard to processing, evaluating, and synthesizing information provided in the classroom setting. For example, the more mature the learner, the more she or he applied his or her own experiences to the learning to enhance understanding and make the lesson meaningful. In addition, younger learners appeared to be more externally motivated and less self-directed than the more mature learners. Contemplation of these observations led to thoughts about the andragogical principles conceptualized by Malcolm Knowles (1984). This piqued the curiosity of this researcher about the universality of his assumptions, and the idea for this research study was conceived: to determine at approximately which age the transformation from pedagogy to andragogy occurs.

Introduction

In the Middle Ages, the Church introduced the concept of organized education to prepare young males to become priests (Knowles, Holton III, & Swanson, 1998). Because the focus was on educating children, the teachers in the monastic schools developed a methodology that was oriented to a child's level of cognition, style of learning, and characteristics (Forrest III & Peterson, 2006). This instructional methodology became known as *pedagogy,* which was derived from the two Greek words

paid and *agogus,* which, roughly translated, mean "child" and "leader of" (Ozuah, 2005). Pedagogy remained the primary method of instruction for the next several centuries, even during the Renaissance era, when education began its slow transition from religious to more secular venues (Cullen, 1999). In the late 1800s and early 1900s, when public school systems began to proliferate quickly, pedagogy continued to be the methodology of choice because there was no other model from which to choose (Ozuah, 2005).

Although children have been the primary educational audience, adult students have existed for centuries as well. Ancient philosophers such as Cicero, Socrates, and Plato all had adults as their pupils (Cullen, 1999). Because pedagogy was the only known instructional model, adult students were also told what, how, and when to learn, and that the instructor was central to the process (Cullen, 1999).

The pedagogical method of teaching both adults and children remained unchallenged until the late 19th and early 20th centuries when workers, faced with economic and political pressure to enhance their opportunities through education and learning, became increasingly dissatisfied with the quality and type of educational practices found in schools at the time (Savicevic, 1991). Though the formation of the World Association for Adult Education in 1919 inspired the strong beginning of a global adult education movement (Savicevic, 1991), focus in the area of adult education waned for the next four decades. It was not until the mid 1960s when American Malcolm Knowles once again sparked a global interest in adult learning. The 20 years between 1960 and 1980 produced more information and knowledge about adult learning and

learning processes than had been uncovered throughout all of prior educational research (Knowles, 1984).

Inspired by the work of the Yugoslavian adult educator Dusan Savicevic, American psychologist and educator John Dewey, and American philosopher Eduard Lindeman, Knowles presented his concept of adult education by comparing and contrasting it with traditional pedagogical assumptions and principles (Zmeyov, 1998). Knowles (1977) acknowledged the existence of knowledge and experience in adult learners, and viewed the role of the instructor as a facilitator and guide. In his view, the learner was central to the process rather than the subject matter. He based the assumptions for his new viewpoint of adult learning, or the "art and science of helping adults learn," on the premise that adults learn differently from children (Cullen, 1999; Knowles, 1984; Lee, 1998; Pratt, 1988; Zmeyov, 1998). More detail about Knowles's assumptions can be found in chapter 2.

Pedagogical methodology has always been predicated on four basic assumptions. The first assumption suggests that because learners do not have enough basic knowledge, they are dependent on the instructor for direction about their learning needs (Ozuah, 2005; Forrest & Peterson, 2006). The instructor, according to this assumption, assumes total responsibility for all aspects of the learning experience. The second assumption focuses on learning as being subject-centered, requiring the student to adapt his or her learning style to the subject matter (Ozuah, 2005). The third assumption emphasizes extrinsic motivation as the primary driver of learning, with the expectation of either reward or punishment to manage behaviors, mainly in the form of grades and parent or

teacher approval. And finally, the fourth assumption is loosely based on John Locke's blank slate theory that students have relatively no experience, and what little experience they do possess is inconsequential and irrelevant to current learning (Ozuah, 2005).

In contrast, the assumptions that form the basis of adult learning, according to Knowles (1988), are the role of experience, the learner's need to know, self-directedness, orientation to learning, and intrinsic satisfaction. Unlike children, adults learn from their vast repertoire of life experiences, which supports the ability to self-determine what they lack and therefore need to learn (Forrest & Peterson, 2006). Whereas children are basically dependent and function with external direction and motivation, adults perform best in an autonomous, self-directed environment (Zmeyov, 1998). Finally, adult orientation to learning shifts from a subject-centered to a problem-centered perspective, and adult satisfaction shifts from external influence to internal meaningfulness (Zmeyov, 1998).

Knowles's conceptualization of adult learning, which he referred to as *andragogy*, became one of the most controversial and debated ideas in the field of adult education (Brookfield, 1986; Rachal, 2002; Wang, 2003). Similar to pedagogy, the term andragogy was also derived from the Greek words *andros*, meaning "adult man," and agos, meaning "I guide." Knowles based his theory that children and adults learn differently on his observation that they appear to react differently to their instructors (Cullen, 1999; Lee, 1998). For example, children unquestioningly accept direction from teachers because they have no experiential framework from which to make comparisons. Adults, on the other hand, tend to be more tentative and theoretical about information presented by

instructors, to evaluate it for personal meaningfulness and individual necessity rather than accepting it unconditionally. However, in the mid 1970s, Knowles began to acknowledge the possibility that all of the andragogical assumptions might not necessarily apply to all adults. He began to consider that instead of an all pedagogical or all andragogical orientation, perhaps a better representation would be to view the two perspectives on the opposite sides of a continuum along which students travel from subject centeredness to learner centeredness along their educational journey (Merriam, 2001).

Although Knowles's suggestion of a linear continuum appears to be a reasonable and valid concept, the question still remains as to the point at which it is appropriate, cognitively and developmentally, to cease pedagogical methods and employ andragogical methods for optimum learning. Certainly, extraneous variables such as amount of satisfaction with prior educational experience or cultural perceptions and expectations regarding education can and do influence an individual adult's readiness to accept and embrace andragogical principles, but it is important to determine an approximate age at which the transition is appropriate and educationally necessary. Application of andragogical assumptions to an individual who is cognitively and developmentally unprepared or unwilling to receive them can be detrimental to learning and provide an unpleasant educational experience. This would result in frustration, aggravation, and disappointment both for student and instructor. Readiness of the student to accept the andragogical principles, and of the instructor to provide andragogically based instruction, is key to the enhancement of adult learning.

Statement of the Problem

In most theories of human development, childhood spans the period from birth to age 18. This period is usually delineated into three distinct developmental stages: early childhood, middle childhood, and puberty (Berk, 2004). The change in cognitive functioning between each of these stages requires an adjustment in teaching strategies to correlate with the student's ability to learn (Berger, 2001). To further support cognitive learning, age-graded environments in educational institutions were created to enhance and focus on the differences in student cognition (Ornstein & Hunkins, 2004). Although teachers adjust their instructional approach to the appropriate stage of cognition, most educational instruction still falls within the pedagogical framework that relies on teacher and subject orientation, external motivation, and the assumed lack of student experience (Ozuah, 2005).

At the end of childhood, Berger (2001) and other specialists in human development generally agree that the onset of adulthood occurs at the age of 18, and further define adulthood according to four developmental stages: emerging adulthood, young adulthood, middle (mature) adulthood, and late adulthood, which will be discussed further in chapter 2 (Berger, 2001). In social and legal environments, individuals are not considered adults until the age of 21 (Carlson, 1979). In higher education, much of the literature considers individuals 25 or over as adults due to the paucity of research prior to that age on adult learning theory (Laher, 2007; Richardson & King, 1998; Saul, 1990). Throughout the andragogical literature, adults are treated as one single group without

reference to developmental or cognitive stages, thus inferring that andragogical principles and assumptions apply to all adults, regardless of age or developmental stage.

Although Knowles acknowledged that the andragogical assumptions might not fit all adult learners, he was not able to continue the research to support or refute the presumption prior to his death (Merriam, 2001). Therefore, while we know the five presumptive principles that apply to andragogical adult learning, we do not know to which cognitive developmental stage, and more specifically, at which age(s) they are most conducive. Excluding individuals in late adulthood (over the age of 60), who are typically not in educational environments), the majority of adult learners span the ages of 18 through 59, and thus represent three adult developmental stages: emerging, early, and middle (mature) adulthood (Sinnott, 1994). Many cognitive developmental differences exist between the three stages of adulthood with respect to the learning process.

By surveying individuals representing one of each of the three developmental stages and using questions that draw on andragogical assumptions and principles, the goal of this study was to determine whether andragogical assumptions were more conducive to adult learning in middle adulthood rather than either young or emerging adulthood. This would support the need for further research to develop yet a new set of principles and assumptions to bridge the gap between pedagogical and andragogical methodology of mature, emerging, and young adult learners.

Research Questions and Hypotheses

The following research questions and subsequent hypotheses were determined by a careful review of the literature on andragogical principles and assumptions and an examination of three distinct age groups: 18-25, 26-39, and 40-59.

Research Question 1. How do the three age groups differ in terms of acceptance of andragogical principles as indicated by scores on the ALDPEQ?

H_{o1}*:* There will be no statistically significant difference in level of acceptance of andragogical principles across the three different age groups.

H_{a1}*:* There will be a statistically significant difference in level of acceptance of andragogical principles across the three different age groups.

Research Question 2. How do the three age groups differ in terms of course satisfaction as indicated by scores on the ALPDEQ?

H_{o2}*:* There will be no statistically significant difference in terms of course satisfaction across the three different age groups.

H_{a2} There will be a statistically significant difference in terms of course satisfaction across the three different age groups.

Research Question 3. To what degree do age and andragogical principles predict course satisfaction?

H_{o3}*:* There will be no statistically significant difference between age and andragogical principles on course satisfaction as indicated by scores on the ALPDEQ.

H_{a3}*:* There will be a statistically significant difference between age and andragogical principles on course satisfaction as indicated by scores on the ALPDEQ.

The survey instrument used was Wilson's (2005) Adult Learning Principles and Process Design Elements Questionnaire (ALPDEQ). The ALPDEQ measured five out of six andragogical constructs: motivation, readiness to learn, experience, the need to know, and self-directedness. The sixth assumption, orientation to learning, was factored into the construct of motivation. The independent variables in the ALPDEQ included the following student characteristics: gender, age, ethnicity, years of work experience, type of study, and educational environment. In the current study, the independent variable was student age, which was subdivided into three levels of age groups: 18-25, 26-39, and 40-59. The dependent variables in this study were the subscale scores that reflected the amount of satisfaction derived from the course and the individual andragogical constructs. According to Wilson's original research design of the ALPDEQ, the differences in the subscale scores provided insight into the acceptance of the five specific andragogical assumptions; the scores indicative of the amount of satisfaction derived from the course reflected the andragogical principle of motivation. Chapter 3 includes more detail on the statistical design of the ALPDEQ instrument and the statistical analyses to be used in this study, as well as further discussion of the research questions and hypotheses.

Purpose of Study

The purpose of this study was to determine how Knowles's five assumptions apply to three representative stages of adulthood: 18-25, 26-39, and 40-59 years of age. These ranges were determined through a review of adult developmental literature and will be discussed further in chapter 2. According to Knowles, the underlying concepts

that define adult learning principles are based on the role of experience, the learner's need to know, self-directedness, readiness to learn, orientation to learning, and intrinsic motivation (Knowles, 1998). From a developmental viewpoint, most of the assumptions and principles of andragogy appear to be applicable mainly to mature, more experienced adults, because younger adults have not yet reached the cognitive or developmental stages optimal to adult learning (Sinnott, 1994).

It was expected that the results of the multivariate analysis of variance and multiple regression analyses would produce additional data that could be used to offer insight into the possible development of a new set of assumptions that would better suit younger adult learners. It was also expected that the results would provide a new framework for curricularists seeking to design applicable courses to reach adults of all ages. By narrowing the applicability of certain adult learning principles to mature adults, it can be inferred from the research that perhaps different strategies are necessary to better facilitate the learning of younger adults. Because the majority of learners in higher education tend to be younger adults, the creation of curriculums designed to stimulate learning based on limited life or work experience will support the value of intrinsic motivation as well as provide a more meaningful learning experience and enhance the overall quality of learning.

Theoretical Basis

There are three conceptual theoretical frameworks related to the area of inquiry in this study: developmental, cognitive, and adult learning.

Development

Development, according to Merriam (2004), is a key concept with respect to adult learning theory. The process of maturation naturally promotes a move from dependency towards self-directedness and autonomy, many times in response to a life event (Elias, 1979; Knowles, 1984; Knowles, et al., 1998; Zmeyov, 1998). Normative life cycle events generally propel adults to complete expected developmental tasks according to social roles and time frames, while non-normative life events such as a loss of a job, divorce, or a death of friend or relative, usually prompts the individual to act much more swiftly (Knowles, 1984; Tennant & Pogson, 1995; Zmeyov, 1998). Adult responses to both normative and non-normative life events create an atmosphere that promotes readiness to learn supported by the need to know, while the role of experience throughout the life span provides a rich resource for learning (Davenport & Davenport, 1984; Knowles, 1984).

In the andragogical model, the quality and extent of experience an adult gains throughout life is shaped and molded by societal roles and tasks, and ultimately used as a source of his or her own learning (Knowles, 1984; Zmeyov, 1998). The need to know, often referred to as readiness to learn, is triggered when moving from one developmental task to another or by a significant life event, resulting in a change in behavior to improve some aspect of life (Knowles, 1984). As individuals develop, they progress from a subject-centered orientation to a more problem-centered orientation to learning, mainly in response to life events (Davenport & Davenport, 1984; Laher, 2007; Lee, 1998).

Davenport and Davenport (1984) commented that childhood dependency transitions to self-directedness as an individual matures, naturally preparing the

individual to respond more effectively to developmental tasks and life events. Parallel to and complementing the transition, the pedagogical style of instructor-centered teaching is relinquished in favor of a more learner-centered approach. In addition, adults also tend to gravitate more towards motivation by internal factors such as increased self-esteem, greater self-confidence, and recognition, rather than external factors such as rewards or promotions (Fall, 2001; Imel, 1989; Lee, 1998).

Cognitive

According to Piaget, four stages of cognitive operations with reference to problem solving exist: the sensorimotor stage (birth – 2 years); the preoperational stage (two years to 7 years); the concrete operational stage (seven years to eleven years); and the formal operations stage (beginning from age 11 onward). For decades, Piaget's research was viewed as the "final frontier" with respect to cognitive stage theory. Similar to Knowles' acknowledgement of further research in andragogy, Piaget also acknowledged the existence of a higher level of operations past the formal stage, but did not pursue the concept (Berk, 2004).

In 1984, after Riegel first hinted at the existence of a fifth, advanced cognitive stage, theorist Jan Sinnott (1994) formally suggested the existence of a postformal operational stage, which he defined as a more complex problem solving ability based on extensive social experience and maturity (Riegel, 1984; Sinnott, 1994, 1998; Labouvie-Vief, Chiodo, Goguen, & Diehl, 1995; Merriam, 2004). Younger adult brains process information differently than older adult brains, without the benefit (or necessity) of experience with which to associate meaning (Labouvie-Vief & Diehl, 2000; Berk, 2004).

In addition, approaches to learning shift from a subject-centered orientation to a more problem-centered, culturally meaningful orientation as the cognitive ability to solve problems matures and reaches postformal stages of operations (Berk, 2004; Zmeyov, 1998). Problem solving, maturity, and experience are all aspects of postformal thinking that support several of the andragogical principles posited by Knowles.

Adult Learning

Along with developmental and cognitive learning theories, the theoretical basis for this study also rests on the pioneering efforts of Eduard Lindeman who advocated a problem-solving rather than subject-centered approach for adults. Lindeman's theory included a belief that the role of experience played an important part in the interpretation of life events, as well as the orientation of the learner rather than the teacher as central to the learning process (Fall, 2001; Pattison, 1999; Ozuah, 2005; Wang, 2003). Lindeman's concept of adult learning provided the original framework upon which Friere, Dewey, Rogers, and Knowles based their future research.

Assumptions, Limitations, and Scope

Assumptions

The first assumption of importance in this study was the accessibility and size of the population. First, this study was a sample of convenience, as it targeted adult learners in similar undergraduate and community college educational settings. In many research studies, researchers take advantage of populations that are most available and convenient to access, as well as opportune with regard to required permission. In this case, the researcher had access to and was familiar with two viable educational settings.

A second assumption was that the nature of the target population automatically addressed one of the principles to be measured. The act of enrolling in ongoing educational courses is in itself an andragogical behavior, for two reasons. One, it indicates one's autonomous choice of taking control of one's own learning, and two, many mature adult learners are returning to college to either enhance their careers or change them altogether. Therefore, they "need to know" the skills required to do so.

Limitations

The first limitation to address in this study was that there are adult learners who prefer, and learn better, in a pedagogically oriented environment, (Merriam, 2001; Reese, 1994). Not all adults are self-directed and independent; therefore, it was expected that a certain percentage of adults who exhibited dependent tendencies in their lives would also be dependent on teachers for direction and not embrace andragogical principles or be autonomous in their own learning (Merriam, 2001). Adults embracing this perception of learning would be expected to produce outliers in the statistical results.

A second limitation was the dearth of applicable statistical instruments in the literature by which to affectively measure individual acceptance of andragogical principles. Andragogy is not now, nor has ever been, an official theory of learning, meaning that it has never been operationally defined or empirically measured. Both Houle and Jarvis, two of Knowles' foremost critics, claimed that the concept was more of a doctrine than a theory and performed more of an organizational function to provide a set of techniques in the field of adult education (Brookfield, 1986; Davenport & Davenport, 1984). Rachal (2002) suggested that the paucity of research and resulting lack

of empirical statistical information supporting andragogical principles was directly due to the absence of a functional operational definition of andragogy. Cullen (1999), Brookfield (1996), and Block (1996) all concurred with Rachal, in that without an operational definition, empirical research could not occur to confirm the existence of an actual theory.

Rachal (2002) made an interesting observation that challenged as well as explained Knowles' andragogical concept by drawing on Knowles' own definition as the "art and science of helping adults learn." He suggested that an operational definition had not yet been determined because more emphasis was placed on the "art" and less on the "science." Until the ALPDEQ, few instruments had been developed that have brought andragogy one step closer to its categorization as an official theory of learning.

Scope

This study was limited by time and population type. The duration of the online availability of the study was limited to a five week period which was timed to coincide with the end of the course term. The student population in the community college environment was limited to behavioral science students as the design of the distribution system allowed for bulk email to be generated to students within the same department.

Definition of Terms

Andragogy: A method of teaching and learning specifically focusing on adults, that is learner centered, student oriented, internally motivated (Cullen, 1999; Davenport & Davenport, 1984; Knowles, 1984; Merriam, 2001; Rachal, 2002; Zmeyov, 1998).

Andragogical principles: These principles are precepts upon which a theory is constructed and enacted. In terms of Andragogy, the principles are self-directedness, need to know, readiness to learn, experience, and internal motivation.

Emerging adult learners: This refers to adults between the ages of 18 and 25 in higher educational settings (Arnett, 2000).

Mature adult learners: This refers to adults between the ages of 40 and 59 in higher educational settings (Justice, 1997; Sinnott, 1998; Tennant & Pogson, 1995).

Pedagogy: A method of teaching and learning specifically focusing on children, that is subject centered, teacher oriented, externally motivated (Forrest & Peterson, 2006; Knowles, 1980; Merriam, 2001; Lee, 1998; Ozuah, 2005).

Young adult learners: This refers to adults between the ages of 26 and 39 in higher educational settings (Justice, 1997; Sinnott, 1998; Tennant & Pogson, 1995).

