Assessing Adult Learners Using Web 2.0 Technologies

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This exploratory study investigated the andragogical and/or pedagogical teaching philosophies of online instructors at the California State University, Long Beach in the Spring Semester of 2010. Drawing from reflective adult education theory by Mezirow and Brookfield, principles of andragogy by Knowles and Philosophical Foundations of Adult Education by Elias and Merriam, this article proposes a new model for this reflective adult education theory and an instrument to support it. It is either the helping relationship (andragogical philosophy) or the directing relationship (pedagogical philosophy) plus the learning environment (the Internet) that lead to adult learners' critical reflection in Mezirow's terms. A researcher-designed survey instrument called Online Philosophy of Adult Education Scale (OPAES) was used to measure instructional preferences of these instructors in the electronic classroom to determine their andragogical or pedagogical teaching philosophies using Likert scale and yes/no questions. Data were collected from 37 (62% of 60) online instructors at the California State University, Long Beach regarding their instructional preferences. The results of the study demonstrated that these online adult education instructors supported both the teacher-centered approach and the student-centered approach to teaching online, although they violated a certain aspect of Knowles' humanistic principle and Freire's principle of problem-posing education. The instrument could be used by professors in adult education to encourage reflection based on the new model.

Keywords: Mezirow, Knowles, Andragogical, Pedagogical, Philosophy, Web 2.0 technologies, Freire, Grow, Assessment

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INTRODUCTION

Since current theories of transformative learning generally rest on humanistic philosophy and Knowles' version of andradogy is based on humanistic psychology, online learning for adults and principles of andragogy have become inseparable, especially because of the asynchronous nature of many online courses. Although adults are responsive to external motivators, such as grades or verbal praise, adults are basically internally motivated. When it comes to online transformation, adults' real interest is how to maximize their learning without the benefit of having a face-to-face discussion with their instructors. Adult learners may hold full time jobs and have family responsibilities, which may make physical travel to a campus for class difficult or even impossible, thus online courses are appealing.

To some extent, andragogy was designed to maximize adult learning especially adults' online transformation where the individual adult learner is a "free-agent" in his or her own learning. To some scholars, andragogy is more a technological application of psychological and sociological knowledge. However, to Knowles, it became a continuum from teacher-directed to student-directed learning. This student-centered learning is a democratic approach to teaching and learning. Influential scholars have delved into the principles of andragogy such as self-concept of adult learners (Tough, 1967, 1971; Knowles, 1975; Mezirow, 1985; Brookfield, 1986; Pratt, 1988, 1993; Brockett & Hiemstra, 1991; Candy, 1991; Merriam & Caffarella, 1999; Merriam, 2001). Because adult learners are capable of self-direction in learning, some scholars doubt whether a teacher-learner relationship is really needed given the asynchronous nature of online learning. One example of this is a study conducted by Rhodes (2009) who investigated adult learners' preferences in a self-paced online environment, rather than the traditional course calendar many higher education institutions utilize.

However, to say this teacher-learner relationship is not needed is to overemphasize the power of self-direction. Even when adult learners are highly self-directed, an andragogical type of teacher-learner relationship may facilitate adult learning. When adult learners are highly self-directed, they may also require the traditional pedagogical teacher-learner relationship because of speed, convenience, previous experience in courses, or learning styles. Not only is this relationship necessary, but also the kinds of andragogical and pedagogical teaching philosophies online instructors may hold strongly affect this relationship, hence adult online transformation. "Most students have a tendency for sensing, visual, and active styles of learning. However most college courses follow the lecture teaching style" (Wirz, 2004, p. 2). The instructors' teaching philosophies lead to the methods and art of teaching. Ultimately, students' critical reflection is affected by these methods and art of teaching. However, no empirical study has been conducted to determine online instructors' teaching philosophies. Most literature has focused on the learners' preferences rather than the instructor's.

The present study is an investigation to determine and describe online instructors' andragogical and /or pedagogical teaching philosophies in an online environment. The humanistic principles of andragogy support a helping relationship (andragogical philosophy) between teachers and learners whereas principles of pedagogy indicate a directing relationship (pedagogical philosophy) between teachers and learners. Table 1 displays a matrix, demonstrating the spectrum of andragogical to pedagogical learning and online to face to face. Instructors must be able to move from quadrant to quadrant (andragogical to pedagogical) to meet the needs of learners. Online instructors may stay in those quadrants, but face to face instructors may venture into the online quadrant for activities or even make the course a hybrid. This exploratory study is only a first step to examining the philosophies of online instructors.

Table 1. *Matrix of Andragogical and Pedagogical Models of Assessment*

Andragogical Online Assessment for Adults	*Andragogical Face to Face Assessment*
Instructor as helper, links students to resources	Instructor as helper, links students to resources
Based on mutually created learning objectives	Based on mutually created learning objectives
Students encouraged to go beyond objectives	Students encouraged to go beyond objectives
Most communication and feedback in writing	Most communication and feedback verbal
May be asynchronous or self-paced	
Pedagogical Assessment	*Pedagogical Face to Face Assessment*
Instructor as director, information transmitted	Instructor as director, information transmitter
Based on learning objectives	Based on learning objectives
Most communication and feedback in writing	Most communication and feedback verbal
May be asynchronous or self-paced	

THEORETICAL FRAMEWORK

Wang (2004) maintained that a key concept in reflective adult education theory is critical reflection (p. 18). Although reflective adult education theory by Mezirow (1991, 2000) and Brookfield (1991, 1995) seems to work well with adults' online transformation and emancipation, it focuses on a set of skills or processes possessed by individuals to teach (Boxler, 2004). This theory does not take into consideration the immediate situation that an adult learner is involved in. It is in relationship with teachers (either a helping relationship or a directing relationship) that causes learners' critical reflection to occur whether in the electronic classroom or in the traditional classroom. Failure to acknowledge this relationship (andragogical philosophy or pedagogical philosophy) is to deny the need for an intersection of andragogy and pedagogy. To ignore students' relationship with teachers is to say that reflective adult education theory takes effect without students' social interaction with their teachers in the electronic classroom. Reflective adult education theory has been criticized for its lack of attention to any relationship between teachers and students. Since andragogy's inception, adult learning professionals have been labeling themselves as "trained" learning facilitators. Any connection with pedagogy is viewed as negative. For this study, the researcher seeks to shed light on the convergence of andragogical teaching philosophies and pedagogical teaching philosophies in the online environment.

Action without philosophical reflection leads to a mindless activism (Elias & Merriam, 1995, p. 4). Philosophies of teaching lead to meaningful practice, and thus it is important for online instructors of adults to reflect on their philosophies just as many pedagogical teacher education programs do. The instrument explored in this study is one way for online instructors to consider their own philosophy and if their actions align with their beliefs. The instrument in this study is aligned with the following philosophies of education: humanistic, progressive, radical, analytic, liberal, and behavioral.

Humanistic philosophy of teaching is characterized by freedom and autonomy, trust, active cooperation and participation, and self-directed learning. Therefore this mode of

teaching is andragogical in nature. According to Wang and Sarbo (2004), humanistic instructors tend to enhance personal growth and development, facilitate self-actualization, and reform society. Online, humanist instructors emphasize sharing previous knowledge with peers and the instructor. Reflections are common written assignments for these instructors online. The prominent leader, Knowles advocated needs-meeting and student-centered andragogical approach to adult learning.

Since progressive philosophy of teaching emphasizes experience-centered education and democratic education, it falls squarely in line with the Need to Know and Prior Experience principles of andragogy. Progressive adult educators give adult learners the practical knowledge and problem-solving skills necessary to reform society. Progressive educators see themselves as one solution to problems in society. They believe that education can help solve these problems. Online education because of its accessibility to almost everyone regardless of location or schedule, may be particularly appealing. Assignments in an online class following this philosophy will emphasize creation of practical, real world activities.

Radical philosophy of teaching proposes education as a force for achieving radical social, political and economic changes in society. A chief proponent of this philosophy of education is Paulo Freire (1970, 2003) who advocated radical conscientization as the true function of education among the oppressed (Elias & Merriam, 1995, p. 11). This philosophy's problem posing method of teaching can be andragogical, for it takes into consideration learner's readiness to learn and orientation to learning principles of andragogy. Radical adult educators work to change culture and its social structures. Instructors following this philosophy will encourage students to challenge the existing system and share their ideas beyond the confines of the course.

Analytic philosophy of teaching can be highly andragogical, for it emphasizes the need for clarifying concepts, arguments, and policy statements used in adult education. This logical and scientific positivism of analytic philosophy again indicates a democratic andragogical approach to adult learning. Elias and Merriam (1995) posited that the role of the analytic adult educators is not to construct explanations about reality but to eliminate language confusions (p. 181). In an online environment where much of the communication is in writing, expectations must be clearly expressed by both instructor and student. An instructor following this philosophy may give feedback focusing on the language used in the student's assignment rather than the content being correct or incorrect.

Liberal philosophy of teaching characterized by organized knowledge is pedagogical by nature, for lecture method is the most used and the most abused method by those who hold this kind of teaching philosophy. Liberal adult educators tend to make adult learners literate in the broadest sense—intellectually, morally, and spiritually. Many institutions of higher education claim to be "liberal arts" centered, meaning the faculty know what is best for students to learn, not the students themselves. An online instructor following this philosophy may use objectives to organize the course with all assignments and assessments clearly aligned.

 Behaviorist philosophy of teaching characterized by programmed learning, behavioral objectives, and competency-based teacher-education can be highly pedagogical. It is top-down education, an essential form of pedagogical philosophy of teaching in adult learning. The purpose of behaviorist education is to bring about behavior that will ensure survival of the human species, societies, and individuals and the role of behaviorist adult educators is to promote behavior change. Instructors following this philosophy may create timed tests to be taken online by students to assess their knowledge of course content.

Online instructors should reflect on their own teaching philosophies and how they are best translated in an online context. An effective teacher makes informed choices about content, delivery, activities, and assessment based on prior knowledge, experience, and interaction with the students. The instrument introduced in this exploratory study is one tool that can be used to facilitate reflective practice in online educators.

LITERATURE REVIEW

OVERVIEW OF ONLINE LEARNING

"Although a learner-centered approach is strongly supported in the literature, a teacher-centered approach is widely practiced in community college and university settings" wrote Kraska and Harris (2007, p. 19) in their study of cognitive style and teaching style. For self-directed adult learners, online learning requires an andragogical relationship with their instructors. As a consultant or delegator, instructors link their students to learning resources. In contrast, the pedagogical information transmitter will only disappoint self-directed adult learners who are experienced with a subject matter and are capable of teaching themselves. However, the information transmitter is highly helpful when adult learners are inexperienced with a subject matter and do not have independent learning skills.

The andragogical instructor should provide topics-driven courses with open-ended questions. Such online activities leave much room for adult learners' prior experience, which serves as the best resource for learning. When online topics-driven courses with open-ended questions are designed to accept their viewpoints (Wang, 2003), adult learners feel they are treated with dignity and respect. In this context, online adult education becomes andragogical education. For this to occur, students must interact with the instructor, with each other, and with the content (Dennen et al., 2007; Rhode, 2009). In Rhode's (2009) study of college students in a self-paced environment, students consistently rated interactions with the content and the instructor as more important than interactions with other learners. However, in a self-paced course, learner-to-learner interactions are obviously more difficult as each student is in a different place. Adapting to meet individual needs may also require sacrifice of other elements, such as peer knowledge sharing.