Significance of the Study

Whereas much research exists to support cognitive and developmental concepts and theories with regard to children, research on adult cognition and development was not as abundant. In comparison to the amount of research devoted to theories of learning in children, the study and research of adult learning has only been an educational focus for a short while. In terms of andragogical literature and research, the amount of research was even more limited. This study attempted to contribute to the andragogical research by aligning the principles and assumptions with the applicable cognitive and developmental stages. Because enrollment of adults of all ages in community college and undergraduate settings has slowly been increasing in response to enhanced social,

professional, and personal pressure, an increased understanding of how adults learn at each stage of development is essential to meet the needs of the adults at each individual level, thereby enhancing their educational experience and providing optimum learning opportunities.

The review of the existing literature in chapter 2 supports and substantiates what we do know as well as what we do not know about the correlation between andragogical principles and adult learning stages as delineated by age. A thorough discussion of the history of andragogy and its principles will promote complete understanding of the concept and the ability to relate it to established developmental and cognitive theories, so that correlations can be made between the assumptions and appropriate cognitive and developmental age groups.

Implications for Social Change

The field of adult education has encountered tremendous change over the last 2 to 3 decades. The number of adult learners enrolled in postsecondary education tripled, with adults over 25 having increased 28-40% (Berk, 2004; Imel, 2001). Therefore, it is probable that in any given college class, especially in community college evening classes, student may range in age from 18 to 59 or older. Current instructional design in colleges, universities, and community colleges across the nation are not equipped to serve mature adult needs, nor are instructors trained to identify and modify instruction for mature adults (Reese, 1994; Sinott, 1994).

In terms of social change, the results of this study reinforced underscored how important it is that institutions of higher education provide facilitators of adult education

with appropriate curriculum and strategies to enhance the adult learning experience based on the cognitive and developmental needs of their students. Goals and objectives could be adjusted to fit the learner and provide maximum opportunity to synthesize existing knowledge with new information by providing empirical research to substantiate and support the importance of designing curricula that experientially relate to the learner's developmental stage. The number of adults entering learning situations later in life is growing by leaps and bounds in response to a voluntary or involuntary transition in their lives, such as seeking education to maintain current employment or to change careers. It is not only appropriate, but also vitally necessary to adjust teaching strategies, curriculum, goals, and objectives to promote learning success in adult learners those individuals.

To promote external social change by providing optimum learning environments by adjusting strategies and curricula, it is first important and necessary to understand the nature of the adult learner and the origins of the andragogical principles and theory. By reviewing the history of andragogy and the theoretical basis of adult development and cognition in chapter 2, these concepts can be synthesized and analyzed by statistical research design as outlined in chapter 3 to determine how applicable the principles are to the varying adult age groups. Chapter 4 will clearly address the empirical results of the study, and chapter 5 will discuss whether the empirical findings support the hypotheses as presented in this study, and provide new insight with regard to the relationship between the andragogical principles and the adult learner.

CHAPTER 2:

LITERATURE REVIEW

Organization, Strategy, and Justification of the Study

Organization of the Review

The literature review begins with the historical foundations of the concept of andragogy. As andragogy is a relatively new educational philosophy, it is important to understand its developmental and theoretical origins. Andragogy is built upon assumptions or principles that are characteristic of the adult learning process. A clear understanding of each of the assumptions is essential, so that comparisons with concepts in adult development can be drawn and examined as a basis for the study's research. A comprehensive overview of the stages of adult development provides the additional information necessary for comparisons with andragogical principles. The chapter culminates in a discussion of the comparisons themselves.

Strategies for Searching the Literature

In reviewing the literature for this study, information was obtained from a variety of sources. The main focus of the research strategy was andragogy and its principles, and subsequent searches included the keywords of andragogy, adult learning, cognition, pedagogy, and adult development. A majority of the data collected were from internet searches within scholarly and governmental databases, including ProQuest, Academic Search Premier, PsycInfo, ERIC, and Google Scholar. Several documents and books were also delivered and reviewed from the Document Delivery Service operated by the University of Indiana Bloomington. Ninety-seven documents or books were reviewed for

reference support in this study, and sixty-eight were finally and formally included. The data were analyzed and categorized according to their support or definition of the andragogical principles first, then according to contribution or support of adult developmental and cognitive concepts. The data were then synthesized to determine patterns and combinations of age related developmental and cognitive concepts with regard to adult learning principles. Annotated bibliographies were number coded and cross referenced between topic notes, and all reference supporting information was maintained on a master Excel spreadsheet.

Justification of the Study

In the broad expanse of literature that was reviewed for this study, no significant research was found that discussed the relationship between andragogical assumptions and stages of adult development. The concept of andragogy is relatively new in the history of adult education, much of its research focuses on the application of the assumptions to adults as an entire population. Towards the end of his career, Knowles acknowledged the possibility that the application of andragogical assumptions might not suit all adult learners when he introduced his concept of a continuum, but was unable to begin research to support his supposition.

History of Andragogy

The genesis of organized education can be traced to the Middle Ages in Europe when the church formed cathedral schools to train young men for the priesthood (Ozuah, 2005).

The curriculum to be taught was based on religious documents and doctrine, but the instructional methodology did not yet exist. From their observations of how children learned in their monastic schools as well as their basic characteristics, church officials developed a teaching methodology based on four main assumptions (Forrest & Peterson, 2006).

First, children who entered the cathedral schools were seen as dependent on the church for their learning needs, meaning they did not know what they needed to know for learning to occur. Second, the curriculum was the focus of the learning, not the student. In preparation for the priesthood, learning religious doctrine was more important than the ability or success of the learner. Third, it was observed that children were motivated by external influences rather than internal motivation. Children responded best to what is now known to be principles of operant conditioning, specifically reward and punishment. Finally, church officials believed that any prior experience that children who entered the cathedral schools had was irrelevant or inconsequential in relationship to the predetermined course content (Forrest & Peterson, 2006; Ozuah, 2005). As the focus of teaching was primarily on children, it became known as *pedagogy,* an ancient Greek term meaning "education of children" (Forrest & Peterson, 2006).

European religious institutions remained the main provider of formalized education until the Renaissance era, when education began its slow transition to more secular venues (Cullen, 1999). When the Puritans settled in North America in the 1700s, they brought with them a concept of education rooted in theological principles, and the purpose of education was to teach the ability to read Scriptures and civil information

(Ornstein & Hunkins, 2004). In the late 1800s and early 1900s, the manifestation and popularization of secular public school systems eventually overcame the religious influence in education. Unfortunately, the power and influence exerted by the church on educational content and teaching methods had been so strong for so long that the pedagogical methodology associated with it evolved as the only acceptable style of teaching for children and eventually adults in religious and secular institutions (Ozuah, 2005). As a result, the consistent use of pedagogy in adult instruction bound educators to apply the assumptions and principles originally developed for children to adult learners as well (Forrest & Peterson, 2006).

Although though the formal recognition of adult learning and education as a field is relatively new, the basic principles upon which they are drawn are not. The roots of adult learning can be traced to teaching strategies and principles practiced by the ancient philosophers Socrates, Aristotle, and Plato, whose primary students were adults seeking enlightenment to enhance their social roles and identities (Forrest & Peterson, 2006; Ozuah, 2005). Both the Socratic method of problem solving and the promotion of autonomous learning were derived from historical observations regarding an inherent adult need to be self directed and learner centered instead of subject centered (Knowles, 1984; Ozuah, 2005). Andragogical concepts can also be found in the teachings of Hebrew and Greek educators as interpreted through the specific choices of verbiage with regard to educating adults: learn, teach, instruct, guide, lead, and example (Henschke & Cooper, 2006).

In the late 1800s and early 1900s, the need for a new, adult oriented educational model of instruction became clearly apparent when traditional pedagogical principles, applied to an adult workforce faced with economic and political pressures for growth, failed to work (Savicevic, 1991). In pedagogical theory, all learning is meant to prepare students (children) for future application (Forrest & Peterson, 2006). In the "real world", however, it is critical that adult learning be applied immediately in the workforce to effect change and productivity in response to economic and political pressure. To facilitate the immediate application of knowledge, educators soon realized the importance of the role of experience, which was in direct contradiction to the pedagogical principle that students should be a "blank slate" for learning. Drawing on prior experience allowed adults to make meaning of the knowledge, thereby making application much easier (Forrest & Peterson, 2006).

The search for a better way to improve worker education in response to social and economic pressures sparked an ideological global interest in adult education (Savicevic, 1991). In 1919, the World Association for Adult Education was formed in London to address the growing desire for a formalized theory of adult education, while Germany played a critical role by studying the scientific foundations of adult education. The Netherlands focused on the social influence on adult education in terms of social behavior, group application, and interpersonal relationships (Savicevic, 1991).

In 1920s, several significant events occurred to enhance the field of adult education in America. The first adult programs were offered in public schools, and 1926 saw the formation of the American Association for Adult Education (Pattison, 1999).

Also in 1926, the American philosopher Eduard Lindeman posited several assumptions of adult education, including his position that the best approach to adult learning was problem solving oriented instead of subject based. He also strongly advocated student centered learning and the role of experience in providing meaning to life events (Fall, 2001; Pattison, 1999; Ozuah, 2005; Wang, 2003). Lindeman's focus on how adults learn included basic assumptions upon which future principles of adult education would be drawn. He preferred to use the term "adult education", even though he and Martha Anderson introduced the term *andragogy* (which had been conceived in 1833 by German Alexander Kapp) to America in 1927 (Lee, 1998; Rachal, 1998).

The use of the term, as well as the interest in adult education, waned for the next few decades due to the intense focus on World War II. As in the early 1900s, political and economic pressures once again raised the problem of providing adequate and appropriate adult education when it became evident that vocational training was vitally necessary to support the war effort (Pattison, 1999). Community colleges (also referred to as junior colleges) were not equipped to fulfill adult educational needs, so once again it became the responsibility of businesses to train workers in necessary skills (Pattison, 1999).

In Europe, adult educational ideology was given little attention until after the Second World War, at which time individual countries began their own research and review. In Germany, F. Poggeler began to review andragogy in a scientific light by studying systematic forms of the concept (Savicevic, 1991). Ten Have, who began the

andragogical movement in the Netherlands, modified the term as ‘social agogy’, to identify a broader meaning inclusive of social influences, internal and external.

The 1950s presented an environment ripe for adult educational change with the strong support of two important movements: humanism and progressivism. The humanistic psychology movement focused on the individual, especially with regard to self-esteem and self-actualization. Humanism’s focus was on the success and development of the whole person in terms of individuality and uniqueness (Pattison, 1999). Humanist Carl Rogers’s promotion of theoretical principles that placed personal development squarely on the individual in terms of taking control of one’s own learning complimented the andragogical assumptions of autonomy and self-directedness (Tisdell & Taylor, 1999; Zmeyov, 1998). Rogers’ position that education should be facilitated rather than taught foreshadowed Knowles’ future andragogical definition of educators as facilitators (Knowles, 1990; Wang, 2003).

The progressive social reform movement placed “education at the heart of social reform” (Pattison, 1999, p.3). Educational theorists and progressive advocates Dewey and Friere also provided humanistic support for andragogical principles by promoting autonomy and self-direction. Their viewpoint that the purpose of adult education was to bring about social change echoed the original impetus of the concept introduced in 1919 (Pattison, 1999; Tennant & Pogson, 1995). Progressivist principles were firmly planted in the writings of Friere, Lindeman, Dewey, Rogers, and Knowles, in terms of learner centeredness, teacher as facilitator, and social activism (Pattison, 1999).

The decade of the 1960s was rich in conceptualization and theorization as many educational researchers attempted to operationalize adult education. In 1960, Gibb attempted to define a functional adult learning theory by conceptualizing learning as experience and problem centered, meaningful, self-directed, and providing opportunity for feedback (Brookfield, 1986). In 1962, drawing upon humanistic and progressive principles, Knowles began to set the stage for his future concepts of andragogy by actively promoting student centeredness and acknowledging student needs. Finally, in 1968, Knowles officially reintroduced and adopted the term andragogy (Davenport & Davenport, 1984; Knowles, 1984; Lee, 1998; Rachal, 2002). He further defined it as the "art and science of helping adults learn" (Cullen, 1999; Fall, 2001; Knowles, 1984; Wang, 2003; Zmeyov, 1998).

In the next two decades, more information about the characteristics of adult learners and their respective learning processes was obtained than had been obtained in all prior educational history (Knowles, 1984). It began in 1970, when Malcolm Knowles first posited his vision of adult educators as facilitators and guides rather than central to learning in his andragogical publication, *The Modern practice of Adult Education: Andragogy versus Pedagogy* (Wang, 2003). It was also in this publication that he first introduced the original four andragogical assumptions: self-concept, experience, readiness to learn, and orientation to learning. In 1971, on the heels of Knowles's research, Tough studied two concepts: the effects of self directed learning projects on adults, and the role of the teacher in assisting adult learners (Wang, 2003). Both were similar to Knowles's work, but it did not receive nearly the acclaim or attention.

Toward the end of the 1970s, interest in andragogy was rekindled in Europe, mainly due to the attention given to American educational theorists, including Knowles. A task force was initiated at the University of Nottingham in Great Britain, with the purpose of studying various andragogical assumptions (Savicevic, 1991). Rather than aligning with Knowles's andragogical direction, the members of the task force chose to broaden their view toward a more socialistic, egalitarian set of assumptions based on Friere's ideas (Savicevic, 1991). In Hungary, the concept of andragogy was studied in within a problem- solving framework: the differences between in school and out of school adult education (Savicevic, 1991).

Although adult education was becoming universally accepted as a viable instructional concept in the field of education, the specific concept of andragogy continued to face much challenge and debate. Critics included Hartree, who suggested in 1984 (reiterated by Sipe in 2001) that the andragogical principles set forth by Knowles were merely descriptions of the ideal adult student as we expect him to be (Kerka, 2002; Merriam, 2001), and Houle, whose 1972 publication *Design of Education* posited that andragogy was more about technique(s) and less about organizing principles (Davenport & Davenport, 1984). Jarvis viewed andragogy as a Zeitgeist reaction to (or result of) the romantic, humanistic movement of the 60s, rather than a true educational theory (Savicevic, 1991).

Proponents and advocates of andragogy included Brookfield, who in 1986 heralded andragogy as the most popular concept in the training and education of adults to date (Brookfield, 1986; Wang, 2003) and Fall (2001), who viewed Knowles's work as a

key contribution to the literature of adult learning. In addition, Cross (1981) and Feuer and Geber (1988) credited Knowles as having revolutionized adult education and training (Brookfield, 1986; Wang, 2003).

The most important issue raised regarding andragogy, however, was its theoretical implications and status. Theories in the area of adult learning began to emerge in the 1920s. In 1926, Eduard Lindeman presented research that laid the groundwork for the first known adult learning theory in his publication *The Meaning of Adult Education* (Fall, 2001). Since that time, adult educators have attempted to formulate additional concepts and theories regarding adult learning, mainly by contrasting methods and results with known pedagogical theory, by combining existing models, sets of principles and explanations, and by attempting to identify universal principles of adult learning (Brookfield, 1986; Merriam, 2001; Zemke, 2002).

The outward acceptance and promotion of andragogy as a theory was evident in the works of Merriam and Caffarella (1991), who classified andragogy as a theory of adult learning, and Davenport and Davenport (1985, p.157) who reported further references to andragogy as a "theory of adult learning, theory of technology of adult learning, method of adult education, technique of adult education, and a set of assumptions" (Merriam, 2001; Rachal, 2002). In addition, Justice and Griffin publicly referred to andragogy as a theory of education, in spite of the fact that no empirical evidence existed to support its principles (Justice, 1997; Savicevic, 1991).

Many theorists, including Houle (1972), Cross (1981), Hartree (1984) questioned the validity of andragogy as an educational theory (as cited in Davenport & Davenport,

1984; Merriam, 2001; Rachal, 2002). To be classified as a scientific theory, empirical evidence is required to support theoretical suppositions, especially within the field of psychology (Block, 1996). To date, only a few research studies have even been attempted to empirically validate andragogy as a learning theory (Rachal, 2002). In 1984, Jarvis claimed that although the theory of andragogy was considered an established doctrine due to its popularity, the lack of sufficient research still did not justify its position as a theory (Brookfield, 1986). Subsequently, in his 1997 paper, Ferro also maintained that there was very little empirical evidence by which to support a valid theoretical basis for andragogy to be considered a theory (Cullen, 1999). In 2002, Rachal challenged researchers to validate their blind acceptance of andragogy as a theory by first determining operational definitions. He indicated that one of the reasons that may have inhibited the pursuit of validation is illustrated by andragogy's definition: theorists are influenced more by the "art" rather than the "science" of how adults learn (Rachal, 2002).

As a result of much debate, discussion, and challenge in the early 80s regarding his original andragogical assumptions and theoretical intentions, Knowles revised his thinking on several fronts. First of all, to acknowledge the possibility that andragogy was "less of adult learning theory than set of assumptions about learning or conceptual framework that serves as a basis for an emergent theory" (Knowles, 1989, p. 112). Second, the lines between andragogy and pedagogy were not as clearly defined as once assumed. This repositioning of thought was clearly illustrated in the 1980 revision of his 1970 publication, which he titled *From Pedagogy to Andragogy* (Lee, 1998). In it, Knowles presented the concepts of pedagogy to andragogy as a linear continuum, with

instructional orientation flowing from teacher to learner centered along the individual's developmental path (Pratt, 1988; Schaie, 1994). Instead of viewing pedagogy and andragogy as an "either – or" situation, he began to view it as a journey along a continuum of learning and change (Lee, 1998; Merriam, 2001). As one would expect, on any journey, real or analogous, events occur along the way that create experiences which provide foundations for learning. More experiences exist toward the middle and end of the continuum rather than at the beginning, due to the increase exposure to events in life. In their 1927 publication *Education Through Experience* (p.3), Lindeman and Anderson alluded to the existence of a continuum or transition from pedagogical orientation toward andragogy in their viewpoint that adulthood is achieved when it is recognized by a "growing awareness of self and readiness to make existential choices…[culminating in]…an effort toward self mastery" (Brookfield, 1986, p. 91). Third, based on the discussions surrounding the lack of empirical support, Knowles revised his reference to andragogy as a situational model of human learning, rather than an actual theory (Feuer & Geber, 1988).

Whether one considers andragogy as a theory, set of principles and assumptions, or instructional methodological guidelines, Knowles's original principles and assumptions remain applicable, especially with the creation of new learning processes to meet the needs of today's adult students (Wang, 2003). Andragogy is still considered the best method of adult instruction by many leaders in adult education, including Jarvis, Brookfield, Feuer and Geber, and Knowles (Wang, 2003). According to Lee (1998), the assumptions of andragogy support an instructional style that is positive for adult

facilitators and students. To date, these assumptions have still not been challenged nor questioned with regard to the appropriateness toward adult learners of all ages (Merriam, 2001).

Andragogy: Definition and Assumptions

Definition

Defined as the "art and science of teaching children," the term *pedagogy* was derived from the Greek word *paid,* child and the word *agogus*, leader of (Ozuah, 2005). In contrast, the term *andragogy* was also derived from Greek vocabulary: a*ndros*, meaning adult man, and *agos*, meaning "I guide". The term andragogy was first introduced by Alexander Kapp in 1833, and referred to again in 1926 by Eduard Lindeman (Davenport & Davenport, 1984; Lee, 1998; Rachal, 2002; Zmeyov, 1998). In 1968, the term was reintroduced by Malcolm Knowles, who popularized it as a new label for a new methodology that separated adult schooling from pre-adult schooling (Merriam, 2001). Since that time, the term has been used to compare and contrast adult learning principles with pedagogical principles, and has been defined as the "art and science of helping adults learn" (Cullen, 1999; Lee, 1998; Knowles, 1984; Rachal, 2002).

The origin and inception of andragogical concepts and ideas were strongly influenced by humanistic philosophy that focused on the development of the individual in personal and social environments, and the role, responsibility, and accountability of the individual in his or her own learning (Zmeyov, 1998). From his observation of adult learners, Knowles identified that the learning process and approach that adults follow was different than younger learners (Fall, 2001). He then developed the original set of

assumptions through a combination of his observations of adult learners, humanistic principles, and Lindeman's original model, which included readiness to learn, experience, life centered orientation to learning, self-directedness, and age related differences (Rachal, 2002; Wang, 2003). The purpose of the assumptions, therefore, was to distinguish adult learners from children in the learning process (Lee, 1998).