Thoughtful comments by the instructor may further facilitate online learning. Palloff and Pratt's 1999 research indicated that by providing thought-provoking comments, the instructor truly involves herself or himself in the learning process. Therefore, the instructor is viewed as a co-learner in the online educational process (Price, 1999). However, Dennen, Darabi, and Smith (2007) found that timeliness of feedback was more important than quantity of feedback, at least from the students' perspectives. As adult learners and the instructor learn together, a helping relationship instead of a directing relationship emerges. In their study of college students, Ravert and Evans found (2007)

> A continuing trend in all levels of education is toward creating constructivist and student-centered learning environments. The interest is particularly evident in literature on e-learning, where researchers and designers are enthusiastic regarding the potential of technology to allow for constructivist-oriented pedagogical approaches that have heretofore been difficult to accomplish. (p. 321)

Drawing on the literature of college student development, Ravert and Evans (2007) suggested that early college students may have difficulty with a course where the instructor follows andragogical principles or constructivism. Contrary to the helping relationship, the directing relationship reveals that an online instructor manages courses

by learning objectives. These objectives may stem from certification standards or departmental benchmarks. The pedagogical instructor tends to follow a behaviorist philosophy of teaching, which is driven by behavioral objectives. This is not to suggest that the helping relationship does not utilize any learning objectives. Rather, the andragogical instructor encourages adult learners to go beyond stated learning objectives or to create the learning objectives together. The directing relationship reflects competency-based teacher education. In this mode, teachers prefer to be regarded by their students as an unchallengeable authority. The more control the instructors have over the learners, the better they believe their learners can learn. The instructor may feel uncomfortable if she or he loses control of the learners. In an online environment especially, trust is essential between instructor and students for the course to be successful.

Without question, learning takes place in relationship with teachers, whether it is through direct interaction with the instructor or through direct interaction with content created or organized by the instructor. When it comes to online transformative learning, a teacher-learner relationship plus Internet Environment plus learners' critical reflection equal learner changed (transformation and emancipation in Mezirow and Freirian terms). The researchers sought to determine whether online adult education instructors preferred andragogical philosophies over pedagogical philosophies. Specifically, the researchers wanted to know the preferences of online adult education instructors relative to various teaching philosophies, each linked to either andragogy or pedagogy. Each of these philosophies of teaching will be explained in more detail in the Theoretical Framework section of this article.

OVERVIEW OF ONLINE LEARNING

Knowles predicted that teaching, especially teaching of adults for the 21st century would be delivered electronically. Knowles also predicted that the de-institutionalization of education, in the form of open and independent learning systems, is creating a need for learners to develop appropriate skills. "Students entering into these programs without having learned the skills of self-directed inquiry will experience anxiety, frustration and often failure, and so will their teachers" (Knowles, 1975). The connection Knowles drew between adults' online transformation and principles of andragogy, especially self-concept of adult learners is clear. Today's academic institutions are in transition. According to the National Center for Education Statistics (2009), "From 2006 to 2017, NCES projects a rise of 10 percent in enrollments of people under 25, and a rise of 19 percent in enrollments of people 25 and over" (para. 2).

The changing nature of the population of students mean instructors must also adapt their methods. Kraska and Harris (2007) noted, "increased diversity of students may frustrate instructors. Unfamiliar with many of the new student characteristics, instructors see contemporary students as hopelessly unprepared" (p. 8). Thus, any instructor in higher education should be familiar with andragogical learning, as more learners are adults returning to class. One of the characteristics of nontraditional students (adult learners) is that they perform multiple roles and responsibilities (Wang, 2003). To accommodate adult learners' needs, more and more institutions of higher learning have responded to Knowles' call 20 years ago by turning to the use of the Internet to deliver courses to students at a distance, as well as to enhance educational programs that are delivered on campus.

Information technology has the potential to solve many of the problems. It can change the roles of students and faculty. Although Knowles made a successful prediction about the use of electronic media for the education and training of adult learners in the

21st century, he did not spell out the connections between andragogical/pedagogical orientations and the teaching philosophies of online instructors. It is researcher's responsibility to align these orientations with the preferred teaching philosophies of online instructors. "If students' learning styles are compatible with the teaching style of their instructors, they tend to retain more information, effectively apply it, and have a better attitude toward the subject" (Wirz, 2004, p. 1). Instructors must be able to recognize their own teaching philosophies and teaching styles to be able to meet the needs of learners.

METHODOLOGY

RESEARCH QUESTIONS

This study was designed to answer the following research questions:
- With what philosophies of education do online instructors of adults align their beliefs? Are these philosophies pedagogical or andragogical in nature?
- What activities and assessments do online instructors of adults use and believe are effective? Consequently, are these activities pedagogical or andragogical in nature?
- Do the philosophies and learning activities and assessments used by the online instructors of adults align?

PARTICIPANTS

As technology comes into greater use, faculty and students alike are grappling with changes it brings to the educational environment. The Professional Studies Department of California State University, Long Beach (CSULB) has seized the chance and enrolls approximately 1500 adult students in its distance education programs every semester. Students in the CSULB Professional Studies Programs usually are classified as non-traditional students; they come from such backgrounds as police and military officers, firefighters, secondary and postsecondary instructors and teachers, corporate employees, and many others. Participants in this study have been teaching adult students in their own disciplines. Because of the nature of their work, these adult students take courses related to Adult Education via the Internet offered through Professional Studies Department at CSULB.

One of the purposes of offering courses in adult education online by CSULB is to equip online instructors with sound teaching philosophies so that adult learning can be maximized. Therefore, in this study they were identified as a group of "online instructors and /or adult educators." In the Spring Semester of 2010, a survey of 37 online instructors at CSULB was conducted. The online instructors taking courses of Adult Education via the Internet from the Department of Professional Studies at CSULB were from 25 to 65 years old. This convenience sample is just the first step in this exploratory study; further research is needed to draw any conclusions.