Pedagogical Assumptions

To fully comprehend the andragogical principles or assumptions, it is important to understand the pedagogical assumptions that andragogy sought to refute with regard to adult learning. According to Gehring (2000) and Ozuah (2005), pedagogical theory emphasized five major points: the lack of experience, dependency (in terms of self concept), external motivation, content oriented learning, and readiness to learn. Due to their relatively short lifetimes, children do not have the opportunity to gain much useful experience from many life events or developmental tasks. In pedagogical thinking, teachers assume (wrongly) that any experience children do have is irrelevant and inconsequential (Ozuah, 2005). As a result, children rely on teacher and/or adult guidance to fill the void and provide the information (usually with predetermined course content) to create a frame of reference upon which to build new learning (Knowles, 1980). Furthermore, what little experience children do have is perceived within their limited cognitive abilities. According to Piaget's cognitive stage theory, in the preoperational stage fantasy is perceived as reality, whereas in the concrete operational stage, children view situations in concrete terms rendering them unable to apply the information toward other situations or learn from them (Ginsburg, 1982). Shaw and Fisher (1999) suggested

that even 18 and 19 year olds do not have enough knowledge gained from experience to apply toward future learning (as cited in Forrest & Peterson, 2006).

Second, as a direct result of their status in the societal hierarchy, children are heavily dependent upon adults for direction and guidance. When children transition into adulthood and begin to explore new roles as workers, parents, spouses, and citizens, their social status changes as they become less dependent and more self directed (Forrest & Peterson, 2006; Ginsburg, 1982). In terms of learning, the dependent child looks to teachers for guidance as to learning needs, because she or he simply does not know what is necessary to know in terms of information or subject matter to reach required goals (Ozuah, 2005).

Children are basically externally motivated to reach the goals set, not by them, but by teachers and parents. Basic behavioral concepts of reinforcement and punishment using extrinsic factors are prime motivators for children, including: acceptance, teacher/parental approval, grades, and avoidance of unfavorable consequences (Ozuah, 2005). Concrete cognitive operational thinking provides a "here and now" concept of achievement. Until children are able to think more in the abstract, which doesn't generally occur till late in the formal operational stage, they are not able to apply current learning to future endeavors (Berk, 2004).

Finally, external motivation is closely linked to content or subject oriented learning, which is the type of instructional methodology found in most public and private school systems. Subject oriented learning maintains a child's natural dependency on the teacher for the responsibility and evaluation of learning. The content of the learning is

based on two factors: the subject matter to be learned and what the instructor knows (Forrest & Peterson, 2006). In pedagogy, the goal of subject oriented learning is to master the content in order to facilitate promotion of the child to the next level, not to solve life problems (Forrest & Peterson, 2006; Gehring, 2000; Lee, 1998; Ozuah, 2005). In pedagogical methodology, a child's readiness to learn is driven by measurable achievement goals rather than developmental tasks. As children's goals are externally pre-determined by teachers and parents, their readiness to learn aligns with adult expectations of them rather than their own. In other words, children's readiness to learn is highly correlated with content achievement, as is their dependency on teachers to know what it is they need to learn.

Knowles strongly believed that through a comparison of pedagogical, teacher oriented methodology with andragogical, and learner centered methods, the differences between adults and pre-adults would be clearly evident in many important ways (Imel, 1989).

Andragogical Assumptions

Knowles' introduction of andragogy was predicated on four basic assumptions drawn on the learning differences between adults and children. With maturity and age, an individual's self concept becomes less dependent and more self directed while accumulating a wealth of valuable experience that would serve not only as a learning resource but also as a point of reference from which to relate all new learning (Lee, 1998; Merriam, 2001). Patterned after Lindeman's model, readiness to learn reflected the fact that adults seek out learning when appropriate to fulfill societal roles, and orientation to

learning represented the skills or knowledge sought to either apply to daily problems in fulfilling the societal roles (Lee, 1998) Finally, learning becomes less subject-oriented and more problem-centered (Lee, 1998; Zmeyov, 1998). In 1984, Knowles added a fifth assumption that suggested that adults are internally motivated rather than externally motivated, and in 1990 a sixth: the need to know why something must be learned prior to learning it and its justification for being learned (Fall, 1998: Lee, 1998).

Recognizing that andragogy is not a true "theory of learning" in the operational definition or empirical research sense, its strength in adult learning literature lies squarely on the assumptions upon which it based as well as basic adult characteristics (Knowles, 1980). Knowles himself referred to andragogy as "another model of assumptions about learners to be used alongside the pedagogical model of assumptions" upon which a future theory can emerge (Knowles, 1980, p.43; Merriam, 2001). Therefore, the definition of each assumption is clearly indicative of its intent and ability to support adult learning and specifically, andragogy.

Self-directedness

Originally addressed by Lindeman in 1926, again by Rogers in 1969, and by Knowles in 1975, the first, and probably the most important andragogical assumption is that of self-directedness (Brookfield, 1986; Cullen, 1999). According to Knowles (1984), the definition of an adult is that one who has achieved a self-concept of having complete responsibility for one's own life and of being self-directing (Pratt, 1988). He further suggested that adults are psychologically driven toward self-directedness, and resent or even resist attempts to limit their ability to be self-directed (Fall, 2001; Knowles, 1980;

Lee, 1998; Pratt, 1988). Self-directedness is a result of maturity in the aging process, as the individual moves along the continuum from dependency toward self-direction (Brookfield, 1986; Davenport & Davenport, 1984; Elias, 1979; Washbourn, 1996). Whereas individuals are born with the desire to be self-directed, societal norms and cultural expectations inhibit the development of self-directing tendencies until adulthood (Knowles, et al., 1998 III, Knowles, & Swanson, 1998).

Reflective of humanistic principles, self-directedness addresses both the adult learner's need for self-fulfillment and the need to be recognized as being responsible for his or her own decisions and choices, especially with regard to learning (Knowles, et al., 1998; Pratt, 1988; Tisdell & Taylor, 1999). Cross 1978 (as cited by Sinnott, 1994) suggested that self-directed adults are better at identifying their own strengths and weaknesses, and thus developing their own learning processes to address them. More clearly stated, adults are clear about what they wish to learn, take responsibility for their learning, express concerns about the practical application of what is being learned, and reject learning that they deem irrelevant (Cullen, 1999; Sinnott, 1994). In addition to Brookfield's (1986) suggestion that the central theme of self-directedness is the taking control over educational goal setting, Knowles suggested that the initiatives to design learning experiences, evaluate learning, locate resources, and diagnose needs are also critical components (Brookfield, 1986).

Tice (1997) made several observations about Knowles's research. First, adult learners are more self-directed than younger students. Second, adults find learning more meaningful than younger learners. Third, adults bring a higher level of maturity and

commitment to learning, and finally that younger learners simply do not have enough experience to enhance the self-directed learning environment. Knowles realized that along the continuum, many adults do not acknowledge or even recognize their own capacity for self-direction. So, to build an environment of awareness of their own self-direction, Knowles had adult learners reflect upon and learn from the next important assumption of andragogy: experience.

Experience

With age comes maturity, and with maturity comes a wealth of life experience that becomes not only a broad resource for learning, but also a source of individual identity (Brookfield, 1986; Davenport & Davenport, 1984; Knowles, et al., 1998; Knowles, 1984, 1990; Ornstein & Hunkins, 2004). Life experiences that begin to accumulate at birth and continue throughout infancy and childhood are perceived simply as occurrences, not opportunities for learning or shaping identity. In adulthood, however, experiences take on a different quality conducive to learning, as they become more traditionally associated with adult social roles, expectations, and social identity (Knowles, 1984). More specifically, the social, occupational, psychosocial, and family contexts in life situations in which experiences occur create and promote learning opportunities for adults by orienting current and prior experiences to life, developmental tasks, and expectations (Beder & Darkenwald, 1982; Knowles, 1984; Zmeyov, 1998). In turn, these life events and transitions also promote learning through the interpretation and transformation of experience gained into knowledge (Merriam, as cited by Sinnott, 1994; Tennant & Pogson, 1995). The interpretation of experience and the experiences

themselves are social phenomena, which can be meaningful or meaningless, depending on the use adults make of them (Jarvis, 1987; Merriam & Caffarella, 1999, as cited by Kerka, 2002). Personal beliefs and values, as well as socio-cultural expectations or norms shape the frameworks or schemas through which we evaluate events by filtering them for meaningfulness (Gagne, 1971, as cited by Brookfield, 1986; Jarvis, 1987; Mezirow, 1981, 1990, 1991, as cited by Sinnott, 1994). In his seminal publication, *The Meaning of Adult Education,* Lindeman stated, "Adult education is a process through which learners become aware of significant experience. Recognition of significance leads to evaluation. Meanings accompany experience when we know what is happening and what importance the event includes for our own personalities"(Fall, 2001, p.169).

Berger (2001) reiterated Lindeman's theory when she stated, "experiences give rise to cognitive disequilibria and reflection, which can result in new view of one's self and meaning of one's life" (p.508). Experiences and the meanings we associate with them do play an important role in the cognitive, intellectual, aesthetic, and affective development of adults, especially with regard to expertise, personality formation, social roles, and learning (Tennant & Pogson, 1995; Washbourn, 1996). Cognitive psychologists Piaget and Bruner underscored the intertwined relationship between experience and learning, in that learners tend to reconstruct experiences to fit existing personal and social schemas for complete understanding (Tennant & Pogson, 1995). Brookfield (1986) and Merriam (as cited by Sinnott, 1994) further supported Piaget and Bruner's constructionist viewpoint in their point that adult transitions between physical,

psychological, and social developmental phases provide the cognitive opportunity to rearrange and interpret past experiences.

It can be said that life experience is the textbook for adult learning (Forrest & Peterson, 2006). It provides the context and framework from which adults can infer meaning and integrate new experiences, thereby creating new meaningful learning (Sinnott, 1994). All adults bring some kind of prior experience and acquired knowledge to the classroom, and instruction that builds upon the experiences tends to be more successful (Cullen, 1999; Imel, 2001; Tice, 1997). Furthermore, instruction that integrates experience with academic theory along with the experiences of other adult learners (and the instructor) provides a solid foundation upon which new learning can be created (Justice, 1997). The focus on the learner's experience, therefore, is central to, and is considered a main characteristic or hallmark of adult learning, especially with regard to quality and quantity (Feuer & Geber, 1988; Knowles, 1980; Lee, 1998; Sinnott, 1994; Tennant & Pogson, 1995).

Brookfield (1986) suggested that for optimum adult learning, explicit connections must be made between past experiences and unfamiliar concepts. Laher (2007) posited that adult learners with more experience than younger learners tend to increase the amount of discussion and questions posed in a classroom setting, as well as review the experiences critically with regard to course material. Adult students who are more mature with regard to age and experience view experiences in a broader context, and tend to apply newly created learning toward skills and enhancing their existing knowledge base, whereas younger adult students tend to categorize experiences objectively for future use

(Berger, 2001; Laher, 2007). Adult experiences not only provide a basis from which new learning can be created, but also an awareness of needs that the current knowledge base does not cover. In other words, where current experience falls short, adults recognize the need to encounter new experiences for growth and are ready to learn what they need to know.

Readiness to Learn

Adults experience a readiness to learn when their current experience or knowledge base does not adequately prepare them for enhancing some aspect of their lives or in response to a developmental task (Brookfield, 1986; Knowles, 1984). As individuals mature, lifestyle changes and choices must be made in response to social roles and responsibilities as spouses, parents, employees, etc. (Davenport & Davenport, 1984; Laher, 2007; Lee, 1998). Life cycle events such as births, deaths, job loss, marriage, and divorce, and developmental tasks that occur during different stages of growth also trigger a readiness to learn in adults (Havighurst, 1972, as cited in Knowles, et al., 1998; Knowles, 1984).

Merriam (cited by Sinnott, 1994) referred to readiness to learn as teachable moments that influence the outcome of the developmental task. Successful achievement of the task leads to happiness and enhanced self-efficacy, whereas failure leads to unhappiness, societal disapproval, and diminished self-efficacy. For adults to more effectively cope with real life situations in terms of life cycle outcomes and developmental tasks, readiness to learn is linked to the need to know (Horton, et al., 1998).

Need to Know

Knowles recognized the need that adults have to know why it is important to learn information before they begin learning it, and especially how it will apply to their everyday situations and lives (Fall, 2001; Laher, 2007). Often, adults are unaware that they need to know information to achieve the task or succeed in their goals, and it becomes the responsibility of the facilitator to raise awareness of what is necessary to know to fulfill the requirements for the task (Knowles, 1990).

The need to know is most often associated with life changes, developmental tasks, and stage transitions. Brookfield (1986) suggested that the gentle pressure emanating from the tasks at hand promote a sense of responsibility in adults for what and why they learn, and it is in this type of environment in which the best adult learning occurs. Knowles, et al. (1998) reminded us that in 1979, Tough suggested that when adults are internally driven to learn something, they will expend a considerable amount of energy in determining the benefits or consequences of learning or not learning the information. As the decision (and choice) about what is necessary to learn is ultimately a personal one, the need to know can be viewed as a type of intrinsic motivation that propels adults to follow through.

Intrinsic Motivation

Justice (1997) found that the generative need to produce and contribute was a major motivating factor for adults returning to education around the age of thirty, and academic achievement was equated as public recognition of validation of the generative capacity. Horton (1996) suggested that although some adult learners approach learning

for the sake of learning, most adults approach it as a means toward enhancing quality of life (Tice, 1997). Justice (1997) observed that after the age of forty, the need for learning shifts as motivation decreases for vocational purposes and increases toward personal growth and development.

With respect to learning, extrinsic or external forces, such as pay raises and promotions, are generally are not the primary motivators for mature adults (Imel, 1989; Rachal, 2002). Mature adults are motivated to learn for a variety of reasons, most of which are intrinsic or internally driven: enhanced self-esteem, recognition, better quality of life, improved self-confidence, personal fulfillment, and achieved self-actualization (Knowles, 1984; Rachal, 2002). Harriger (as cited in Sinnott, 1994), compared younger traditional students with adult students and found a higher level of motivation in adult students, and that they tend to be more involved in learning and studying.

As adults mature, the developmental tasks they experience create needs that are necessary to successfully complete life transitions. In 1926, Lindeman posited that the more needs and experiences adults incur, the more motivated they become to learn (Fall, 2001). Following in Lindeman's theoretical footsteps, Knowles (1984) also noted that when adults experience a need to enhance or change their life situation, their motivation to learn propels them toward a task, life, or problem centered orientation to learning.

Orientation to Learning

With maturity, one's learning orientation transitions from subject centered to problem centered relevant to current life situations (Davenport & Davenport, 1984; Laher, 2007). After years of pedagogical subject matter orientation that provided

information to be used at a future date, the andragogical problem centered orientation focuses on the immediate need for adults to apply learning to life and task centered problems (Imel, 1989). Faced with problems emanating from developmental tasks, life cycle events, or life stage transitions, adults seek learning for the skills or knowledge needed for application and coping skills (Cullen, 1999; Fall, 2001; Lee, 1998). Cross (1978, as cited in Sinnott, 1994) and Tenant and Pogson (1995) attributed growth and maturity to experience and motivation in solving problems with busy lifestyles found in work, home, school, and community life situations.

Experience leads to expertise in midlife, enhancing problem-solving abilities (Labouvie-Vief, cited in Berk, 2004). In educational venues, Bierly, Berliner, & Gage (1984) suggested using a problem-oriented curriculum instead of subject oriented. Problem oriented curriculum incorporates actual problems encountered by professionals in the discipline as a basis for instruction (Block, 1996). As problem solving abilities are directly related to cognitive abilities, further discussion of age related cognition will be made later in this chapter.

A clear understanding of the six andragogical assumptions listed above is the first step toward the identification of age related adult learning. All of them are applicable to adults as learners, but what is the operational definition of an adult, and how are they defined throughout the lifespan?

Adulthood: Definition and Developmental Stages

Definition

Brookfield (1986) and Carlson (1979) defined adults as individuals who have attained the chronological and legal status of adulthood, with all the rights and responsibilities it entails. Whereas modern society views adulthood at age 21, much of adult education literature usually perceives adulthood as over the age of 25 (Laher, 2007; Saul, 1990).

According to Knowles, the psychological definition of an adult is when one arrives at a self-concept of being responsible for one's own life, of being self-directing (Knowles, 1990, p.64). Andragogically speaking, adults are individuals who have assumed adult such societal roles such as spouse, parent, and employee (Forrest & Peterson, 2006; Saul, 1990). Aligning with the societal roles adults assume is the level of self-directedness required to perform the expected functions; therefore, according to Brookfield (1986), individuals who exhibit self-directed behaviors can be described as adults. Additional characteristics specific to adults include motivation, cultural and personal influences, the acquisition of knowledge, the ability to solve problems, the acquisition of life experience, and autonomy (Berk, 2004; Saul, 1990: Sinnott, 1994). Physical, physiological, cognitive, and developmental characteristics also define adults, especially with regard to age-graded stages.

In the literature, adult learners tended to be viewed as one homogenous group. Feuer and Geber (1988) indicated that one of the problems in our attempts to categorize adult learners is that by doing so, the diversity within the learning group itself diminishes.

In addition, there are many extraneous situations that might have had an influence on the dependent variable such as level of education, socioeconomic status, prior positive or negative educational experiences, and individual uniqueness (Cullen, 1999; Merriam, 2001). Whereas a plentitude of life experiences generally contribute to a learning base for adults, they may actually inhibit learning in some cases (Merriam, 2001).

Stages of Adult Development

Beder and Darkenwald (1982) reported that research of adult development is extremely important toward understanding differences between adults with regard to teaching and learning. This same research is important with regard to the relationship between andragogical assumptions and adults of different ages. Transitions between predictable developmental stages throughout adulthood have been identified by developmental psychologists to trigger two main andragogical assumptions: readiness to learn which, along with orientation to learning have an influence on adult reactions toward developmental tasks and assumption of social roles (Knowles, 1984). With regard to the link between development and learning, Piaget posited:

> According to Piaget, learning cannot explain development but the stage of development can in part explain learning. Development follows its own laws…and although each stage is accompanied by all sorts of new learning based on experience, this learning is always relative to the developmental period during which it takes place, and to the intellectual structures, whether completely or partially formed, which the subject has at his disposal during this period. (Ginsburg, 1982, p. 329)

In addition, the growing reservoir of experience accumulated with maturity becomes a natural source for learning and coping with life cycle events (Elias, 1979).

Berger (2001), and Havighurst (1972, as cited in Sinnott, 1994), suggested that as individuals transition throughout life, the progression of social roles and associated tasks that drives much of adult development promotes personal growth and new thinking patterns, which are linked to learning and cognitive development. Merriam (2004) agreed with Havighurst, in her premise that development with regard to age-related change is fundamental to learning, particularly with adults. Brookfield (1986) presented a similar viewpoint by Knox, in that adult learning occurs in adjustment and adaptation to developmental tasks and role changes. Perry (1968) and Weathersby (1977) also posited that the developmental process is the underlying cause of differences in adult cognition, ability, intelligence, and personality, as well as in responsibility and knowledge in educational settings (Sinnott, 1994).

Throughout the developmental process, adults tend to respond differently to the societal tasks required of them in each of the identified age-graded stages (Brookfield, 1986). These distinctive stages of the life course, which begin with infancy and continue with childhood and adolescence before reaching adulthood, are a central concept by theorists in our society. In Western civilization, historical and cultural social norms and expectations provide the framework that standardizes age categories, forming a type of social clock that adjusts with changes over time (Tennant & Pogson, 1995). Whereas age-related norms had their beginnings through social expectations, they have become internalized in each individual, and it is this internalization that triggers reactions to and preparations for learning (Neugarten, 1976, as cited in Tennant & Pogson, 1995).