INSTRUMENT DEVELOPMENT

The study employed a qualitative design supplemented with a descriptive statistics element. First, the researcher designed a survey instrument called Online Philosophies of Adult Education Scale (OPAES) to determine and describe online instructors' andragogical and /or pedagogical teaching philosophies in the electronic classroom

(cyberspace learning). The survey instrument was designed based on Elias and Merriam's (1995) and Knowles, Holton and Swanson' (1998) description of what adult educators may do if they possess certain andragogical/pedagogical teaching philosophies either in a traditional classroom setting or in an online learning situation.

The survey utilizes a Likert scale from five to zero with five being the highest (support for the student-centered approach to learning) and zero the lowest (support for the teacher-directed approach to learning). For this study, survey responses were used to determine and describe online instructors' andragogical and /or pedagogical teaching philosophies in cyberspace in order to develop the base of data. The adult educators' mean scores were calculated using the Statistical Package for Social Sciences (SPSS-16.0 for Windows). High mean scores represent support for the student-centered approach (andragogical) to teaching. Low mean scores indicate support for the teacher-directed approach (pedagogical) to teaching. If a mean score nears the mean score (2.5), it may indicate support for the andragogical philosophy; it may also indicate support for the pedagogical philosophy.

In addition, the instrument included questions regarding why these adult educators chose certain andragogical philosophies in preference to others. The survey was available online to 60 adult educators who were taking the courses via the Internet offered through Professional Studies Department at CSULB in the Spring Semester of 2010. Thirty-seven (62%) of these adult educators volunteered to respond to the survey instrument, and their survey was submitted to the researcher anonymously through a feature called digital drop box inside Beachboard. While this is a small sample size, this study is exploratory in nature, and the response rate was high.

A group of three adult education instructors in the department of Professional Studies, California State University, Long Beach, California, who were not included in the sample, were used in a pilot study to validate the instrument. Data gathered from the validation study were not included in the study but were used to determine whether revisions to the instrument were needed. The validation study was also used to test to clarity and comprehensibility of the questionnaire items. Validation study results indicated revisions to the instrument were not needed. In sum, the questions used could be considered content valid. The alpha reliability coefficient for the instrument was .92. (N of cases = 37, N of items = 19).

DATA ANALYSIS

Data collected in this study were analyzed using SPSS (16.0 for Windows) software. Since the survey instrument (OPAES) contain positive items and negative items, different values were assigned to these items. For positive items, values are assigned: "Always" equals five, "almost always" equals four, "often" equals three, "seldom" equals two, "almost never" equals one and "never" equals zero. Negative items were reverse coded. . Omitted items were assigned a neutral value of 2.5.

Analysis was conducted for each item in the research question. For descriptive statistics, mean scores and standard deviations were reported for adult education educators' responses. To provide a better picture of the population surveyed, the overall scale mean scores and standard deviations were also calculated.

To provide greater depth of analysis, patterns and themes in qualitative data were reported to supplement and complement descriptive statistics findings. First, the textual data was organized categorically, reviewed repeatedly, and continually coded. Second, patterns and themes from the perspective of the participants were identified and described. The patterns and themes were listed using percentages in the section of findings. Third, these patterns and themes were analyzed and compared to the findings

from the descriptive statistics data analysis, and the literature review of the study. The data analysis process was not aided by the use of a qualitative data analysis computer program since the qualitative database is small (e.g., less than 500 pages of transcription) (Creswell, 2003).

Findings

Tables 2-7 summarize the analysis of survey results. The mean scores for these adult education instructors on each of the six principles of andragogy are presented in separate tables. Each of the tables contains several items that determine and describe online instructors' andragogical and /or pedagogical teaching philosophies. The standard deviation scores for these online adult education instructors are also provided in the tables. Table 2 summarizes the online adult educators' responses for Liberal Teaching Philosophy.

Table 2 indicates that online adult education instructors had high scores in the two variables. The results suggest that these instructors favored the liberal Teaching Philosophy. When conducting teaching, they tended to use the lecture method as an efficient instructional strategy and supported the notion of developing students' intellect through reading, reflection, and production. The use of the lecture method is greatly supported in the literature.

Table 2. *Responses to Mode One: Liberal Teaching Philosophy*

	n = 37	N = 60
	M	SD
1. I use the lecture method as an efficient instructional strategy.	3.00	1.41
19. I develop students' intellect through reading, reflection, and production.	4.00	1.00

Table 3 shows that the online adult education instructors had high scores on the four variables. These results indicate that these instructors applied the experiential learning principle of andragogy in their learning and teaching. First, they provided a learning setting in which they became a co-learner, a helper, guide, encourager, consultant and resource person. They also organized, stimulated, instigated, and evaluated the highly complex process of education.

Table 3. *Responses to Mode Two: Progressive Teaching Philosophy*

	n = 37	N = 60
	M	SD
3. I organize, stimulate, instigate, and evaluate the highly complex process of education.	3.65	1.18
6. I am a helper, guide, encourager, consultant, and resource instead of a transmitter, disciplinarian, judge and authority.	4.22	1.18
7. I provide the setting that is conductive to learning.	4.30	1.08
8. I become a learner in the learning process.	4.30	1.08

Table 4 indicates that these online adult education instructors had high scores on the variables in Behavioral Teaching Philosophy. The results show that these instructors designed an environment that elicited desired behavior toward meeting educational goals and to extinguish behavior that was not desirable. They were contingency managers, environmental controllers or behavior engineers who planned in detail the conditions necessary to bring about desired behavior. These results indicate that these online adult education instructors favored behavioral Teaching Philosophy.

Table 4. *Responses to Mode Three: Behavioral Teaching Philosophy*

	n = 37	N = 60
	M	SD
4. I design an environment that elicits desired behavior toward meeting educational goals and to extinguish behavior that is not desirable.	3.89	1.13
5. I am a contingency manager, an environmental controller, or behavioral engineer who plans in detail the conditions necessary to bring about desired behavior.	2.97	1.24

Table 5 indicates that online adult education instructors had high scores in four of the five variables that make up humanistic Teaching Philosophy. These results suggest that these instructors basically favored humanistic Teaching Philosophy except that they provided information to their students, which is something humanistic instructors do not do. The results show that these instructors were facilitators, helpers, and partners in the learning process; they created the conditions within which learning could take place; they trusted students to assume responsibilities for their learning and respected and utilized the experiences and potentialities of students. Humanists do not provide information to students. However, these online adult education instructors provided information to their students.

Table 5. *Responses to Mode Four: Humanistic Teaching Philosophy*

	n = 37	N = 60
	M	SD
11. I trust students to assume responsibility for their learning.	3.97	1.07
12. I respect and utilize the experiences and potentialities of students.	4.46	0.77
13. I provide information to my students.	0.49	0.77
14. I am a facilitator, helper, and partner in the learning process.	4.49	0.69
15. I create the conditions within which learning can take place.	4.30	0.91

Table 6 shows that these online adult education instructors had high scores in three of the four variables that comprise radical Teaching Philosophy. These results indicate that these instructors generally applied radical Teaching Philosophy except that they determined the themes that served to organize the content of the dialogues, which is something radical instructors do not do.

Table 6. *Responses to Mode Five: Radical Teaching Philosophy*

	n = 37	N = 60
	M	SD
9. I offer a libertarian, dialogic, and problem-posing education.	3.27	1.07
10. I emphasize the importance of dialogue and equality between teacher and learners.	4.08	0.95
16. I am open to clarifications and modifications.	4.65	0.63
17. I determine the themes that serve to organize the content of the dialogues.	1.35	0.79

Table 7 indicates that these online adult education instructors did not favor analytic Teaching Philosophy. Although they eliminated language confusions, they constructed explanations about reality, which is something analytic instructors do not do.

Table 7. *Responses to Mode Six: Analytic Teaching Philosophy*

	n = 37	N = 60
	M	SD
2. I eliminate language confusions.	3.95	1.08
18. I construct explanations about reality.	1.54	1.37

Table 8 shows that online adult education instructors had high scores on Mode One, Two, Three, Four and Five. This result suggests that these instructors applied liberal Teaching Philosophy, experiential approach to teaching, behavioral Teaching Philosophy, humanistic Teaching Philosophy and radical Teaching Philosophy. Although relatively a little higher than the mean score 2.5, their score on the Analytic Teaching Philosophy was low in comparison with other scores, indicating that these instructors might not favor the analytic Teaching Philosophy.

Table 8. *Grand Mean and Standard Deviations on the Six Teaching Philosophies*

	n = 37	N = 60
	M	SD
1. Liberal Teaching Philosophy	3.50	1.21
2. Progressive Teaching Philosophy	4.12	1.13
3. Behavioral Teaching Philosophy	3.43	1.19
4. Humanistic Teaching Philosophy	3.54	0.84
5. Radical Teaching Philosophy	3.34	0.86
6. analytic Teaching Philosophy	2.75	1.23

The nine qualitative questions included in the survey (see Appendix) were designed to parallel the Likert scale portion of the survey developed out of Elias and Merriam's (1995) and Knowles, Holton and Swanson' (1998) description of what adult educators may do if they possess certain andragogical/pedagogical teaching philosophies either in a traditional classroom setting or in a cyberspace learning situation. For the first two questions, thirty (81%) of 37 adult education instructors indicated "yes" as their answer. For question three, twenty-two (59%) of 37 adult education instructors gave yes as their answer. For question four, twenty-nine (78%) of 37 adult education instructors indicated "yes" as their answer. For question five, ten (27%) of 37 adult education instructors indicated "yes" as their answer.

For question six, twenty-six (70%) of 37 adult education instructors indicated that they did not use a learning contract when assessing adult students' learning. For question seven, thirty-three (89%) of 37 adult education instructors indicated "yes" as their answer. For question eight, thirty-three (89%) of 37 adult education instructors indicated "yes" as their answer. For question nine, thirty-three (89%) of 37 adult education instructors indicated "yes" as their answer.

In addition, the nine qualitative questions were enhanced by open-ended questions. "Why or why not" was added to each of the nine questions and major themes and patterns emerged from the survey. These themes and patterns were discussed in next Discussion Section under the fifth paragraph.

DISCUSSION

For the pedagogical approach to teaching, the participants tended to use the lecture method as an efficient instructional strategy and supported the notion of developing students' intellect through reading, reflection, and production. They designed an

environment that elicited desired behavior for meeting educational goals and that extinguished behavior that was not desirable. They were contingency managers, environmental controllers or behavior engineers who planned in detail the conditions necessary to bring about desired behavior. The use of this pedagogical approach in the online environment may reflect several psychological and spiritual issues: our online adult learning professionals may have a fear of losing control or a fear of losing authority over students. If they do not stay highly connected with students by being liberal and behaviorist, they feel that adult learners' online transformation may never take place. The use of this pedagogical approach in the online environment may also reflect the fact that some online adult learners may constantly search for connection, interdependence, intimacy, and safety. If their instructors are not "there" for them, these adult learners may feel isolated, aimlessly wandering (Rhode, 2009). Palloff and Pratt's 1999 research revealed that extroverted adult learners in cyberspace learning environments require their instructors to be pedagogical in their instruction.

For the andragogical approach to teaching, these adult education instructors applied the experiential learning principle in their teaching and learning. They provided a learning setting in which they became a co-learner, a helper, guide, encourager, consultant and resource person. They organized, stimulated, instigated, and evaluated the highly complex process of education. The instructors surveyed were facilitators, helpers, and partners in the learning process; they trusted students to assume responsibilities for their learning and respected and utilized the experiences and potentialities of students. This preference for the andragogical approach to teaching in the online environment appears related to Knowles' humanistic assumption that every adult learner has unlimited potential for learning. All adult learners have enormous pent up energy. Once stimulated, low achievers can become high achievers under the influence of an andragogical facilitator.