Emerging Adulthood

Emerging adulthood, which encompasses the ages of 18-25, is the first stage of adulthood. Arnett (2000) posited that individuals who have discarded the dependent features of childhood but have not yet achieved the responsibilities of adulthood characterize this stage. Whereas childhood is structured mainly through school and parental frameworks, and adulthood is structured through social roles involving work, family, and society, emerging adulthood is relatively unstructured by any social institution (Arnett, 2007). Without close parental ties or marriage partner, emerging adults are self-focused and self-oriented, free of normative expectations or structured social roles (Arnett, 2000). It is in this period of development that emerging adults begin to obtain their repertoire of experience, without the responsibility of full adult commitment (Arnett, 2007).

The identity of the emerging adult borders on the cusp of adulthood while retaining many characteristics of adolescence, as if to prolong or extend high school and undergraduate lifestyles. Levine (2005, as cited in Arnett, 2007) observed that this trend was detrimental and inhibitive toward work-life readiness, a key element of andragogical philosophy. Shulman and Ben Artzi (2003) also found that distinct reactions to developmental tasks at this stage were unclear. Relative to the age-graded social clock perspective, the socially normed expectations for an individual at the age of 25 is vastly different than it was 50 years ago. In a historical comparison, today's emerging adults are not ready for the adult commitments of yesterday: marriage, steady job, children, and homeownership (Arnett, 2007).

Reminiscent of adolescence, emerging adults maintain an exploratory, experimental view of their world. In doing so, they attempt to balance limited responsibility of independence while continuing to rely on adults. Goldschider and Davanzo (1986, as cited in Arnett 2000) referred to this state as semi-autonomy, or, in andragogical terms, semi-self-directedness. This concept was reinforced by the belief by emerging adults that to achieve adulthood, one must accept responsibility for one's actions and to be able to make independent decisions, a hallmark of self-directedness, which, in western society, is usually achieved by the mid-20s (Arnett, 2000).

In much of the literature, this age group has been included under the "adult" label. Whereas much research has been conducted with regard to patterns and events occurring in the transition between adolescence and adulthood, this age group has not been acknowledged as a distinct developmental period until very recently. According to developmental theorists, biological changes in this timeframe are not evident, and cognitive development centers on changing worldviews acquired in childhood and adolescence (Perry, 1970/1999 as cited in Arnett, 2000; Shulman & Ben Artzi, 2003).

Young Adulthood

The transition from emerging adulthood to young adulthood is intense in the late twenties and completed by the age of thirty, at which time approximately 75% have married and become parents (Arnett, 2000). It is in the thirties that the term young adulthood best applies, when the majority of emerging adults believe that they have achieved the criteria typifying full adulthood: to have the ability to make independent

decisions, to be financially independent, and to have personal accountability (Arnett, 2000).

Most developmental theorists, including Erikson, Valiant, Neugarten, and Levinson categorized young adulthood as the years spanning ages 26 to 39, in which individuals begin a cognitive transition from acquiring knowledge to applying it in everyday life (Berk, 2004; Justice, 1997; Sinnott, 1998; Tennant & Pogson, 1995).. At this stage of development, the developmental tasks triggering readiness to learn embody the very characteristics that were previously identified by emerging adults with a focus on the need to produce and contribute to family and workplace achievement. According to Cross and Markus (1991, as cited in Labouvie-Vief, Chiodo, Goguen, Diehl, & Orwoll, 1995), young adults have a concrete, detailed focus on pragmatic institutional venues that directly benefit family and career. Therefore, the motivation for a return to education is primarily external, to acquire additional skills and knowledge to further develop or advance vocational goals (Justice, 1997).

Young adults are also gaining experience that will eventually lead to expertise (Berk, 2004). As an individual matures, the experience gained builds upon prior knowledge and contributes to overall psychosocial development (Bader & Darkenwald, 1982). At this stage, learning gained from experience is immediately applied toward concrete life tasks and opportunities rather than postponed application (Bader & Darkenwald, 1982; Zmeyov, 1998). The acquisition of experience and knowledge that begins in young adulthood contributes to several cognitive changes that increase through

to middle adulthood, including verbal skills and the amount of working memory, as well as factual and procedural knowledge (Berk, 2004).

Middle or Mature Adulthood

According to developmental theorists including Erikson, Valiant, Neugarten, and Levinson, the years between ages 40-59 are generally referred to as middle adulthood (Berk, 2004; Justice, 1997; Sinnott, 1998; Tennant & Pogson, 1995). In middle or mature adulthood (these words are used interchangeably throughout this study), a paradigm shift occurs with an expansion of social obligations and interest beyond the family focus. Levinson posited that in midlife, adults strive to achieve a balance between the needs of society and the needs of self (Tennant & Pogson, 1995). In theories posited by Erikson and Valiant, the transition toward a more community-oriented lifestyle prompts mature adults to integrate their personal goals into the larger societal welfare with a deeper, more meaningful perspective of traditions, cultural values and philosophies, and laws (Berk, 2004; Justice, 1997).

After age 40, an adult's return to education mostly focuses on the need for learning as a journey toward self-development and personal growth rather than vocational achievement or recognition (Justice, 1997). This focus on quality versus quantity is directly linked to an increasing awareness of mortality and promotes exploration between life experiences and learning (Jacques, 1970 as cited in Sinnott, 1994). Developmental tasks encountered at this stage not only trigger readiness to learn, but also a tendency to seek meaningfulness, purpose, and deeper understanding of the task itself (Sinnott, 1994).

Erikson viewed the developmental tasks of midlife as an existential extension of the self. By mentoring and caring for others, creating or contributing to lasting legacies, and finding satisfactory meaning in one's own life, individuals are able to create personal truth, and through the skills and experience acquired over the years, adults are able and willing to create new realities that are meaningful (Sinnott, 1998). According to Jung (1933, as cited by Labouvie-Vief et al., 1995), at the heart of midlife development lies an increased sense of self as adults examine their motivations and goals with regard to the issues that are meaningful to them. In searching for meaning, adults tend to seek out educational experiences that intrinsically motivate them, thus improving the quality of their lives and those of others.

At midlife, the acquisition of education itself can trigger developmental changes in adults. Learning from the new associations formed between current knowledge and prior experience motivates self-directed change in other aspects of their lives (Billington, 1996; Kerka, 2002). Education provides adults the opportunity to discover meaning, patterns, underlying connections, and reflections of relationships between work, family, and social obligations (Giczkowski, 1998; Sinnott, 1994). Tennant and Pogson (1995) and Brookfield (1996) indicated that educational programs tailored to age graded transitions are the most conducive to adult learning, as each stage has different expectations regarding learning outcomes, different frameworks to evaluate goals, and different interpretations of educational experiences. With maturity comes a cognitive ability to ask significant questions and uncover meaningful, culturally significant

problems, which in turn contributes to further cognitive development (Berk, 2004; Sinnott, 1994).

After the age of 40, creativity takes a central role in cognitive processing, with experience playing an important part (Berk, 2004). Midlife issues and problems are addressed in creative ways, using advanced strategies, different perspectives, and logical analytical thinking, as well as viewing everyday cognitive events in socially constructed frameworks (Berk, 2004; Sinnott, 1998). According to Piaget, the natural maturation of cognition combined with increased societal interaction contributes to personal development (1936/1952, as cited in Davenport & Davenport, 1984).

Adult Cognition

Studies have indicated differences between adults and children at each level of metacognition based on the active use of knowledge and expertise (Kerka, 2002). As their brains physically develop, children's mental abilities evolve and transition from one stage of cognition to another. According to Piaget's cognitive theory, there are four stages of cognition: sensorimotor, preoperational, concrete operational, and formal operational. The sensorimotor stage begins at birth and lasts for two years, during which infants attempt to make sense of their new world through sensory perception and motor skills. The preoperational stage occurs for the next four years, with the main cognitive focus as language development. It is not until the concrete operational stage at age seven that children have the ability to think concretely, mentally manipulate information, and understand reversibility. Finally, at approximately 11 years of age, adolescents enter a formal operational stage of thought that allows them to think abstractly, hypothetically,

and scientifically, thus outgrowing the solitary concreteness of childhood thinking (Berger, 2001; Berk, 2004; Tennant & Pogson, 1995).

Abstract thinking becomes more sophisticated as life events, situations, developmental tasks, and experience provide the impetus to improve strategic thought and enhance thought processes with regard to storage, retrieval, and reconstruction of information (Berk, 2004). The propensity toward more advanced abstract thinking is correlated with the amount of experience incurred, and the strategies used to solve problems and acquire information are enhanced and expanded. According to Bee (2000, as cited in Merriam, 2004) only approximately 50% of adults think at the formal operational stage and most of them do not reach that level until their forties.

Postformal Thought

In 1967, Piaget alluded to the possibility that another, more advanced stage of mental operations might exist past the formal stage (Berk, 2004). In formal operational thought, individuals have the mental capability to reverse relationships between reality and possibility. In addition to the ability to think about thinking and to form abstract hypotheses, one of the most important processes of formal operational thought is the ability to solve well-structured problems. However if problems are subjective, contextual, relativistic, and have multiple causes, the next stage of processing called postformal thought must be attained (Davenport & Davenport, 1984; Sinnott, 1994).

Previously considered as age-related wisdom, Sinnott (1994) described the concept of postformal thinking as a cognitive stage in which logical complexity dominates the thought processes and behavior of mature adults as a way of solving

problems in a social, contextual framework. Developmental research regarding wisdom related cognition and postformal thought has suggested that mature adult thinking has evolved significantly beyond the formal operational stage and appears to be age dependent (Labouvie-Vief, et al., 1995; Merriam, 2004; Sinnott, 1998). Middle-aged adults especially tend to espouse postformal, or truly mature thought by combining abstract objectivity with contextual subjectivity through assimilation and accommodation, with the understanding that there are no absolute answers (Sinnott, 1998).

Objective versus Subjective Thinking

Younger thinkers gradually develop scientific reasoning through experience that requires reflection and evaluation (Berk, 2004). They engage in dualistic thinking, which occurs when comparisons of information against abstract standards yield starkly definitive results such as good or bad, right or wrong (Labouvie-Vief, et al., 1995). Young thinkers also find it challenging to integrate meaningful socio-emotional experience with newly acquired abstract reasoning skills (Blanchard-Fields, 1986, as cited in Sinnott, 1994). Berger (2001) described young adult thinking as rational, impersonal, and objective, in which experiences are categorized in an organized schema. As a result, many younger thinkers have difficulty trying to comprehend complexities that exist in an adult world (Labouvie-Vief, 1985, as cited in Berger, 2001).

Mature thinkers are more subjective in their thinking, taking personal feelings and experiences as well as contextual sensitivity into account (Sinnott, 1998). They also engage in relativistic thinking in which knowledge is situational, rendering a more

flexible and realistic view of the world and offering an opportunity to reflect on and integrate life experiences into new learning (Berk, 2004; Sinnott, 1994). This flexibility allows adults learn to accept, expect, and adapt to inconsistencies and contradictions of daily life (Berger, 2001).

Cognitive flexibility has been linked to increased self-directedness and enhanced vocational experience, allowing mature adults to gain more cognitive problem-solving progress in the areas in which they attain the most experience and transformation of knowledge, contributing to their repertoire of practical intelligence and subsequent expertise (Berk, 2004; Tennant & Pogson, 1995). Research has shown that education and training in specific areas or fields of study increases the cognitive abilities of middle-aged adults, especially if the information is meaningful and relevant to their lives (Schaie, 1996, as cited in Berger, 2001).

Experience and Thought

It has been suggested that the emotional and cognitive aspects of adult development are interrelated as a result of the gradual development of cognitive processes, accumulation of knowledge and experience, and effects of education and socialization on the individual (Schaie, 1979; Sinnott, 1994). Adults take an active role in their cognitive development by constructing knowledge based on the interaction of experience and existing cognitive structures, and when discrepancies between the two exist, learning occurs (Williams, 2001). Both Piaget (1978) and Bruner (1973) linked experience with learning, and cited the importance of reconstructing experiences with which to understand the world (Tennant & Pogson, 1995). According to Tennant and

Pogson (1995), the primary characteristic of mature adult cognition is the ability to think abstractly about the concrete limitations of daily life. In the process, the experience obtained by dealing with concrete problems at work, home, and in the community also contributes to adult growth and development.

Thinking and Intelligence

Baltes, Dittmann-Kohli, and Dixon (1984, as cited in Berk, 2004) posited two important cognitive concepts. First, that procedural knowledge and general factual knowledge are not only maintained throughout middle adulthood, but also have a tendency to increase with information relative to one's occupation. And second, that two additional basic operations exist that are associated with tasks such as logical reasoning, classification, and the perception of relationships: the mechanics and pragmatics of intelligence. The mechanics of intelligence, which encompasses information processing and basic problem solving in childhood and adolescence, decreases due to age related biological declines. Pragmatic intelligence, which is the application of mechanics to specific fields of knowledge, increases throughout adulthood as individuals mature due to continued experience (Sinnott, 1994; Baltes, et al. as cited in Tennant & Pogson, 1995).

In 1988, Sternberg posited his theory of three specific forms of intelligence: analytic, creative, and practical. Analytic intelligence is primarily academic, and focuses on the mental operations for learning, thinking, and remembering. Creative intelligence highlights intellectual flexibility and innovation when faced with new problems or situations (Berger, 2001). Practical intelligence is primarily demonstrated by the adaptation of behavior to situational circumstances, the ability to understand the

expectations of self and others involved, and the awareness of the required skills (Berger, 2001). Of the three intelligences, it is the most highly valued by middle-aged adults, as it focuses on solving practical problems and finding real world solutions.

Cognitive Processing

The processing capacity of the brain increases with maturity due to physical brain development and an improvement in cognitive self-regulation and processing speed (Berk, 2004). Cognitively, increases occur throughout adulthood in crystallized skills that are dependent on experience, accumulated knowledge, and good judgment, as well as in practical problem solving abilities, all of which contribute to heightened expertise and intuition (Berk, 2004). Constant and consistent exposure to knowledge, facts, and information acquired through experience or education enhances crystallized intelligence that increases with age (Berger, 2001; Sinnott, 1998). In measurements of intellectual abilities, crystallized intelligence appears to be a primary component of intellectual functioning (Tennant & Pogson, 1995).

Age related decreases due to declining neuropsychological processes occur throughout adulthood in the fluid skills that include the capacity of working memory, analyzation speed, and basic information processing (Berger, 2001; Sinnott, 1998). As a result, new material or information is not learned or retained as quickly at middle age as in the 20s, requiring middle aged adults to be more internally motivated and selective regarding learning than younger adults (Berger, 2001; Berk, 2004). Declines also exist in the ability to multitask, in switching between mental operations, and in selective attention (Berk, 2004). As a result, older adults tend to develop different cognitive strategies than

those used by younger adults to compensate for memory loss, spatial cognition, and analyzation speed (Sinnott, 1998).

Problem Solving

In younger adults, problem solving centers on data driven processing and gathering, with a narrow attention span and expanded memory ability. Concrete, inexperienced thinkers view problems in abstract rather than contextual terms, due to the lack of experience and knowledgebase (Sinnott, 1998). Mature adult thinkers have a greater tendency to think through problems by viewing them from different perspectives, and to solve them logically and analytically (Berk, 2004). As adults mature, the accumulation of experience provides a foundation for increased intellectual and cognitive growth that enhances the ability to deal with concrete as well as ill-structured problems (Sinnott, 1998; Tennant & Pogson, 1995). The importance of content and context of the problems increases also increases with age, allowing adults to remain open to evaluate outcomes and reevaluate prior judgments (Merriam, 2004). Finally, Schaie (1979) suggested that as adults mature the focus of cognition turns more toward purposeful meaningfulness instead of a simple cognitive response to a situational problem.

Andragogical Principles, Development, and Cognition: How They Relate

Principles

During the first two decades of life, children experience monumental change in cognitive and developmental processes. With respect to learning, pedagogical principles of instruction are consistently and uniformly applied to all children, at all grade levels. Adults also experience change in cognitive and developmental processes, but it occurs

much more slowly and over a longer period of time than in children. Prior to the founding of adult education, adults as well as children were instructed via pedagogical methods, mainly because pedagogy was the only known method of instruction. With the adult education movement, however, it became apparent that pedagogical instruction did not suit the needs of adult learners, and that another learning model better suited towards adults was necessary.

Eventually, andragogical principles and concepts were developed to meet the needs of adult learners; but, similar to pedagogy, andragogy was applied uniformly toward all adults. To fulfill the purpose of this study, it is important to compare the andragogical principles to the norms and expectations of each age group of adults with regard to development and cognition, to determine the compatibility and conduciveness of each towards the appropriate age group.

Self-Directedness

Along the continuum of life development, there is a slow transition from childhood dependency toward self-directedness, which is perhaps the most significant characteristic of adulthood (Knowles, 1984). The acceptance of complete responsibility for one's life and commitment to societal roles and expectations is self-directed in nature, and indicative of adulthood (Cullen, 1999; Pratt, 1988). Beginning around the age of 30, the exploration of and transition into new roles as parents, employees, spouses, and citizens trigger less dependent and more self-directed behaviors (Brookfield, 1986).

In our western society, societal norms and cultural expectations have typically inhibited the development of self-directed tendencies until adulthood (Tennant & Pogson,

1995). Whether or not this deliberate intent to suppress self-directedness is relative to children's and adolescent's lack of ability to solve problems and think abstractly is not clear; however, the behavior is universal among educational, governmental, and other societal institutions (Knowles, et al, 1998). The current research on emerging adulthood has confirmed that between 18 and 25 years of age, young adults are transitioning between the dependency of childhood and the independence of adulthood (Arnett, 2000). Surveys of emerging adults indicate that they acknowledge two important facts: the existence of two key factors that are indicative of adulthood, self-directedness and responsibility; and that they do not yet possess those qualities which qualify them as adults (Arnett, 2007).

Self-directedness is commensurate with the accumulation of experience, practical intelligence, and expertise. The cognitive flexibility exhibited by mature adults enhances their problem solving abilities and enriches the practical intelligence gained in the areas in which they excel. Research has shown that education and training in specific areas or fields of study increases the cognitive abilities of middle-aged adults, especially if the information is meaningful and relevant to their lives (Schaie, 1996, as cited in Berger, 2001). It takes approximately ten years to build enough experience in a particular field or area for an individual to qualify as an expert (Berk, 2004). Considering that a typical adult does not have a vocational or generative focus until age 30 or later, another ten to fifteen years of experience places expertise clearly within the realm of mature adulthood.

Readiness to Learn

Developmentally, readiness to learn is typically triggered by developmental tasks that are driven by societal expectations and norms (Feuer & Gerber, 1988; Knowles, 1984; Sinnott, 1994). The review of the literature tells us that developmental tasks are more likely to occur in young and mature adulthood than in emerging adulthood, because of the changing nature of societal expectations and normed behaviors (Arnett, 1998; Kerka, 2002; Knowles et al., 1998). A certain amount of life experience is necessary for adults to adequately respond to developmental tasks, and individuals in emerging adulthood do not have the repertoire of experience necessary to provide a basis or framework for learning (Arnett, 2000).

Readiness to learn in children and adolescents is triggered by achievement-oriented goals, not developmental tasks (Ozuah, 2005). And, because the emerging adult is not developmentally ready for independent responsibility, they tend to continue the achievement-orientation path toward a personal goal of immediate fulfillment and self-gratification (Arnett, 2007). It is not until the thirties and forties that individuals assume the social roles and responsibilities as spouses, parents, employees, and committed citizens, and become ready to learn the skills and acquire the knowledge to fulfill the roles successfully.

Experience

Individuals begin to accumulate experience in childhood. In the pedagogical methodology, children's experience is ineffectual, thereby requiring a teacher and subject-centered orientation to learning to replace the role of experience in learning

(Ozuah, 2005). Based on this type of instruction, children are not skilled to drawn on their own, albeit limited, amount of experience as a resource for learning. This tendency to dismiss or discount experience as a key learning tool exists throughout childhood and adolescence, and it is not until individuals reach adulthood or levels of higher learning that the role of experience is recast as a valuable learning resource.