Although they are the beneficiaries of principles of andragogy, these online adult education instructors violated Knowles' humanistic principles and Freire's principle of problem-posing education. For example, these instructors provided information to their students, which is something humanistic instructors do not do. They determined the themes that served to organize the content of the dialogues, which is something Freire's followers would not do. However, these violations of andragogical principles can be justified if we consider Grow's 1991 Stages in Learning Autonomy.

Grow's (1991) Stages in Learning Autonomy suggest that learners' stages of learning determine the situational roles of adult educators. It must be noted that the order of learners' stages of learning may not be sequential, for some adult learners may not necessarily go through stage 1 and stage 2 before they reach stage 4 (W. McWhinney, personal communication, February 12, 2004). Grow's Stages in Learning Autonomy illustrate the situational roles of adult educators also for the online learning environment. If adult learners are still at Stage 1 and Stage 2, online adult education instructors do not need to be andragogical. Following a humanistic and Freirian approach at this point may frustrate and lose adult learners in the online learning environment.

Findings of the qualitative portion of the study revealed surprising results. Responses to the qualitative questions also indicated that the 37 online adult education instructors surveyed supported both the andragogical approach to teaching and the pedagogical approach to teaching in the electronic classroom setting (cyberspace learning). This could be considered as a major theme and pattern. Due to the popularity of andragogy, researchers may tend to believe that online adult education instructors should employ the andragogical approach in the virtual classrooms. What was surprising for Western adult learning professionals was that 27% of the 37 online adult education instructors surveyed

indicated that they believed the lecture (text-based) method is superior to facilitating learning. For example, 27% of the 37 online adult education instructors claimed:

> Lecture has its place when utilized for specific technical information provided to those who do not have a base knowledge and when time is of the essence. Yes, the lecture method is a needed tool when the learner has no clue as to the subject matter. Otherwise the teacher needs to determine what it is she/he is hiding. Yes, lecture will define the material and process…

The result was surprising as these participants did not comment on the popular andragogical approach at all. They directly made positive comments on the pedagogical approach. This result, on the other hand, confirmed that the teaching philosophies preferred by Chinese adult educators may also be preferred by American adult learning professionals. Wang and Bott's (2004) research showed that in general, political, economic, and social context determined Chinese adult educators' preference for the pedagogical methods in their instruction of adult learners. Although a surprising theme or pattern from this research, it is not strongly supported by mainstream adult education literature in the West.

Another surprising result was that 70% of the 37 adult education instructors surveyed indicated that they did not believe in using a learning contract when assessing adult students' learning. This response is surprising in light of the fact that the Western form of andragogy (student-centered teaching) is characterized by using learning contracts to structure coursework, negotiating the syllabus, asking students to compile personal learning journals, and relying on open-ended discussion methods. This major theme and pattern from this particular research is not supported by mainstream adult education literature in the Western Hemisphere. It is surprising in the sense that the research was conducted on the West Coast of the United States where "using a learning contract" to assess adult learning has been a well-accepted approach especially among those adult education instructors who are considered the followers of Malcolm Knowles, the father of adult education. The participants from this research further indicated that using Knowles' learning contract may undermine the self-directed learning preference of adult learners. They claimed that using a learning contract is pedagogical and that it is most appropriate for pre-adults and immature learners. In this view, self-directed learners should not be bound by a learning contract, for they know exactly whether learning has taken place or whether learning has illuminated the dark areas of ignorance in the online learning environment. This surprising result may set Western scholars/researchers in rethinking their preferences over andragogical approaches as opposed to pedagogical approaches.

The response to other qualitative questions confirmed the descriptive statistics portion of the study. Thirty-three (89%) of 37 adult education instructors indicated that being self-directed in learning allows their students to be in control of their education. This could be considered as the third major theme and pattern of this major qualitative study. Participants further indicated that designing activities that build students' self-esteem and sense of accomplishment while delivering course content could better motivate adult learners. By using real-life examples, developing assignments related to real-life situations and embedding the content of courses in everyday life, online adult education instructors could make their course more relevant and meaningful. A crucial part of Mezirow's Transformative Learning Theory (1991, 2000) is reflection on the part of the adult learners themselves. By being andragogical facilitators in the online learning environment, instructors make space for perspective transformation (King, 2000). The online classroom is fertile territory for transformational learning.

CONCLUSIONS AND FUTURE RESEARCH

The purpose of the study was to determine and describe online instructors' andragogical and /or pedagogical teaching philosophies. The findings of the descriptive statistics portion of the study showed that the 37 online adult education instructors surveyed supported both a teacher-centered (pedagogical) approach to teaching and a student-centered (andragogical) approach to teaching in the electronic classroom setting (cyberspace learning). Future studies using a larger sample size would further validate the instrument. Additional questions, such as length of time teaching online, could determine if experience was a predictor. Future studies using online observations of the participants' classrooms could also determine if the self-report items on the survey were actually occurring.

The significance of this qualitative study is that its results corroborated Hase and Kenyon's 2000 research, which suggested that Knowles set the foundation for principles of adult learning, but these principles still include a teacher-student relationship. If this is true, then the current study takes this teacher-student relationship one step further. It is either the helping relationship (andragogical philosophy) or the directing relationship (pedagogical philosophy) plus the learning environment (i.e., the Internet, Cyberspace) that leads to adult learners' online critical reflection in Mezirow's terms.

In light of these findings, adult learning professionals should be encouraged to stop labeling themselves as "trained" online facilitators just because they wish to show that they are true followers of such andragogical leaders as Knowles, Rogers, Mezirow, Jarvis, Brookfield and Merriam. For adults' online transformation, andragogy is not the only way. Pedagogy still has its place. It is in relationship with others that learners learn. This relationship could be a helping relationship; it could be a directing relationship. Only when these adult learning professionals move in and out of the pedagogical and andragogical philosophies freely, can they really become successful online "facilitators" of adult learners in digital classroom settings.