It has been said that true learning in adulthood comes from the experience accumulated in response to life's developmental tasks (Elias, 1979). Experience derived from social roles and expectations, as well from as the multiple contexts of life situations helps in the creation of opportunities to learn from daily tasks, solve problems, and cope with the environment (Jarvis, 1987; Sinnott, 1994; Tennant & Pogson, 1995). With age, the interpretation of experience changes as it becomes filtered through socio-cultural expectations and norms, prompting a search for meaningfulness and understanding and triggering a re-evaluation of current experience that often results in a desire for new growth experiences at maturity (Sinnott, 1994; Washburn, 1996).

Cognitively, experience plays an important role with regard to the development of expertise. In cognitive developmental literature, the development of expertise comes from accumulated experience in and an increased ability to identify, solve, and evaluate complex problems of a particular field or area of interest (Berk, 2004; Tennant & Pogson, 1995). Because these components are age dependent, expertise is primarily identified in mature adults and rarely in emerging or young adults. As adults mature, so does the enhanced ability for divergent thinking, which allows for the existence of a variety of schemas (Labouvie-Vief et al., 1995). The tendency for adults to reconstruct experiences

to fit these schemas is typically triggered by the transitions between developmental stages, resulting in enhanced understanding and the creation of new meaning, which are two characteristics of mature adulthood (Brookfield, 1986; Tennant & Pogson, 1995). Experiential reconstruction also provides adults the opportunity to reinterpret past experiences and apply them to new information, thereby creating new knowledge and often resulting in a new view of oneself and one's meaning of life (Berger, 2001).

Internal Motivation

In the pedagogical literature, children tend to be externally motivated toward goals set by parents, teachers, or other authority figures (Cullen, 1999; Ozuah, 2005). Adults, in contrast, tend to be internally motivated toward self-directed goals they set for themselves. Most of the time, goal-setting is a conscious effort to address known shortcomings in terms of knowledge or skills. However, some developmental tasks and life cycle events often trigger needs about which the adult is unaware, internally motivating the adult obtain the skills and knowledge necessary to meet and satisfy those needs (Cullen, 1999; Justice, 1997; Kerka, 2002). This is particularly important and commensurate with the decline in processing and fluid skills in mature adults, thus fulfilling the growing desire and impetus to replace processing speed with experience (Berk, 2004).

Transitions between developmental stages also prompt a continuous redefinition of quality of life, thereby internally motivating adults to make change. Emerging adults have a self-centered quality of life in which personal gratification and limited responsibility play a central focus (Arnett, 2000). In young adulthood, adults are more

motivated to produce and contribute, with a primary focus on family and vocation (Justice, 1997). In mature adulthood, individuals are more motivated toward personal growth, development, and meaningfulness, both for themselves and for the communities in which they live (Cullen, 1999; Justice, 1997). Finally, the tasks and problems that arise as a result of developmental transitions internally motivate adults to shift their perspective to a more problem-centered orientation (Kerka, 2002).

Orientation to Learning

As individuals mature throughout the lifespan, a gradual shift from pedagogical subject-centeredness to a problem-solving orientation occurs in tandem with age-related cognitive development. Pedagogical methodology operates under the 'here and now' ideology, in that learning is subject centered and intended for future application rather than immediate application (Knowles, 1984; Ozuah, 2005). For children who transition through several cognitive developmental stages throughout childhood, this is an appropriate methodology, as children have a limited knowledge and experiential base from which to draw and must rely on teacher or parental direction in problem solving (Berk, 2004; Williams, 2001).

As problems become more complex, intense and life-relevant, so does the ability to solve them. Adult orientation to learning focuses on solving problems related to developmental tasks, daily issues, and societal roles (Davenport & Davenport, 1984; Knowles, 1984). Developmental transitions trigger needs that require immediate resolution and application of problem solving strategies (Beder & Darkenwald, 1982; Justice, 1997; Tennant & Pogson, 1995). The continued application of problem solving

processes contributes to enhanced cognitive abilities, and the experience it provides along with increased crystallized intelligence subsequently leads to the development of expertise, which is prevalent in middle or mature adulthood (Berk, 2004; Davenport & Davenport, 1984; Tennant & Pogson, 1995).

Personal growth, maturity, and experience lead to increased success in solving problems at work, at home, and in the community. As adults mature, they tend to ask more meaningful questions and employ different perspectives when faced with problems (Sinnott, 1994). In addition, adult thinkers often use postformal thought processes to approach ill-structured problems, and make good use of the abstract objectivity and contextual subjectivity that characterizes maturity and wisdom (Sinnott, 1998). Mature adult thinkers also possess the ability to know their limitations and shortcomings, thus illuminating the skills and abilities they need to know and learn to enhance personal progress.

Need to Know

In Western society, children and adolescents function within an authoritative system that requires adherence to mandated rules, policies, and requirements with little room for question. Children and adolescents are taught to accept instruction and authoritative decision making as final and irrefutable. Pedagogical methodology is aligned with this narrow type of thinking, in that teachers are central to learning and tell children what they need to know (Knowles, 1984; Ozuah, 2005). The information, which is generally subject related, is learned with the expectation of external reward (grades, approval, etc.).

Constant exposure to this aspect of pedagogical methodology throughout childhood and adolescence renders it difficult for adults to transition from being told what and how to determining how and why on their own. The ability to question why, what learning is important or relevant, and the need to know or understand why something is required is characteristic of maturity and generally not found in emerging adulthood (Arnett, 2000). Problems generated by developmental tasks, life changes, stage transitions promote an internal responsibility and desire to know why and what is necessary for resolution, triggering a need for learning to acquire necessary skills and knowledge (Cullen, 1999; Brookfield, 1986). With maturity, not only is the need to know a driving force in adult decision-making, but adults also probe for meaningfulness of a particular task and reject what is deemed irrelevant and unnecessary (Cullen, 1999).

Summary of Literature Review

The review of the literature reveals a strong indication that developmental concepts and theories are more supportive of mature adults rather than of younger adults. The amount of experience, one of the key andragogical concepts, is not as robust for emerging adults as it is for young and mature adults, which inhibits in-depth synthesization of new learning with existing knowledge. Self-directedness, another key indicator of andragogical focus, appears strong in more mature learners than in younger learners. The existence of developmental tasks is more prevalent in the lives of younger and more mature learners, thus prompting further andragogical considerations of need to know and readiness to learn, both of which still need to be externally provided to emerging adults. In terms of learning, the uniform application of instructional strategies

and methods predicated on andragogical principles to all adults in educational institutions appears to be ineffective, suggesting that a new set of andragogical principles be developed specifically for emerging and younger adults.

Most of the research and subsequent results that appear in the literature focuses on the perspective of the educator and modification of educational strategies to include andragogical concepts. These studies include Hadley's 1975 Educational Orientation Questionnaire, Suanmali's 1981 Andragogy in Practice Inventory, and Conti's 1978 Principles of Adult Learning Scales. By researching the applicability and suitability of andragogical assumptions towards specific stages of adulthood through a student perspective, instructional strategies and methods based on andragogical principles as they currently exist can be tailored towards appropriate levels of adult acceptance.

In the review of the literature, only two studies were found that measured the impact and influence of andragogy from a student perspective: Christian's (1982) Student Orientation Questionnaire (SOC), and Wilson's (2005) Adult Learning Principles and Process Design Elements Questionnaire (ALPDEQ). Upon further investigation between the two research studies to determine the most applicable instrument to use in the current study, the SOC did not appear useful or applicable, mainly because the student population surveyed was comprised of individuals in a military environment. This posed a problem regarding its suitability in educational venues, based upon the expectations, norms, adult characteristics, and learning styles typically found in military environments with regard to andragogical principles, specifically internal motivation and self-directedness.

The ALPDEQ, however, appears to be conducive for the purposes of this study, as the survey population was drawn from an educational audience and poses similar hypotheses and research questions applicable to this study. The difference between the ALPDEQ and this study lies in the demographics of the educational population. Whereas Wilson's (2005) population was drawn from a post-secondary, graduate level educational setting, the populations for this study will be drawn from undergraduate and community college educational settings. In her dissertation discussion, Wilson suggested that

> "Future research should also examine andragogy's effect on the growing undergraduate student population…this research project only examined graduate students, but intuitively there would seem to be obvious differences between undergraduate and graduate students that impact their learning outcomes…as the numbers of non-traditional students rise, there is a possibility of multiple generations engaged in learning in the same classroom…it appears reasonable to conclude that vast research opportunities exist to examine age related differences in adult learners and their impact on learning outcomes…although age was not indicated as a predictor for learning or satisfaction in this study, it could possibly contribute significantly as a predictor in learning in other studies, especially those examining andragogy in an undergraduate educational setting where the chances to have a larger variance in student age are more likely" (2005, p.206-207)."

Wilson realized the importance of andragogy's influence on the adult learner, especially the need to delineate age in relationship to the acceptance of the principles. In chapter 2, the background for and a historical explanation of the transition from pedagogical methodology and principles to adult-oriented, andragogical methodology and principles was presented to completely understand the dependent variables in this study. Chapter 2 also included a detailed discussion of adult development and cognitive

theory as an appropriate framework by which to synthesize and discuss the results of the research approach and design that are presented in chapter 3.

CHAPTER 3:

METHOD

Introduction

This chapter provides a complete discussion of the research method and design that were used to undertake this study. The major components of the chapter include the justification for the research design, a detailed description of the population sample, a discussion of the instrument and materials, and information regarding the method and procedure of data collection and analysis.

Research Design and Approach

A cross-sectional, quantitative, descriptive research approach was appropriate for a study of this kind, as it focused on the assessment of attitudes and preferences with regard to demographics and practices (Gay & Airasian, 2000). Accordingly, an affective research tool, such as a Likert scale, is appropriate for descriptive data collection. In this study, a Likert-type scale survey measured student preferences and inclinations toward andragogical principles (Wilson, 2005). A descriptive survey research design was implemented to determine whether or not statistically significant differences existed between the independent variable (student age) and dependent variables (andragogical principles and satisfaction). The design also provided results that clearly indicated which age group was most accepting of each individual andragogical principle as well as the principles as an entire construct. Entire groups of students, rather than individual students, were chosen for this study as samples of convenience, bounded by similarity in environment. According to Gay and Airasian (2000), the use of equivalent, similar

groups lent strength to a study of this type. Maintaining consistency with respect to student demographics, specifically undergraduate and community college adult learners, contributed to group equivalence.

The independent variable in this study was student age. Additional demographic data were also collected for future analysis and continued study outside of this dissertation. Such data included gender, ethnicity, years between prior high school or college attendance and current attendance, full-time versus part-time student status, length of work experience, full time versus part time work status, the number of courses completed toward degree, undergraduate discipline, work experience related to course material, and home environment. The andragogical principles of interest in this study were self-directedness, readiness to learn, experience, (internal) motivation, and the need to know. The sixth andragogical principle of orientation to learning, while not included in the ALPDEQ instrument design, was factored in with motivation. Its measurement and inclusion as a separate construct in future designs and administration of this instrument will provide an opportunity for further research.

The first analysis included age as the independent variable, and all of the andragogical principles as dependent variables to determine individual differences between age groups and overall acceptance of individual principles. The second analysis also used age as the independent variable to determine whether or not there was a difference between age groups on course satisfaction, which was also supportive of the andragogical assumption of motivation. Finally, the third analysis determined the influence of age and all five andragogical principles on course satisfaction. The results of

all three analyses were expected to support the projected hypotheses posited by the research questions in chapter 1.

Justification for Design and Approach

A review of the literature revealed a paucity of empirical research with regard to the effectiveness and applicability of andragogical principles toward learning. Rachal (2002) lamented that the variance between conceptual andragogy and actual practice was problematic, in that institutions continued to compromise the efficacy of andragogical principles by employing them uniformly among traditional and non-traditional adult students. His observation that community colleges tended to blur the proverbial age barrier by enrolling more mature adults was supportive of the demographics of the representative sample in this study. Feuer and Geber (1988) further claimed that the tendency to lump adult learners into one category failed to take into account the diversity of learning that exists within the category itself.

Therefore, it was the intent of this study to contribute to the empirical literature with the expectation of raising awareness and stimulating interest in the andragogical process of learning in adult education. By empirically isolating the adult age stage best suited to andragogical principles and processes, future research can focus on the stages that are least applicable, thereby providing a narrower framework for development of new, adjusted principles suitable to them for optimum learning.

Sample and Setting

Participants

One set of participants in this study were male and female adult students between the ages of 18 and 59, enrolled in daytime and evening introductory psychology courses at three campuses of a community college in southern Texas. When it became apparent that the number of expected respondents was clearly not being met, another set of participants was derived from a convenience sample obtained from the Walden University Participant Pool as an attempt to attain the expected sample size of participants.

Sampling Method and Size

Convenience sampling was the method used in this study, due to the availability of and accessibility to a large pool of local community and online undergraduate college students. The target population of adult students enrolled in introductory psychology courses at the three local community college campuses was approximately 600 students, and the approximate population for the Walden Participant Pool was 400. Therefore, an Internet based sample size calculator (Creative Research Systems, 2009) revealed that based on a population of approximately 1,000 students, a sample size of approximately 241 participants was appropriate with a confidence level of 95% and confidence interval of 5.5. To capture the optimum number of participants, the survey remained live online for five weeks and it was at the sole discretion of the participants whether or not to log on and submit the survey. After the five weeks, a total of 59 completed surveys were submitted, which equated to an approximate response rate of 17%, which was less than

expected, but still enough to analyze. To maintain group equivalence and provide optimum access to the diversity of age groups, online, daytime, night, and evening classes were included in this study. In the community college setting, psychology courses other than introductory psychology were excluded, as they were considered 'second level' courses for which the introductory psychology course is a pre-requisite.

Setting

The entire data collection process was conducted in the online environment. The two page, online survey was created using the Survey Monkey website, using a radio button design for ease of use. A link to the survey was forwarded to the community college IRB representative via email, which was then distributed via electronic email to all students enrolled in introductory psychology courses at the three local community college campuses as listed in the college database.

The same survey was administered in an electronic survey format to volunteers in the Walden Participant Pool. A link to the electronic survey was published on the Walden Participant Pool Website where registered participants anonymously completed the study online.

Instrumentation and Materials

Instrument

In an extensive research of adult learning literature, it was evident that few empirical instruments exist to measure andragogical constructs. Hadley's (1975) Educational Orientation Questionnaire, Conti's (1978) Principles of Adult Learning Scales, Suanmali's (1981) Andragogy in Practice Questionnaire, Christian's (1982)

Student Orientation Questionnaire, and Knowles's (1987) Personal HRD Inventory all had andragogical constructs as their focus, but from the viewpoint of the educator rather than the student.

In her research, Dr. Lynda Wilson recognized the paucity of empirical instruments and the lack of student perspective in existing empirical andragogical measurement tools. Therefore, in 2005 Dr. Wilson developed the Adult Learning Principles Design Process Elements Questionnaire (ALPDEQ) as an empirical tool to measure five out of six andragogical constructs: motivation, readiness to learn, experience, the need to know, and self-directedness, from a educator and a student perspective. (The sixth construct, orientation to learning, was not supported during development of the instrument; therefore it is not included in this study.) Wilson's complete dissertation from which the ALPDEQ was developed can be located on the Internet public domain as well as through Walden University's dissertation database. Regarding the development of ALPDEQ, Wilson (2005) lamented "as of today, leaders in the field don't have enough empirical evidence to answer the primary question of whether andragogy is effective for every adult learner in every adult learning setting" (p.47). This statement not only prompted her to develop the instrument, but also inspired the author of this dissertation to choose it as the instrument for current research.

The design of the ALPDEQ included a process to establish reliability and content validity, a thorough research of prior instruments, a development of a survey pool of items specific to andragogical principles, a comprehensive review from a panel of experts

with PhD degrees in the area of adult education, a revision process based on review recommendations, and actual testing (Wilson, 2005).

The establishment of content validity is fundamental in the creation of a credible research instrument (Wilson, 2005). The content validity for the ALPDEQ was established prior to 2005 by a review panel of four PhD experts in the fields of adult education and human resource development, all of who had significant knowledge regarding andragogical principles. Wilson's process of content validity establishment included the solicitation of comments regarding their understanding and critical assessment of the instrument, as well as responding to six validity-related questions. The results of the process satisfied the panel of experts who declared the ALPDEQ a valid instrument with minor adjustments is in Wilson's (2005) dissertation.

Regarding reliability, Cronbach's alpha tested the reliability of each test item in the scale. Initially, most of the scales indicated strong reliability and overall internal consistency of items. The strongest indication of reliability considered by Wilson (2005) was motivation, at $\alpha = .93$, and the weakest was readiness at $\alpha = .81$. See Table 2 for a list of values for Cronbach's alpha for the ALPDEQ.

The original ALPDEQ instrument was designed with each independent variable comprised from a group of several characteristics of the target population. In the interest of clarification, Wilson (2005) labeled each group of independent variables as an overall total score of characteristics pertaining to five areas: faculty, student, andragogical principles, andragogical design elements, and course content. Each characteristic within the overall total scores was then treated as a sublevel of the independent variable group.

In the current study, only the sublevel variable of age in the student characteristics overall total score will be used and will consist of the student responses to the individual items that will be summed and compared. None of the remaining variables in the student characteristics overall total score, or any in the other overall total scores were relevant to the purpose of this study and were not included. The ALPDEQ solicited student responses in two areas: agreement with andragogical principles and course satisfaction. Accordingly, only those questions linked to age in the student characteristics overall total score were used, as well as questions factor loaded for andragogical principle measurement and course satisfaction.

Through factor analysis, Wilson (2005) was able to correlate specific survey questions to andragogical constructs and course satisfaction. Factor loading allows for interpretation of the role of variables in defining and representing the factor (Hair et al., as cited in Wilson, 2005). Ensuring appropriate and accurate factor loading was essential for Wilson in the design of the ALPDEQ, as it was a pioneer instrument for the empirical measurement of andragogical principles. To ensure quality, Wilson scrutinized item retention by incorporating a minimum threshold of .40 to retain an item. Both a Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy result of .975KMO and a .000 significance result of the Bartlett's test for sphericity provided support for the acceptance of factor analysis as appropriate for andragogical principles. Wilson (2005) determined that the five factors that emerged were consistent with principles of andragogical concept, and were therefore retained in the design of the instrument. Two dependent variables,

satisfaction and learning, were also factor analyzed and initially retained, but only course satisfaction proved to be a viable, measurable outcome supported by the instrument.

Each question was answered in a Likert scale format, where each student chose from five categories: strongly agree, agree, not applicable, disagree, and strongly disagree. The categories were weighted from 5 to 1, respectively. There were 44 questions on the survey, the last 14 of which were demographic in orientation. According to Wilson's design, specific questions were mapped to qualifying andragogical principles as follows: questions 1-3, self-directedness; questions 4-7, need to know; questions 8-10, readiness to learn; questions 11-13, experience; questions 14-21, motivation. In addition, questions 27-30 indicated course satisfaction. Each of these items was summed to derive the subscale scores supportive of each andragogical construct listed above. An example of the question item is as follows: *I know why this learning experience is beneficial to me.* A complete list of questions and corresponding constructs can be found at the end of this dissertation in Appendix A.

The independent variable in this study, student age, was based on interval measurement and was comprised of three levels: 18-25 years, 26-39 years, and 40-59 years. They were dummy-coded as follows: first level (18-25 years) was assigned a point value of 1, the second level (26-39 years) was assigned a point value of 2, and the third level was assigned a point value of 3. (See Appendix C for a complete list of statistical point values for all variables in the study.)

The dependent variables in this study were in turn each individual andragogical principle and course satisfaction. Similar to the independent variables, they were also

operationalized as weighted responses using a five-category Likert scale. Scale scores ranged from 5 for *strongly agree* to 1 for *strongly disagree*.