The results of this study confirmed Hersey and Blanchard's (1969) situational leadership styles in that when followers (online learners in this context) have low need for direction and low need for support, leaders (teachers of online courses) become consultants or delegators. Self-directed as learners are in an online context, they still need a relationship with their teachers, and this relationship reflects a humanistic helping relationship, which is the andragogical teaching philosophy. When followers (online learners) have high need for direction and high need for support, leaders (teacher of online courses) become directors/coaches. When such a situation occurs, teachers have to switch to the pedagogical teaching philosophy, which is characterized by being liberal and behaviorist in teaching.

Since Knowles predicted that teaching, especially teaching of adults for the 21st century, would be delivered electronically, adults' online transformation and principles of andragogy have become inseparable. However, this is not to say that the teacher-centered approach to teaching and learning does not have its place among adult learners/educators. To try to restrict online teaching/learning to the andragogical method is to fail to understand the teaching and learning process. Certain aims and objectives of a lesson and the content to be taught may leave adult learning professionals with no room for their andragogical preference. To restrict teaching exclusively to an andragogical method may allow for the possibility of irresponsibility and unacceptable eccentricities especially when andragogy is referred to more as an art rather than a science.

To try to say which of the two methods of teaching (pedagogical and andragogical) affects adults' online transformation more is extremely difficult since each of us who

teaches engages not only in a time-honored process but one that is quite unique to the immediate situation in which we are actually teaching. The more we understand the difference between pedagogical philosophies and andragogical philosophies, the more likely we are to understand those whom we are privileged to teach online. Perhaps it is safe and beneficial to conform to Knowles' reminder that "an essential feature of andragogy is flexibility" (Knowles, 1984, p. 418). By being flexible, adult learning professionals accommodate both andragogical philosophies and pedagogical philosophies. A linear mode of teaching (either solely andragogical or solely pedagogical) can be detrimental in helping adults learn.

The issues of pedagogy and andragogy have ignited a tremendous amount of research into adult learning since Knowles advanced the principles of andragogy. These issues (i.e., pedagogy versus andragogy) will continue to spark further and subsequent research given the nature of the 21st century online transformation and emancipation. In the meantime, a new model has emerged from this study that can serve as the theoretical basis for further research to refine reflective adult education theory in the context of cyberspace learning. Both the helping relationship (andragogical philosophy) and the directing relationship (pedagogical philosophy) of adult learning professionals either *facilitate* or *inhibit* critical reflection of adult learners because these two relationships determine either the andragogical methods/styles or the pedagogical methods/styles, which eventually impact adult learners' critical reflection. The process by which these two relationships contribute to critical reflection in transformative learning in the online environment is illustrated in the model presented in Figure 1.
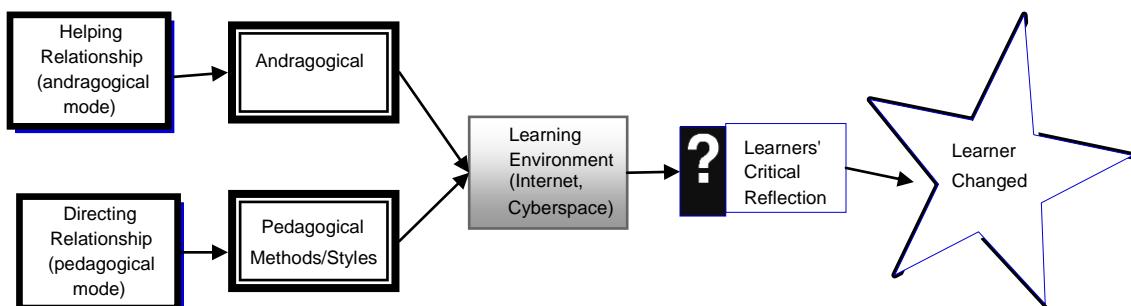

Figure 1. Model of Reflective Adult Education Theory

This diagram illustrates the dynamic interaction of factors that contribute to learners' critical reflection in Mezirow's terms. A number of significant points are worth noting.

1. The helping relationship between adult learners and adult learning professionals comes from both the adult learning professionals' internal beliefs and the adult learners' self-direction in learning. This relationship inherently leads to andragogical methods and styles. The relationship provides the guiding principles for teachers of adult learners.
2. The directing relationship between adult learners and adult learning professionals may come from the adult learning professionals' internal beliefs. However, more often this relationship is determined by external factors such as the adult learners' need for direction and support. Naturally, this directing relationship leads to pedagogical methods and styles. This relationship may coexist with the helping relationship.
3. Both andragogical methods/styles and pedagogical methods/styles impact the learning environment. The online environment is ***not*** a vacuum. It is filled with human interaction.

4. Adult learners' critical reflection may occur by its self. That is, critical reflection depends on a set of individual skills and processes to teach. However, it is largely in relationship with others and with the environment that adult learners' critical reflection occurs.

5. Although from time to time, adult learners' critical reflection may be determined by factors other than those proposed on the model, this model illustrates the essential roles the two relationships play in impacting adult learners' critical reflection.

As more students turn to online learning, researchers must study this setting just as they would the face-to-face classroom. Findings from traditional classrooms settings may not translate into the online environment. Adult learners in an online environment require specific strategies, and instructors must be willing to meet their needs.

References

Boxler, H. N. (2004). Grounded practice: Exploring criticalities in a job reeducation setting. *Adult Education Quarterly, 54*(3), 210-223.

Brockett, R. B., & Hiemstra, R. (1991). *Self-direction in adult learning: Perspectives on theory, research, and practice.* New York, NY: Routledge.

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

Brookfield, S. (1991). On ideology, pillage, language and risk: Critical thinking and tensions of critical practice. *Studies in Continuing Education*, *13*(1), 1-14.

Brookfield, S. (1995). *Becoming a critically reflective teacher.* San Francisco, CA: Jossey-Bass.

Candy, P. C. (1991). *Self-direction for lifelong learning.* San Francisco, CA: Jossey-Bass.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Dennen, V.P., Darabi, A.A., Smith, L.J. (2007). Instructor-Learner interaction in online courses: The relative perceived importance of particular instructor actions on performance and satisfaction. *Distance Education, 28*(1), 65-79.

Elias, J. L., & Merriam, S. B. (1995). *Philosophical foundations of adult education.* Malabar, Florida: Krieger Publishing Company.

Freire, P. (1970). *Pedagogy of the oppressed.* New York, NY: Seabury Press.

Freire, P. (2003). *Pedagogy of the oppressed.* New York, NY: The Continuum International Publishing Group.

Grow, G. O. (1991). Teaching learners to be self-directed. *Adult Education Quarterly*, *41*(3), 125-149.

Hammonds, K., Jackson, S. ,DeGeorge, G. , & Morris, K. (1997). "*The new university: A tough market is reshaping colleges.*" Retrieved from http://www.businessweek.com/1997/51/b3558139.htm

Hase, S., & Kenyon, C. (2000). From andragogy to heutagogy. Retrieved from http://ultibase.rmit.edu.au/Articles/dec00/hase2.htm

Hersey, P., & Blanchard, K. (1969). *Management of organizational behavior: Utilizing human resources.* Englewood Cliffs, NJ: Prentice-Hall.

King, K. P. (2000). Educational technology that transforms: Educators' transformational learning experiences in professional development. *Proceedings of the 42nd Annual Adult Education Research Conference*. British Columbia, Canada: University of British Columbia.

Knowles, M. S. (1975). *Self-directed learning*. New York, NY: Association Press.

Knowles, M. S. (1984). *Andragogy in action*. San Francisco, CA: Jossey-Bass.

Knowles, M. S., Holton, E., & Swanson, A. (1998). *The adult learner.* Houston, TX: Gulf Publishing Company.

Kraska, M. & Harris, S. (2007) Cognitive and teaching style preferences of officers attending the Air Force Reserve Office Training Instructor Course. *Journal of Industrial Teacher Education, 44*(5), 5-24.

Merriam, S. B. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. *New Directions for Adults & Continuing Education*, *89*, 3-13.

Merriam, S. B., & Caffarella, R. S. (1999). *Learning in adulthood*. San Francisco, CA: Jossey-Bass.

Mezirow, J. (1985). A critical theory of self-directed learning. In S. Brookfield (Ed), *Self-directed learning: From theory to practice*. New Directions for Continuing Education, No. 25. San Francisco, CA: Jossey-Bass.

Mezirow, J. (1990). *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning*. San Francisco, CA: Jossey-Bass.

Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.

Mezirow, J. (Ed.). (2000). *Learning as transformation: Critical perspectives on a theory in progress*. San Francisco, CA: Jossey-Bass.

National Center for Education Statistics. (2009). *Fast facts*. Retrieved from http://nces.ed.gov/fastfacts/display.asp?id+98

Palloff, R. M., & Pratt, K. (1999). *Building learning communities in cyberspace*. San Francisco, CA: Jossey-Bass.

Pratt, D. D. (1988). Andragogy as a relational construct. *Adult Education Quarterly*, *38*, 160-181.

Pratt, D. D. (1993). *Andragogy after twenty-five years. New Directions for Adult and Continuing Education, No. 57*. San Francisco, CA: Jossey-Bass.

Price, D. M. (1999). Philosophy and the adult learner. *Adult Learning*, *11*(2), 3-5.

Ravert, R.D. (2007). College student preferences for absolute knowledge and perspective in instruction: Implications for traditional and online learning environments. *The Quarterly Review of Distance Education, 8*(4), 321-328.

Rhode, J.F. (2009). Interaction equivalency in self-paced online learning environments: An exploration of learner preferences. *International Review of Research in Open and Distance Learning, 10*(1), 1-23.

Tough, A. (1967). *Learning without a teacher*. Educational Research Series, No. 3. Toronto, Canada: Ontario Institute for Studies in Education.

Tough, A. (1971). *The adult's learning project*. Toronto: Ontario Institute for Studies in Education.

Twigg, C. (1994). *The need for a national learning infrastructure*. Retrieved from http://education.edu/web/pubs/review/reviewArticles/29516.html

Wang, V. (2003). *Principles of adult education*. Boston, MA: Pearson.

Wang, V. (2004-2005). Adult education reality: Three generations, different transformation the impact of social context: three generations of Chinese adult learners. *The New York Journal of Adult Learning*, *3*(1), 17-32.

Wang, V., & Bott, P. A. (2004). Modes of teaching of Chinese adult educators. *The New York Journal of Adult Learning, 2*(2), 32-51.

Wang, V., & Sarbo, L. (2004). Philosophy, role of adult educators, and learning How contextually adapted philosophies and the situational role of adult educators affect learners' transformation and emancipation. *Journal of Transformative Education*, *2*(3), 204-214.

Wirz, D. (2004). Students' learning styles vs. professors' teaching styles. *Inquiry, 9*(1). Retrieved from http:/;/www.vccaedu.org/inquiry/inquiry-spring2004/i-91-wirz.html

APPENDIX

Nine Qualitative Questions to supplement and complement the Descriptive Statistics Analysis

1. Briefly identify the following individuals: Malcolm Knowles, Jack Mezirow, Peter Jarvis, Stephen Brookfield, Kathleen King, and Sharan B. Merriam. Please indicate "unknown" for individuals you cannot identify.
2. Briefly explain the difference between andragogy and pedagogy.
3. Do you negotiate curricular priorities with your adult students at the beginning of each course you teach? Why or why not?
4. Do you take into account your adult learners' prior experience when planning your lessons?
5. Do you believe that the lecture method is superior to facilitating learning? Why or why not?
6. Do you use a learning contract when assessing adult students' learning? Why or why not?
7. Do you think it should be a goal of adult educators to help all adult learners become self-directed?
8. Do you design activities that build students' self-esteem and sense of accomplishment while delivering course content? Why or why not?
9. Do you encourage a search for real-life examples, develop assignments related to real-life situations and embed the content of your course in everyday life? Why or why not?