Materials and Procedure

Approval to collect data was requested and received via email communication from the Walden Institutional Review Board (IRB) with approval number 02-12-09-0302416. Once approval was received from the Walden IRB, contact was then made with the IRB representative for the community college as well as the Walden Participant Pool, both of whom granted permission via email to access their respective student populations and collect data. The community college IRB representative acted as the liaison between the researcher and the student population with access to the email addresses for the target student population to receive the survey link. This process further protected student anonymity, as the researcher did not have direct access to the student email address database. Upon receiving the emails containing the request for participation and survey link, students had the option to either complete the survey or delete the email without repercussions. The process for the Walden Participant Pool participants required no intervention other than setting up the survey on the website for student accessibility online.

After all approvals were in place, contact was via email to the community college behavioral science department chair to introduce the researcher and the study. The department chair was asked to provide email addresses or telephone numbers of all introductory psychology instructors. The researcher then personally emailed each of the

instructors to provide information about the research study so that they could field questions about and promote the intent of the research to the students.

Walden Participant Pool students logged in to the website and simply clicked on the imbedded link to access the online survey. The web-based survey itself was four pages long; the first few pages included a letter of introduction by the researcher and explanation of informed consent, followed by pages including the survey questions and demographic data. See Appendix B for a copy of the survey as it appeared on the website. In print, it appears as longer than four pages; however, in the web-based environment, it was much shorter.

The letter of introduction emailed to the community college students and provided to the Walden Participant Pool website served to introduce the instrument and the doctoral student researcher, and the explanation of informed consent advised that: a) taking the survey implied informed consent; b) the anonymity of respondents and confidentiality of survey responses would be respected; c) the students were encouraged but not required to complete the survey; d) there were absolutely no repercussions for nonparticipation; e) email address of researcher and phone contact for Walden University Research Participant Advocate; f) their participation would benefit research to improve the educational experience of adult learners, with the vision of better suiting their learning needs.

Participants were reassured that there was minimal risk involved with participation in the survey, and that all results would remain confidential. Because demographic data collected on the survey did not include personally identifiable

information, anonymity was guaranteed. All raw data, survey information and corresponding statistical analysis pertaining to the research would remain in a password protected laptop file to which only the researcher had access.

Data Collection and Analysis

After the termination of the survey timeframe, the completed survey results were downloaded from Survey Monkey electronically into the researcher's laptop. The raw data, copies of which are still securely housed on the laptop, were entered into SPSS statistical software manually, and then analyzed by appropriate statistical procedures. In this research study, along with each individual andragogical principle, there was one dependent variable: course satisfaction. The first of the three most appropriate statistical procedures for use in this study was the multivariate analysis of variance (MANOVA). With a multi-level independent variable and multiple dependent variables, the implementation of the MANOVA procedure controlled for the inflation of the familywise error rate as well as the possibility of making a type I error (Field, 2004). The second statistical analysis implemented a one-way ANOVA, and the third was a multiple regression analysis. An alpha level of .05 was used to determine statistical significance.

The following research questions and subsequent hypotheses were determined by a careful review of the literature regarding andragogical principles and assumptions.

Research Question 1. How do the three age groups differ in terms of acceptance of andragogical principles as indicated by scores on the ALDPEQ?

A MANOVA statistical procedure will determine the outcome of the hypotheses indicated below.

H_{o1}: There will be no statistically significant difference in level of acceptance of andragogical principles across the different age groups.

H_{a1}: There will be a statistically significant difference in level of acceptance of andragogical principles across the different age groups.

Research Question 2. How do the three age groups differ in course satisfaction as indicated by scores on the ALPDEQ?

An ANOVA statistical procedure will determine the outcome of the hypotheses indicated below.

H_{o2}: There will be no statistically significant difference in course satisfaction across the different age groups.

H_{a2}: There will be a statistically significant difference in course satisfaction across the different age groups.

Research Question 3. To what degree do age and andragogical principles predict student satisfaction?

A multiple regression statistical procedure will determine the outcome of the hypotheses indicated below.

H_{o3}: There will be no statistically significant relationship between age and andragogical principles on student satisfaction as indicated by scores on the ALPDEQ.

H_{a3}: There will be a statistically significant relationship between age and andragogical principles on student satisfaction as indicated by scores on the ALPDEQ.

The process by which to measure whether or not there is a relationship between the andragogical principles and age was clearly defined in chapter 3. An online-based

Likert-scale survey instrument drawn from the ALPDEQ was used to measure the effect of age on the andragogical principles from a target sample of community college and online participant pool participants. In chapter 4, a statistical analysis of the results of the survey will determine the answers to the research questions posed in this study.

CHAPTER 4:

RESULTS

In this chapter, the results of the data analysis for this study will be examined. The cross-sectional descriptive research design was appropriate for the demographics of the population, as it assessed the attitude of the population toward the topic in a single time period. An evaluation of the statistical results of the data determined whether or not statistically significant differences exist between the independent variables (student age) and dependent variable (satisfaction).

The purpose of this study was to provide support for the delineation of age ranges in the application of andragogical principles toward adult learning. The identification of the age groups that are best suited to the principles will allow educators to apply the principles to both teaching and learning strategies in the classroom. This chapter will provide a brief discussion of the survey results, an overview of the population surveyed, and an extensive analysis of the results.

The electronic survey was accessible online at Survey Monkey for a period of 5 weeks. Whereas the original ALPDEQ survey questions were administered to participants at the end of the course term, the participants in this research study were midway through the course term. Therefore, it was prudent to change the verbiage of the survey questions from past tense to present tense. Each of the target populations was provided a separate weblink to the same survey site, so that data collection could be monitored separately for both populations. The results for both populations were then

combined and downloaded from Survey Monkey into an Excel spreadsheet. The spreadsheet was then uploaded into SPSS 17 for analysis.

Sixty respondents began the online survey instrument, 13 males (21.7%) and 46 females (76.7%), however only 59 completed the surveys. Eighteen respondents (30%) were between the ages of 18-25, 22 respondents (36.7%) were between the ages of 26-39, and 20 respondents (33.3%) were 40-59 years of age. Forty-seven of the respondents were enrolled at south Texas community college, and 13 individuals responded from the Walden University Participant pool.

Table 1

Student Characteristics: Age and Gender

	Frequency	Percent
18-25	18	30.0
26-39	22	36.7
40-59	20	33.3
No Response	0	0.0
Total (N)	60	100.0
Male	13	21.7
Female	46	76.7
No Response	1	1.7
Total (N)	60	100.0

Reliability Analysis

Prior to parametric statistical analysis, a reliability analysis was performed to ensure internal consistency between the reliability of the original ALPDEQ survey scores and the survey scores obtained in this study. As in Wilson's (2005) original study, the survey questions are grouped according to a specific andragogical construct. Cronbach alphas for three of the constructs, need to know, readiness, and motivation were .76, .80, and .90, respectively, indicative of strong internal consistency. Scale means were 4.45 (*SD* = 1.88) for need to know, 4.19 (*SD* = 2.00) for readiness, 4.25 (*SD* = 4.63) for motivation. Cronbach alphas for experience and self-directedness were .67 and .60, with

scale means of 4.32 (*SD* = 1.57) and 4.28 (*SD* = 1.74), respectively. As indicated in Table 2, the means and alphas are comparable between this study and the original ALPDEQ, especially with regard to need to know, readiness, and motivation. The Cronbach alpha for course satisfaction was also found to be reliable at .80 (*M* = 4.03, *SD* = 2.52), which is comparable to the alpha indicated in the original ALPDEQ.

Table 2

Comparison of Reliability of Test Item Constructs and Cronbach alpha Coefficients for Original ALPDEQ and Current Study

	Original ALPDEQ			Current Study		
Variable	α	*M*	*SD*[a]	α	*M*	*SD*
Self Directedness	.74	3.82		.60	4.82	1.74
Need to Know	.76	3.90		.76	4.45	1.89
Readiness to Learn	.81	3.50		.80	4.19	2.00
Experience	.84	3.67		.67	4.32	1.57
Motivation	.93	3.91		.90	4.25	6.29
Course Satisfaction	.80	3.53		.64	4.03	2.52

[a] *SD* not available from original study

Research Question 1

The first research question determined how the three age groups differed in terms of acceptance of andragogical principles as indicated by scores on the ALDPEQ.

To address the question of whether or not the three separate levels (18-25, 26-39, 40-59) of the independent variable (age) differed with respect to the dependent variables (acceptance of the five andragogical principles: self-directedness, readiness to learn, motivation, experience, need to know), a multivariate analysis of variance test was performed at an alpha level of .05, as recommended by Field (2004). To determine the significance of a MANOVA result, the eigenvalues of Wilks lamda and Pillai's Trace tests are identified, measured, and compared to the probability of obtaining the results by chance. In essence, the smaller the value, the more statistically significant the result. In this study, the results of the MANOVA were not statistically significant as indicated by a high Wilks lambda = .82, $F(10,104) = 1.10$, $p > .05$, $R^2 = .10$, and Pillai's Trace = .19, $F(10,106) = 1.10$, $p > .05$, $R^2 = .10$. Box's test was significant ($p = .003$) and the results of Levene's test were not significant ($p > .05$), thus ensuring normality of assumptions (Field, 2004, p. 398). A two sample Kolmogorov-Smirnov test reported a normal distribution of the means of the dependent variables, $p > .05$. The observed power level was .55, which was less than the adequate acceptable rate of .80, according to Murphy and Myors (2004), but still above the marginal line of risk for failure.

Table 3

Test of Between-Subjects Effects of Age for Each Andragogical Principle as Reflected in MANOVA Results and Analysis of Variance Result for Course Satisfaction

n = 60

Variable	df	*F*	η	*p*
Self Directedness	2	1.79	.060	.17
Need to Know	2	1.66	.056	.20
Readiness to Learn	2	1.22	.042	.30
Experience	2	2.50	.082	.09
Motivation	2	3.64	.115	.03*
Course Satisfaction	2	.468	.016	.629

*$p < .05$

Research Question 2

The second research question addressed how the three age groups differed in terms of course satisfaction as indicated by scores on the ALPDEQ. With reference to the difference between the age groups and course satisfaction, the ANOVA analysis did not reflect a statistically significant difference among the age groups for the dependent variable course satisfaction, $F(2, 56) = .47$, $p = .63$, $\eta^2 = .016$.

Research Question 3

The third research question addressed the degree to which age and andragogical principles predict course satisfaction. To address this question, a multiple regression analysis was performed at an alpha level of .05. Age and the five andragogical principles

were the predictors, and course satisfaction was the dependent measure. The analysis revealed that together, the predictors (age and andragogical principles) explain a proportion of variance, $R^2 = .31$, $F(6, 52) = 3.80$, $p = .003$, with adjusted $R^2 = .225$. Table 5 displays the unstandardized regression coefficients (B), standardized regression coefficients (β), t values, and significance for each variable.

Table 4

Regression Results of the Influence of Age and Andragogical Principles on Course Satisfaction

Variable	B	β	*t*	*p*
Age	-.112	-.033	-.262	.794
Andragogical Principles				
Self-Directedness	.676	.453	3.028	.004***
Need to Know	-.078	-.066	-.459	.648
Readiness to Learn	-.195	-.147	-.785	.436
Experience	-.009	-.006	-.042	.966
Motivation	.174	.326	1.443	.155

***$p < .001$

In terms of individual relationships between the independent variables and course satisfaction, only the variable of self-directedness ($t = 3.03$, $p = .004$) significantly predicted course satisfaction. However, together, the combination of age and the five andragogical principles contributed to almost 22% in shared variability.

Summary of Analyses

The results of the MANOVA indicated no significant difference in the level of acceptance of four out of five of the andragogical principles across the age groups, thus failing to reject the null hypothesis for the first research question.

The second research question asked if there would be a statistically significant difference in course satisfaction across the age groups. The results of the ANOVA procedure clearly indicated that there was no statistically significant difference, thereby failing to reject the null hypothesis. However, with regard to the third research question, to what degree did age and acceptance of andragogical principles predict course satisfaction, the combination of the two variables significantly predicted course satisfaction, thereby rejecting the null hypothesis.

Overall, the results of this study indicated that the andragogical principles are conducive to adults of all cognitive and developmental stages. A thorough interpretation of the findings from these analyses related to the current literature as well as implications for future studies is warranted and will be discussed in chapter 5.

CHAPTER 5:

SUMMARY, RECOMMENDATIONS, AND CONCLUSION

Introduction

Understanding how adults at differing ages would respond to the application of Knowles's andragogical principles is the purpose of this study. The necessity for this empirical research was clearly indicated throughout the literature each time adult learners were addressed as one singular, homogenous group. It became apparent that the determinations of the age at which learning transitions occur were not only appropriate, but also necessary to enhance the adult learning experience. The empirical delineation of age groups toward which the andragogical principles are suited will contribute not only to the andragogical literature, but also toward the mounting evidence that supports the existence of andragogy as a theory rather than simply a method of instruction or model of learning.

This cross-sectional, descriptive study was designed to determine whether or not a difference existed between age groups with regard to the acceptance of andragogical principles and course satisfaction, and also to determine the influence of age and acceptance of principles on course satisfaction. Sixty college students between the ages of 18 and 59 were surveyed online. The participants were divided into three age groups: 18-25, 26-39, and 40-59. A MANOVA analysis was performed that determined no group differences existed in acceptance of four out of five dependent variables (principles). The ANOVA analysis determined no difference between the age groups with regard to course

satisfaction. However when age was combined with the andragogical principles, it was predictive of course satisfaction.

A synthesis of the developmental and cognitive literature with andragogical principles strongly suggested that andragogical principles were more applicable to mature learners than emerging or young adult learners. Self-directedness, experience, and motivation were found to be key elements in andragogical literature, and strongly identified with maturity and age. The existence of developmental tasks and transitional stages were identified as triggers for readiness to learn and the need to know, especially in more mature adults. Cognitively, experience and motivation were also noted as significant principles within a mature adult framework. A close examination of the reported results will determine whether or not this study was effective in supporting what was presumed in the literature. It will also determine whether or not the results sufficiently address the problem statement as posited in chapter 1.

Interpretation of Findings

To answer the first research question, which asked how the three age groups differed in terms of acceptance of the principles, the MANOVA indicated no significant difference in the areas of self-directedness, need to know, experience, or readiness to learn. It did, however, indicate that the principle of motivation was embraced by all three age groups and most significantly by the mature learner.

Self-Directedness

The andragogical literature tells us that self-directedness is one of its most important principles, suggested to be a result of the maturation and aging process. Studies

of adult learning also indicated that adults tend to learn best in self-directed adult settings (Brookfield, 1986; Knowles, 1994; Sinnott, 1994; Tice, 1997). Surprisingly, the results of this study did not support those suppositions from the literature. There are several possible reasons for this finding, one of which reflects back to Knowles's suggestion that pedagogy and andragogy can coexist along an age graded continuum. Another possibility is the emergence of Internet or web-based learning, which requires a certain amount of self-directedness due to the nature of the online environment. Finally, adult students in this study between the ages of 18-39 were already enrolled in a college course, which in itself demonstrates self-directedness with regard to control of their own learning.

Readiness to Learn

According to adult developmental research, responses to developmental tasks, social roles, and responsibilities are a few of the events that trigger readiness to learn in adults (Brookfield, 1986; Knowles, 1984). Because emerging adults have not had as many developmental opportunities in the form of tasks due to their relative newness to the adult role, they typically do not develop a readiness to learn till later in life. In addition, the propensity for adults between the ages of 18-25 to be self-absorbed and achievement-oriented inhibits their readiness to learn.

A review of the literature pointed to the expectation that readiness to learn would be most appropriate for young and mature learners. Unfortunately, the results did not support this construct either. The existence and quantity of developmental tasks, especially in response to a transition of adult roles, have traditionally led to a readiness to learn skills and obtain knowledge to cope with and adjust to new sets of expectations.

Mature adults tend to have experienced more developmental tasks than younger or emerging adults, primarily due to the number of transitional stages encountered. Counter to emerging adults, mature and some young adults anticipate changes with regard to social roles and responsibilities, thereby necessitating a readiness to learn.

Need to Know

The need to know is associated with life changes and developmental tasks, both of which are known to trigger an acceptance of andragogical principles (Brookfield, 1986; Knowles, 1984). Again, because emerging adults typically do not have the benefit of experiencing many developmental tasks or life changes due to their limited lifespan, it stands to reason that need to know would be more applicable toward mature adults. Again, the results of the current study did not support any difference between the age groups regarding this andragogical principle. A possible explanation might suggest that perhaps adults are more attuned toward why they need to know a skill or are more vocal about wanting to know valid reasons to support their knowledge and learning.

Experience

Although not statistically significant in this study, the role of experience is important with regard to adult learning, and warrants further discussion. Developmental, cognitive, and andragogical research has commonly focused on the role of experience as key with regard to learning at mature ages (Justice, 1997; Laher, 2007). The role of experience has been identified as more contributory toward learning in mature adults than in young or emerging adults, mainly due to the life opportunities and developmental or transitional tasks afforded while in an adult role (Beder & Darkenwald, 1982; Knowles,

1984; Zmeyov, 1998). Along the pedagogical and andragogical continuum mentioned by Knowles, the transition from concrete thought toward abstract thinking becomes stronger and more sophisticated as a result of experience with developmental tasks. The literature also tells us that the ability to achieve postformal thought increases with age (Sinnott, 1998). As postformal thought focuses on enhancing contextual and subjective problem solving skills, experience combined with postformal thought contributes to expertise or age-related wisdom, a key characteristic found in mostly mature adults (Davenport & Davenport, 1984; Kerka, 2002; Labouvie-Vief et al., 1995).

Emerging and most young adults perform fluid mental processes to attain knowledge, learn skills, and retain information. Fluid skills decline with age, so mature adults rely more on crystallized skills combined with experience to determine meaningfulness of information for retention (Sinnott, 1998). With age, mature adults tend to filter experiences through sociocultural expectations to determine meaningfulness, which is a process not easily attained by emerging or even young adult learners (Tennant & Pogson, 1995; Washbourn, 1996). Interestingly, an application of the ALPDEQ in Wilson's (2005) study indicated a weak effect with regard to experience, which was also found in this study. To explain this, Wilson (2005) suggested that the sociocultural filters discussed earlier inhibit rather than enhance perception of satisfaction. In any case, the role of experience was particularly important in Knowles's view, has been considered a positive textbook of adult learning by many.

Motivation

The fifth principle, motivation, was analyzed for its difference between age groups. The principle of motivation was the only andragogical principle that reflected a statistically significant result indicative of the greater acceptance by mature learners than emerging or young learners. The premise that motivation was more conducive to mature learners than any other group is prolific throughout the andragogical literature. Motivation is triggered by several factors, including needs, experience, developmental tasks, and social responsibilities, all of which are typically present in mature learners and only moderately present (if at all) in young and emerging adult learners.

Motivation exists throughout adulthood, but by varying degrees and different drives. Again referring to Knowles's continuum, motivation shifts across the life span from external to internal forces. Young adults typically rely on external drives, as their focus is generally vocational and family oriented (Imel, 1989; Rachal, 2002). Fluid mental processes reach their peak in the middle of young adulthood, when knowledge and skills are still accumulated through the mechanics of intelligence, including memorization, multitasking, and basic problem solving skills(Sinnott, 1998). With age, however, fluid processes decrease, thus requiring mature adults to be internally motivated to rely on pragmatic intelligence, meaningfulness, and experience to successfully learn. Finally, motivation in mature adults shifts from generativity and vocation toward personal growth and development.

Course Satisfaction

The second research question, which queried whether or not the three age groups differed in terms of course satisfaction, was answered by an ANOVA procedure. The results of the analysis of age difference on course satisfaction were far from significant, indicating that the premise of course satisfaction was not as important to either age group. This result was unexpected, in that Wilson's (2005) study reflected a strong correlation between motivation and course satisfaction, and this study reflected a strong propensity towards motivation, but not toward course satisfaction. It is not clear why, unless the timing of the study (Wilson's was administered at the end of the course, and this study administered the survey mid-course) had an influence on the perception of course satisfaction.

The final research question also focused on course satisfaction, but with regard to what degree both age and acceptance of andragogical principles predicted course satisfaction. A multiple regression analysis was used to determine the degree and strength of the relationship of the two predictors on course satisfaction. Analyzed separately, only the five andragogical principles significantly predicted course satisfaction. However, the combination of age and acceptance of principles were statistically significant, indicating that age and andragogical principles together influence the perception of course satisfaction.

The literature suggests that with age comes maturity and an internal motivation toward learning for personal growth and development (e.g., Fall, 2001). Therefore, the

likelihood of being satisfied with a course correlates with the age of the learner, for whom meaningfulness and internal gratification is important.

Many adults become engaged in and embrace andragogical principles in response to developmental tasks, role development, normative and non-normative life events. In recent weeks and months, many non-normative life events have occurred in our country that have impacted the lives and futures of millions of adult learners. As a result, many adults are entering and returning to school to enhance their life-chances for the future. It appears that the results of this study are well timed, to provide educators additional insight so that they may accommodate the increasing demands and understand the motivation that drives adult learners.

Implications for Social Change

As this study was conducted, the United States experienced an economic downturn that prompted corporations and institutions to restructure their organizations to maintain profitability. As of March 2009, the unemployment rate was 8.5% and rising. In the five months spanning the last quarter of 2008 and the first quarter of 2009, 3.3 million individuals found themselves without a job, and the number of unemployed mature adult workers doubled from the same time last year (United States Department of Labor, 2009). According to the National Center for Education Statistics (n.d.), between the years of 2006 and 2017, it is expected that the postsecondary enrollment of young adults 25-34 years of age will increase by 27%, compared to 10% of emerging adults (18-24 years) and 8% of adult students over the age of 35.

It is hoped that the information gained from this study will offer insight into the role of motivation as being especially meaningful to mature adult learners, while maintaining the rest of the principles that appear to be acceptable toward adult learners of all ages. Although not empirically justified in this study, the recognition and acknowledgment within the literature that readiness to learn, the role of experience, the need to know, and self-directedness are important to *all* adult learners strengthens the necessity for, as well as the continued support and encouragement of andragogically oriented curriculums and strategies that have been implemented in educational institutions across the nation.

The statistics indicate that the population of adult students in higher education has been increasing steadily over the last decade, and there is good reason to believe that the trend will continue. Between the years of 1990 and 2005, enrollment of adults over the age of 25 increased by 18 percent, and is projected to increase by 21 percent between 2005 and 2016 (Fast Facts, U.S. Department of Education, 2008). Educators have a responsibility and an obligation to prepare instructional strategies and adjust teaching orientation to accommodate the expectations and demands of the increasing adult learner population. Through understanding and comprehension of how adults learn, these goals can be achieved and provide an enhanced learning experience suitable for adults at varying ages and stages of development.

Limitations

There were several limitations to this study that need to be addressed. The first, and probably the most troublesome, limitation was the response rate, which was much

less than expected. Out of a population of approximately 1,000 students: 600 from the community college, and 400 from the Walden Participant Pool, only 60 individuals chose to respond, with only 59 surveys completed. With regard to the community college students, it is unclear whether the students did not receive the email link in their school email account or received the email and chose not to participate. With regard to the Walden Participant Pool, the availability of participants was limited to those who register for the opportunity to participate; the dissemination of a weblink to the Walden student community was not a viable option. Although the sample was small, the age groups approximated a normal distribution. The 18-25 age group comprised 30% of the sample, 36.7% represented the 26-39 age group, and the remaining 33.3% were adults between the ages of 40-59. Ultimately, the small size of the sample combined with a trivial effect size contributed to a decrease in power for the study, indicating a good possibility that the results of this study were probably due more to chance.

The second limitation focused on the test design of the original instrument. The original instrument was designed with 21 questions supporting five different constructs. Out of the 21 items, seven supported the concept of motivation, while the remaining 14 items were equally distributed between the other 4 concepts, roughly equivalent to only 3-4 questions each. This was problematic, in that it did not provide for a consistent pattern of results, indicated by the fact that the only construct that achieved significance was that of motivation, which was supported by fully one third of the question bank.

In addition, the combination of age and principles (of which motivation was a driver) was significant enough to predict course satisfaction, a premise supported by

Wilson's results. This fact is promising in that it suggests that a better designed instrument might empirically justify a significant result overall.

Recommendations for Action

Two recommendations can be made based on the experience of this study. First, it is suggested that this study be replicated with a larger population sample and subsequent larger effect size. It is possible that the small sample and effect size were inadequate for a viable level of statistical power.

Second, it is recommended that the ALPDEQ questions be reviewed and revised to include additional items to support the four remaining principles, thereby rendering the instrument more powerful in detecting differences in future studies. A minimum of at least six to eight questions per additional construct is recommended to be added, and then a process of test-retest to determine validity and reliability on the newly designed instrument.

Finally, the results of this study will be disseminated after publication through the Walden University Dissertation Database and the ProQuest Database, as well as in the Journal of Educational Psychology and American Educational Research Journal.

Conclusion

Malcolm Knowles's definition of andragogy was the "art and science of helping adults learn" (Cullen, 1999; Knowles, 1984; Lee, 1998; Pratt, 1988; Zmeyov, 1998). The majority of andragogical literature has focused on the art of helping adults learn. By attempting to empirically measure the differences between age groups on the acceptance of andragogical principles, we have also attempted to address the 'science' of helping

adults learn as well. There is much andragogical, developmental, and cognitive literature to continue to suggest that differences *do* exist between the ages of adult learners. However, it appears that until a more empirically sound instrument is developed that can provide statistically significant results, we must continue to rely on the art, rather than the science, of helping adults learn. One size *does* fit all, after all!

REFERENCES

Arnett, J. (1998). Learning to stand alone: The contemporary American transition to adulthood in cultural and historical context. *Human Development, 41*, 295-315. doi:10.1159/000022591

Arnett, J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469-480. doi:10.1037/0003-066X.55.5.469

Arnett, J. (2007). Suffering, selfish, slackers? Myths and reality about emerging adults. *Journal of Youth Adolescence, 36*, 23-29. doi:10.1007/s10964-006-9157-z

Beder, H., & Darkenwald, G. (1982). Differences between teaching adults and preadults. *Adult Education, 32*(8), 142-155. Retrieved from http://aeq.sagepub.com

Berger, K. (2001). *The developing person through the life span* (5th ed.). New York, NY: Worth Publishers.

Berk, L. (2004). *Development through the lifespan* (3rd ed.). Boston, MA: Allyn and Bacon.

Billington, Dorothy. (1996). *Seven characteristics of highly effective adult learning programs.* Retrieved from http://www.newhorizons.org

Block, K. (1996). What is adult learning? Course design issues in educational psychology. *Adult, Career, and Vocational Education,* 1-32. Retrieved from http://www.eric.ed.gov

Brookfield, S. (1986). *Understanding and facilitating adult learning*. San Francisco, CA: Jossey-Bass.

Carlson, R. (1979). The time of andragogy. *Adult Education, 30*, 53-56.Retrieved from http://aeq.sagepub.com

Creative Research Systems, (2009). *Sample size calculator.* Retrieved from www.surveysystem.com/sscalc.htm

Cullen, A. (1999). Practising theory. *Adult Learning, 10*(7), 18-21. Retrieved from http://www.aaace.org

Davenport, J., & Davenport, J. (1984). Chronology and analysis of andragogy debate. *Adult Education Quarterly, 35*(N1), 152-159. Retrieved from doi:10.1177/0001848185035003004

Elias, J. (1979). Andragogy revisited. *Adult Education, 29*(4), 252-256. Retrieved from doi:10.1177/074171367902900404

Fall, L. (2001). Three-weekend course format and adult student satisfaction. *Journalism and Mass Communication Educator, 55*(4), 39-48. Retrieved from http://www.aejmc.org

Feuer, D., & Geber, B. (1988). Uh-oh..second thoughts about adult learning theory. *Training,* 31-39. Retrieved from http://proquest.umi.com.ezp.

Field, A. (2004). *Discovering statistics: Using SPSS for Windows.* London, GB: Sage Publications.

Forrest III, S. & Peterson, T. (2006). It's called andragogy. *Academy of Management Learning and Education, 5*(1), 113-122. Retrieved from http://www.aom.pace.edu/amle

Gay, L., & Airasian, P. (2000). *Educational research: Competencies for analysis and application* (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Gehring, T. (2000). A compendium of material on the pedagogy-andragogy issue. *JCE, 51*(1), 151-165. Retrieved from http://www.eric.ed.gov

Giczkowski, W. (1998). General education applications for adult learners: Making sense of experience. *Adult learning, 9*(4), 30-33. Retrieved from http://www.aaace.org

Ginsberg, I. (1982). Stages of childhood development and implications for pedagogy. *Teacher's College Record, 84*(2), 327-337. Retrieved from https://www.tcrecord.org

Henschke, J., & Cooper, M. (2006). Andragogy: The foundation for its theory, research, and practice linkage. *International Unit of the American Association for Adult and Continuing Education Conference,* 1-8. Retrieved from http://www.iacet.org

Imel, S. (1989). Teaching adults: Is it different? *ERIC Digest, 82*, 1-4. Retrieved from http://www.eric.ed.gov

Imel, S. (2001). *Adult learners in postsecondary education, practice application* Columbus, OH. Retrieved from http://www.eric.ed.gov

Jarvis, P. (1987). Meaningfulness and meaningless experience. *Adult Education Quarterly, 37*(N3), 164-172. Retrieved from doi:10.1177/0001848187037003004

Justice, D. (1997). Facilitating adult learning in a liberal education context. *Liberal Education, 83*(1), 28-33. Retrieved from http://www.eric.ed.gov

Kerka, S. (2002). *Teaching adults: Is it different? Myths and realities* Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education. Retrieved from http://www.eric.ed.gov

Kiess, H. (2002). *Statistical concepts for the behavioral sciences,* (3rd ed.). Boston, MA: Allyn & Bacon.

Knowles, M. (1980). *Modern practice of adult education*. Englewood Cliffs, NJ: Prentice Hall Regents.

Knowles, M. (1984). *Andragogy in action: Applying modern principles of adult learning*. San Francisco, CA: Jossey-Bass.

Knowles, M. (1990). *The adult learner: A neglected species* (4th ed.). Houston, TX: Gulf Publishing.

Knowles, M., Holton, III, E., & Swanson, R. (1998). *The adult learner* (5th ed.). Woburn, MA: Butterworth Heinenann.

Labouvie-Vief, G., & Diehl, M. (2000). Cognitive complexity and differing domains in adulthood. *Psychology and Aging, 15*(3), 490-504. Retrieved from http://www.apa.org/journals/pag.html

Labouvie-Vief, G., Chiodo, L., Goguen, L., Diehl, M., & Orwoll, L. (1995). Representations of self across the life span. *Psychology and Aging, 10*(3), 404-415. Retrieved from doi:10.1037/0882-7974.10.3.404

Laher, S. (2007). Reflections on teaching undergraduate psychology to part time adult students. *South African Journal of Psychology, 37*(2), 383-388. Retrieved from http://www.journals.co.za/ej/ejour_sapsyc.html

Lee, C. (1998). The adult learner: Neglected no more. *Training, 35*(3), 47-52. Retrieved from http:// proquest.umi.com.ezp

Merriam, S. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. *New Directions for Adult and Continuing Education, 89*, 3-13. Retrieved from http://www.3.interscience.wiley.com/journal/86011352/home

Merriam, S. (2004). The role of cognitive development in Mezirow's transformational learning theory. *Adult Education Quarterly, 55*(1), 60-68. Retrieved from http://aeq.sagepub.com

Murphy, K. & Myors, B. (2004). *Statistical power analysis: A simple and general model for traditional and modern hypothesis tests.* Mahwah, NJ: Lawrence Erlbaum.

National Center for Education Statistics. (nd). *Projections of education statistics to 2017.* Retrieved April 12, 2009, from http://nces.ed.gov/programs/projections/projections2017/sec2c.asp

Ornstein, A., & Hunkins, F. (2004). *Curriculum, foundations, principles, and issues* (4th ed.). Allyn and Bacon: Boston, MA.

Ozuah, P. (2005). First there was pedagogy and then came andragogy. *Einstein Journal of Biology & Medicine, 21*, 83-87. Retrieved from http://www.aecom.yu.edu/ejbm

Pattison, S. (1999). *A history of the adult distance education movement.* Unpublished doctoral dissertation, Nova Southeastern University.

Pratt, D. (1988). Andragogy as a related construct. *Adult Education Quarterly, 38*(N3), 160-181. Retrieved from doi:10.1177/0001848188038003004

Rachal, J. (2002). Andragogy's detectives: A critique of the present and a proposal for the future. *Adult Education Quarterly, 52*(3), 210-227. Retrieved from http://aeq.sagepub.com

Reese, T. (1994). *Adult learning research and effective college teaching: Perceptions and practice.* Tucson, AZ: ASHE Annual Meeting. Retrieved from http://www.eric.ed.gov

Richardson, J., & King, E. (1998). Adult students in higher education: Burden or boon? *Journal of Higher Education, 69*(1), 65-88. Retrieved from http://www.ohiostatepress.org/journals

Riegel, K. (1973). Dialectic operations: The final period of cognitive development. Princeton, NJ: Educational Testing Service. Retrieved from http://www.eric.ed.gov

Saul, J. (1990). Can community colleges provide the training for educators of adults? *Community College Review, 18*(3), 51-57. Retrieved from http://www.communitycollegereview.com

Savicevic, D. (1991). Modern conceptions of andragogy: A european framework. *Studies in the Education of Adults, 23*(2), 179-201. Retrieved from http://www.ingentaconnect.com

Schaie, K. (1979). Toward a stage theory of adult cognitive development. *International Journal of Aging and Human Development, 8*(2), 129-138. Retrieved from http://www.baywood.com/journals

Schaie, K. (1994). The course of adult intellectual development. *American Psychologist, 49*(4), 304-313. Retrieved from http://www.apa.org/journals/amp.html

Shulman, S., & Ben Artzi, E. (2003). Age-related differences in the transition from adolescence to adulthood and links with family relationships. *Journal of Adult Development, 10*(4), 217-228. Retrieved from http://www.springer.com/psychology/journal

Sinnott, J. (1994). *Interdisciplinary handbook of adult lifespan learning*. Westport, CT: Greenwood Press.

Sinnott, J. (1998). *The deveopment of logic in adulthood*. New York: Plenum Press.

Tennant, M., & Pogson, P. (1995). *Learning and change in the adult years*. San Francisco, CA: Jossey-Bass.

Tice, E. (1997). Educating adults: A matter of balance. *Adult Learning, 9*(1), 18-21. Retrieved from http://www.aaace.org

Tisdell, E., & Taylor, E. (1999). Adult education philosophy informs practice. *Adult Learning, 11*(2), 6-10. Retrieved from http://www.aaace.org

United States Department of Education. (2008). *Fast facts college enrollment* (NCES 2008-022). Washington, DC. Retrieved June 18, 2009, from http://nces.ed.gov/fastfacts/display.asp?id=98.

United States Department of Labor. (2009). *The employment situtation: March 2009* (USDL09-3028). Washington, DC: U.S. Government Printing Office.

United States Department of Labor. (2009). *Labor force statistics from the current population survey.* Retrieved April 12, 2009, from http://data.bls.gov

Wang, V. (2004). Full time adult credential student's instructional preferences at California State University, Long Beach: Pedagogy or andragogy? *SCI, 5(3),* 365-370. Retrieved from http://www.ajpe.org

Washbourn, P. (1996). Experiential learning: Is experience the best teacher? *Liberal Education, 82*(3), 10-15. Retrieved from http://www.aacu.org/liberaleducation

Williams, B. (2001). *Adult learning theory: The mentoring connection* Akron, OH: University of Akron. Retrieved from http://www.eric.ed.gov

Wilson, L. (2005). A test of andragogy in a post-secondary educational setting.(Doctoral dissertation, Louisiana State University, 2005). Retrieved from http://proquest.umi.com.ezp

Zemke, R. (2002). Who needs adult learning theory anyway? *Training, 39*(9), 86-91. Retrieved from http://proquest.umi.com.ezp

Zmeyov, S. (1998). Andragogy: Origins, developments and trends. *International Review of Education, 44*(1), 103-108. Retrieved from http://www.springer.com/education

APPENDIX A:

SCALE DESCRIPTIVES OF ANDRAGOGICAL PRINCIPLES PER QUESTION

Self-Directedness

1) I knew why this learning experience would be beneficial for me.

2) I was satisfied with the extent to which I was an active partner in this learning experience.

3) I felt I had control over my learning in this learning experience.

Need to Know

4) It was clear to me why I needed to participate in this learning experience

5) I felt responsible for my own learning in this learning experience

6) The life/work issues that drove me to this learning experience were understood

7) I felt I had a role to play in my own learning during this learning experience

Readiness

8) I understood why the learning methods were right for me

9) The life/work issues that motivated me for this learning experience were respected

10) This learning experience was just what I needed given the changes in my life/work

Experience

11) I felt my prior life and work experiences helped my learning

12) My life and work experiences were a regular part of the learning experience

13) I felt my life and work experiences were a resource for this learning

Motivation

14) I feel my mastery of this material will benefit my life/work

15) The knowledge gained in this learning experience can be immediately applied to my life/work

16) I feel better able to perform life/work tasks due to this learning experience

17) This learning experience tapped into my inner drive to learn

18) I feel this material will assist me in resolving a life/work problem

19) This learning experience motivated me to give it my best effort

20) This learning experience motivated me to learn more

21) I feel that this learning experience will make a difference in my life/work

Course Satisfaction

27) Sufficient time was allocated to learn content.

28) Individual assignments were appropriate.

29) The course contributed to practical knowledge I use in my job.

30) My learning team was a valuable part of this course.

APPENDIX B

SURVEY INSTRUMENT

Andragogy Survey of Adult Learners

Introduction

Dear Student,

This study is designed to benefit research to improve the educational experience of adult learners, with the vision of better suiting the learning needs of adult students. Your participation is extremely important, as it is representative of a wide spectrum of adult students in educational institutions all over the country. Your honest feedback and responses will benefit not only this research study, but also thousands of adult students just like you.

Andragogy Survey of Adult Learners

Informed Consent

Participation in this survey study is entirely voluntary; and there will be no repercussions should you choose not to participate. The study is completely anonymous, and there is no identifiable information requested on the survey. Survey results will remain in the sole custody of the researcher, and will not be shared with anyone else. To protect your privacy, a consent signature is not requested. Instead your completion and return of the survey will signify that you consent to participate in this study and agree that you have been informed of the level of confidentiality and anonymity it provides. It has been determined that since this study is completely impersonal and voluntary, there is no physical or psychological risk to you.

It is a quick survey that will take less than 10 minutes to complete. Please answer each question to the best of your ability.

Andragogy Survey of Adult Learners

Contact Information

If you have any questions regarding this research, you may contact me, Wendy Conaway, at wfmguard2003-teach@yahoo.com or the Walden Research Participant Advocate at 800-925-3368, ext. 1210. You are welcome to make a copy of this survey page for your records.

Thank you again for participating in this research; your responses are very much appreciated.

Sincerely,
Wendy Conaway
Doctoral Dissertation Student
Walden University

Andragogy Survey of Adult Learners

These questions relate to your perception of your learning experience in the current adult learning situation. Please mark your response to each question to the best of your ability.

1. I know why this learning experience is beneficial to me.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

2. I am satisfied with the extent to which I am an active partner in this learning experience.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

3. I feel that I have control over my learning in this learning experience.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

4. It is clear to me why I need to participate in this learning experience.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

Andragogy Survey of Adult Learners

5. I feel responsible for my own learning in this learning experience.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

6. The life/work issues that drove me to this learning experience are understood.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

7. I feel I have a role to play in my own learning during this learning experience.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

8. I understand why the learning methods are right for me.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

9. The life/work issues that motivate me for this learning experience are respected.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

Andragogy Survey of Adult Learners

10. This learning experience is just what I need given the changes in my life/work.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

11. I feel my prior life and work experiences help my learning.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

12. My life and work experiences are a regular part of the learning experience.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

13. I feel my life and work experiences are a resource for this learning.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

14. I feel that my mastery of this material will benefit my life/work.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

Andragogy Survey of Adult Learners

15. The knowledge I am gaining in this learning can be immediately applied in my life/work.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

16. I feel better able to perform life/work tasks due to this learning experience.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

17. This learning experience taps my inner drive to learn.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

18. I feel this material will assist me in resolving a life/work problem.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

19. This learning experience motivates me to give it my best effort.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

Andragogy Survey of Adult Learners

20. I feel that this learning experience will make a difference in my life/work.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

21. This learning experience motivates me to learn more.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

22. I would recommend the instructor.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

23. The course meets my expectations.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

24. The instructor demonstrates expertise and is professional.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

Andragogy Survey of Adult Learners

25. Presentation by the faculty contributes to course objectives.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

26. The instructor is organized and manages the course successfully.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

27. Sufficient time is allocated to learn content.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

28. The individual assignments are appropriate.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

29. The course contributes to practical knowledge I use in my job.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

Andragogy Survey of Adult Learners

30. My learning team (instructor, counselor, advisor) is a valuable part of this course.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

31. Student Age

- ◯ 18-25
- ◯ 26-39
- ◯ 40-59

32. When do you attend this class?

- ◯ Daytime
- ◯ Evening
- ◯ Weekend

33. What is your gender?

- ◯ Male
- ◯ Female

34. What is your race/ethnic origin?

- ◯ Caucasian/White
- ◯ African American/Black
- ◯ Asian
- ◯ Hispanic
- ◯ Other

35. Number of courses completed at this institution so far?

- ◯ 0-4
- ◯ 5-8
- ◯ 9-12
- ◯ 13+

Andragogy Survey of Adult Learners

36. Number of years between completion of high school and beginning of courses at this institution?

- ◯ 0
- ◯ 1-4
- ◯ 5-10
- ◯ 11+

37. Do you currently hold a college degree?

- ◯ Yes
- ◯ No

38. Do you attend this institution full time or part time?

- ◯ Full time
- ◯ Part time

39. Do you work full time or part time?

- ◯ Full time
- ◯ Part time

40. Number of years work experience:

- ◯ 0-5
- ◯ 6-10
- ◯ 11-15
- ◯ 16+

41. Do you live:

- ◯ Alone
- ◯ With Parents
- ◯ With Spouse/Significant other

42. Do you have children living at home?

- ◯ Yes
- ◯ No

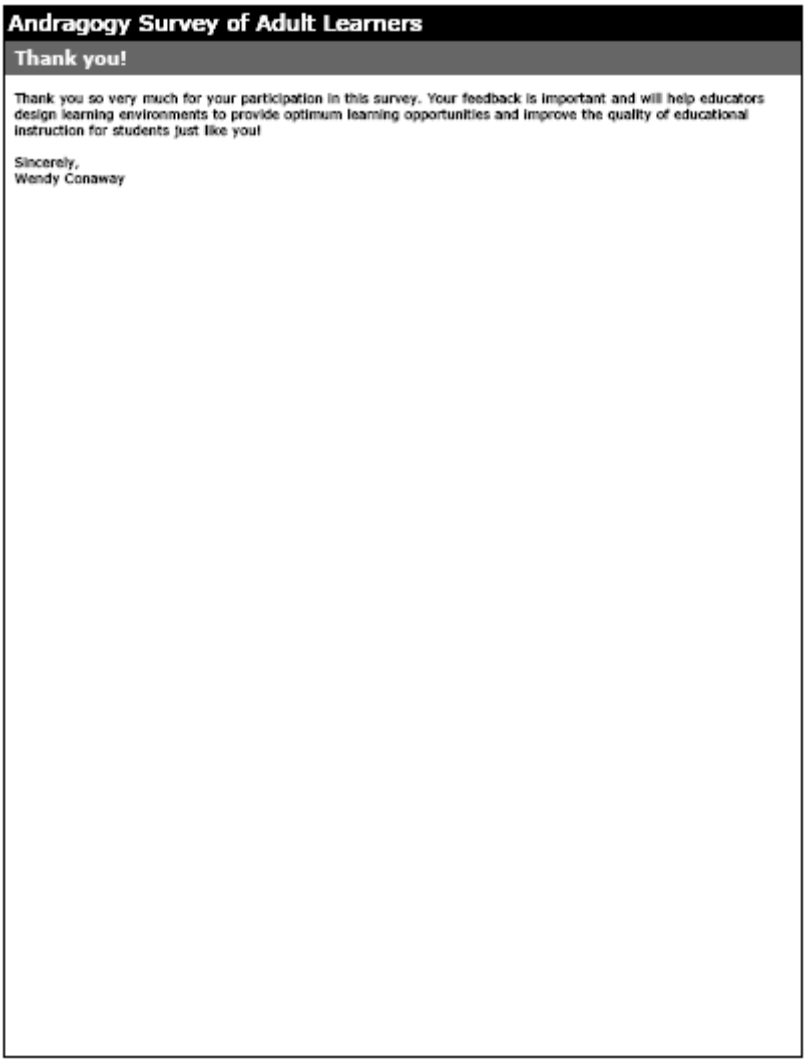
Andragogy Survey of Adult Learners

43. If you have children living at home, what are their age ranges?

- ◯ 0-3
- ◯ 4-7
- ◯ 8-12
- ◯ 13-17

44. What is the primary reason you are returning to school?

- ◯ Personal fulfillment
- ◯ Current work requirement
- ◯ Career change
- ◯ Career enhancement



Andragogy Survey of Adult Learners

Thank you!

Thank you so very much for your participation in this survey. Your feedback is important and will help educators design learning environments to provide optimum learning opportunities and improve the quality of educational instruction for students just like you!

Sincerely,
Wendy Conaway

APPENDIX C

POINT VALUES FOR INDEPENDENT VARIABLES

Variable	Point Value
Student Age	
18-25	1
26-39	2
40-59	3
Gender	
Male	1
Female	2

APPENDIX D

APPROVAL TO CONDUCT RESEARCH

Wendy L. Conaway

Message-ID : <OF81BA5725.127CE1B0-ON8625755C.00168750-8625755C.00159AAF@email.waldenu.edu>
Subject : Notification of Approval to Conduct Research-Wendy Conaway
From : IRB@waldenu.edu
Return-Path : <Jenny.Sherer@waldenu.edu>
Cc : research@waldenu.edu, krynears@waldenu.edu

MIME-Version : 1.0 Sensitivity:
Date : Thu, 12 Feb 2009 22:05:59 -0600
Sender : Jenny.Sherer@waldenu.edu
Content-Type : multipart/alternative; boundary="=_alternative 00159AAC8625755C_="
To : wendy.conaway@waldenu.edu
Date : Thu, Feb 12, 2009 10:05 PM CST
From : **IRB@waldenu.edu**
To : wendy.conaway@waldenu.edu
Reply To : IRB@waldenu.edu
CC : research@waldenu.edu, krynears@waldenu.edu
Subject : **Notification of Approval to Conduct Research-Wendy Conaway**

Dear Ms. Conaway,
This email is to serve as your notification that Walden University has approved BOTH your dissertation proposal and your application to the Institutional Review Board. As such, you are approved by Walden University to conduct research.
Please contact the correct Research Office at research@waldenu.edu if you have any questions.
Congratulations!
Jenny Sherer
Operations Manager, Office of Research Integrity and Compliance
Leilani Endicott
IRB Chair, Walden University

APPENDIX E

IRB APPROVAL

Wendy L. Conaway

Message-ID : <OF01F26C7A.E339479D-ON8625755C.001670B1-8625755C.0015841C@email.waldenu.edu>
Subject : IRB materials approved-Wendy Conaway
From : IRB@waldenu.edu
Return-Path : <Jenny.Sherer@waldenu.edu>
Cc : research@waldenu.edu, krynears@waldenu.edu
Received :
MIME-Version : 1.0 Sensitivity:
Date : Thu, 12 Feb 2009 22:05:02 -0600
Sender : Jenny.Sherer@waldenu.edu
Content-Type : multipart/alternative; boundary="=_alternative 001584198625755C_="
To : wendy.conaway@waldenu.edu
Date : Thu, Feb 12, 2009 10:05 PM CST
From : **IRB@waldenu.edu**
To : wendy.conaway@waldenu.edu
Reply To : IRB@waldenu.edu
CC : research@waldenu.edu, krynears@waldenu.edu
Subject : **IRB materials approved-Wendy Conaway**

Dear Ms. Conaway,
This email is to notify you that the Institutional Review Board (IRB) has approved your application for the study entitled, "Andragogy: One size does not fit all."

Your approval # is 02-12-09-0302416. You will need to reference this number in your dissertation and in any future funding or publication submissions.

Your IRB approval expires on February 11, 2010. One month before this expiration date, you will be sent a Continuing Review Form, which must be submitted if you wish to collect data beyond the approval expiration date.
Your IRB approval is contingent upon your adherence to the exact procedures described in the final version of the IRB application materials that have been submitted as of this date. If you need to make any changes to your research staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive an IRB approval status update within 1 week of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for research activities conducted without the IRB's approval, and

the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research.

When you submitted your IRB application, you a made commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the researcher.

Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the IRB section of the Walden web site or by emailing irb@waldenu.edu: http://inside.waldenu.edu/c/Student_Faculty/StudentFaculty_4274.htm

Researchers are expected to keep detailed records of their research activities (i.e., participant log sheets, completed consent forms, etc.) for the same period of time they retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.

Please note that this letter indicates that the IRB has approved your research. You may not begin the research phase of your dissertation, however, until you have received the **Notification of Approval to Conduct Research** (which indicates that your committee and Program Chair have also approved your research proposal). Once you have received this notification by email, you may begin your data collection.

Sincerely,
Jenny Sherer, M.Ed.
Operations Manger
Office of Research Integrity and Compliance
Email: irb@waldenu.edu
Fax: 626-605-0472
Tollfree : 800-925-3368 ext. 2396
Office address for Walden University:
155 5th Avenue South, Suite 100
Minneapolis, MN 55401

APPENDIX F

PERMISSION TO USE SURVEY INSTRUMENT

Wendy L. Conaway

Message-ID : <000a01c8b69b$aaec5420$00c4fc60$@net>
Subject : RE: Request for permission to use dissertation instrument
Reply-To : <eholton@cox.net>
From : "Ed Holton" <eholton@cox.net>
Return-Path : <eholton@cox.net>
Received :
MIME-Version : 1.0
Date : Thu, 15 May 2008 09:55:08 -0500
Thread-Index : Aci2G4RL+jts+O46TgiSbMWJL1hIQAAf71Ow
In-Reply-To : <15979782.1210808260057.JavaMail.root@c2app3>
References : <15979782.1210808260057.JavaMail.root@c2app3>
Content-Language : en-us
X-Mailer : Microsoft Office Outlook 12.0
Content-Type : multipart/alternative; boundary="----=_NextPart_000_000B_01C8B671.C2164C20"
To : "'Wendy L. Conaway'" <wendy.conaway@waldenu.edu>

Date : Thu, May 15, 2008 09:55 AM CDT
From : **Ed Holton <eholton@cox.net>**
To : "'Wendy L. Conaway'" <wendy.conaway@waldenu.edu>
Reply To : eholton@cox.net
Subject : **RE: Request for permission to use dissertation instrument**

Hi Wendy

I will be happy to give you permission to use the instrument. You have actually asked at a good time. We are in the process right now of preparing a second edition of the instrument using the results from Dr. Wilson's dissertation. There were some areas of weaknesses in the instrument that we want to correct. We should have it ready in the next few weeks. I would suggest that you use the new version.

Would you be willing to share your data with us so we can examine the instrument constructs. If so, we would be happy to assist you by doing the factor analysis on the instrument so you

have the best scales possible.

Take care

From: Wendy L. Conaway [mailto:wendy.conaway@waldenu.edu]
Sent: Wednesday, May 14, 2008 6:38 PM
To: eholton2@lsu.edu
Subject: Request for permission to use dissertation instrument

Dr. Holton,

My name is Wendy Conaway, and I am a doctoral student with Walden University. I am currently working on my dissertation on adult learning theory and principles of andragogy.

I understand you were the committee chair for Dr. Lynda Wilson's 2005 Dissertation, *A Test of Andragogy in a Post-Secondary Educational Setting,* in which she developed the ALPDEQ survey to measure andragogical constructs in post-secondary MBA students. I would like to obtain permission to apply this instrument in my dissertation research in an undergraduate setting.

Would it be possible for either you to provide permission, or to offer Dr. Wilson's contact phone number and/or email address for permission? I would be very grateful.

Sincerely,

Wendy Conaway

cell: 281 782 8956

CURRICULUM VITAE

Wendy L. Conaway, M.A., ABD
9727 Haven Crossing Court, Houston, Texas, 77065
Home: (281)894-5561 • Cell: (281) 782-8956
E-mail: profpsyc2003@yahoo.com

ACADEMIC/TEACHING EXPERIENCE

Adjunct Professor, *2009-present*
Psychology, University of Phoenix, Phoenix, AZ.
Online courses.

Adjunct Professor, *2008-present*
Psychology, Lone Star College, Greenspoint Campus, Houston, TX.
Traditional On-ground courses.

Adjunct Professor, *2007-present*
Psychology, Ashford University, Clinton, IA.
Online courses.

Adjunct Professor, *2003-2006*
Psychology, Cy-Fair College, Behavioral Science Division, Cypress, TX.
Traditional On-ground courses.

COURSES TAUGHT

Undergraduate
- General Psychology (traditional)
- Life Span Growth and Development (traditional)
- Industrial/Organizational Psychology (online)
- Abnormal Psychology (online)
- Health Psychology (online)
- Social Psychology (online)
- Introduction to Sociology (online)
- Introduction to Psychology (online)
- Personality Theory (online)
- Adult Development (online)

Online Courses Developed

- General Psychology
- Life Span Development
- Instructional Design

Education

Doctor of Philosophy, Educational Psychology, Walden University, Minneapolis, Minnesota, in progress, est. Summer, *2009*

Master of Arts, Human Sciences, Our Lady of the Lake University, Houston, Texas, *2003*

Bachelor of Arts, French, University of Houston, Houston, Texas, *1979*

Deuxieme Degree D'Etudes, French, University of Strasbourg, France, *1976*

High School Diploma, High School for Performing and Visual Arts, Houston, Texas, *1975*

Research Experience

- **Research Associate**, Online Research Lab, Walden University, 2006

Professional journal experience

- **Manuscript Reviewer** for the *Journal of Online Learning and Technology* (2007-present)

Academic Honors and Awards

- Our Lady of the Lake Award for Superior Achievement and Academic Excellence, *2001*
- Our Lady of the Lake Award for Superior Achievement and Academic Excellence, *2002*
- Psi Chi, National Honor Society in Psychology, 2002
- Certificate of Academic Excellence**,** OLLU, 2002

- Certificate of Academic Excellence, OLLU, 2001
- Pi Delta Phi, Societe d'Honneur Francaise,1978
- Mortar Board, 1978
- Phi Eta Sigma, Freshman Honor Society, 1976
- Alpha Lambda Delta, 1976
- Provost Circle for Teaching Excellence, Ashford University, *2009*

CORPORATE EXPERIENCE

- **Travel Professional**, American Express Travel, Houston, TX, *1988 - Present*

- **Technical Quality Specialist,** 2007-2008.
Management position providing coaching and feedback to travel counselors to improve performance. Review audio and video capture of travel counselor-customer interactions for accuracy, productivity, and customer service.

- **Travel Counselor.** 1998-2001, 2005-2007.
Middle Market and Small Business Travel. Handle domestic and international reservations. Experience handling oilrig crew rotations and travel documentation.

- **Lead Office Counselor,** 2005.
Helped establish Western Region Employee Satisfaction Action Team, and was area representative for three years. Handled domestic and international reservations

- **On Site Coordinator,** 2004-2005.
Provided assistance and training to employees on site. Resolved customer and employee issues and complaints. Handled domestic and international reservations

- **Team Leader,** 2001-2004.
Lead and motivated a small business travel team on a daily basis. Monitored employee performance with coaching and feedback. Responsible for cost center financials and reports. Motivated team to participate in corporate programs and community initiatives

- **Corporate Trainer,** Intercontinental Hotels Corporation, Houston, TX, *1982 -1988*
Provided initial and ongoing training for newly hired reservationists
Helped establish new call center operation in Houston, Texas
Developed and implemented first training manual for IHC
Assisted in cross training computer systems

- **Reservations Agent**, Pan American Airways, Houston, TX, *1979-1982*
Handled domestic and international air reservations

Handled group reservations and schedule changes

Corporate Honors and Awards

- Star Performer Awards for the years 1997, 1998, 2002, 2003, 2006, 2007, 2008
- Trendsetter Award, 2007
- Pacecetter Awards for the years 1995, 1996, 1997, 1998, 1999, 2000
- Great Performers Award, 1994
- Pacesetter Hall of Fame, 1999
- Great Performers Special Award, 1995
- Great Performers Honorable Mention, 1996

Certifications and Training

- Certified ARC Specialist, *2003*
- WebCT Distance Education, *2003*
- Texas Certified Mediator, *2003*
- Statewide Academy of Part Time Adjunct Faculty, *2004*
- Texas Alternative Teacher Certification, *2005*
- Art of Supervision, *2001*
- New Leader Orientation, *2001*
- Security Awareness Training, *2005*
- Peer to Peer Feedback
- Building on Your Abilities
- Diversity Awareness
- Achieving Extraordinary Customer Relations
- MILE Program, *2000*
- Six Sigma Greenbelt, *2003*
- Financial Acumen, *2001*
- Brilliant at the Basics, *2002*

Professional Affiliations

- APA Student Affiliate, *2005-present*
- Society for the Teaching of Psychology, APA Div. 2, *2004-2007*
- APA Division Educational Psychology, APA Div. 15, *2006-2007*
- APA Division General Psychology, APA Div. 1, *2006-2007*
- Psi Chi Honor Society, Our Lady of the Lake, *2002*
- Psi Chi Honor Society, Walden University, *2003-present*

- Texas Association of Mediators, *2003-2004*
- Texas Community College Teachers Association, *2005-2006*
- American Educational Research Association, *2006-2007*
- Texas Academy for Part Time Faculty, *2004*
- SBEC, *2005*

VOLUNTEER SERVICE

- Boy Scouts of America, Den Leader, Committee Chair, Roundtable Staff, Day Camp Program Chair, Fundraiser Chair, Committee Member, *1993-2005*.
- Sea Scouts Committee member, *2006-2007*
- Volunteer, Seven Acres Elderly Home for the Aged, *1995-Present*
- Several EVA Events, *1995-Present*
- SBT Texas Western Region ESAT Representative, *1996-1999*

CONVENTIONS AND SEMINARS

- Texas Community College Teachers Association Annual Convention, Houston, Texas, February 24, 2006
- American Psychological Association Annual Convention, New Orleans, Louisiana, August 10-13, 2006.

REFERENCES

Dr. Kimberly Rynearson…..Kimberly.Rynearson@Waldenu.edu
Carol McComas…….……Carol.Z.McComas@AEXP.com
Jo Fey…..…….……Jo.A.Thibodeau-Fey@Lonestar.edu
Dr. Donald Stanley……..…..Donald.Stanley@Lonestar.edu
Dr. Marjie Estivill……...Marjorie.Estiville@Ashford.edu
Simone Kommer……..Simone.Kommer@Ashford.edu