LEARNING ASSESSMENT METHODS THAT ENHANCE LEARNING OUTCOMES IN ADULT DISTANCE LEARNING COURSES

by

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ABSTRACT

This study addressed the dual challenge of enhancing and assessing adult learning outcomes in distance learning environments. Andragogy, the art and science of teaching adults, involves concepts, methods and principles that are often not served well by traditional teaching and learning assessment tools. Adult learners bring a wealth of information and experience to the learning situation and want to direct themselves in the education process. Authors stress that andragogy should include assessment methods that enhance adult learning, however, they note that many educators, particularly those in Distance Learning, are not prepared for andragogical teaching. This study examined the validity of these views, and looked within the academic community to identify areas of opportunity for enhancing adult learning via the assessment process.

"Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand." —*Confucius, circa 450BC*

The Dual Challenge: Enhancing and Assessing Adult Learning

As distance learning becomes a major component of many college degree programs, educators find it necessary to develop new teaching methods that utilize the electronic marvels of the internet. Even those teachers who had become adept at using the new classroom electronic teaching tools (computers, projectors, slide shows and videos) are now discovering that a still-different set of tools and skills are required for developing and teaching adults in the "online" distance learning environment.

The challenge of enhancing and assessing specified student learning outcomes is magnified considerably by the "distance" between students and teachers, as well as the asynchronous character of most of these courses. Students may be able to view videos or other media created for a course, but teachers are essentially "shooting from the hip" when trying to conduct coherent regular sessions and generate dialog with students they have never seen or heard.

An immediate problem online instructors encounter is assessing students' learning ability to determine their "adult" intellectual capability and what type of teaching method is appropriate. Only then can teachers define appropriate levels of adult learning for the students enrolled in specific courses.

Defining Adult Learning

Before considering how to assess or enhance adult learning outcomes, educators must first define adult learning as it differs from child learning, and understand the differences. Many authors use the term 'andragogy' to identify the art and science of teaching adults. This definition is generalized by Krajinc (1989) as "the art and science of helping adults learn and the study of adult education theory, processes and technology to that end."

Most educators agree that adult learners often seek out learning opportunities in order to cope with life changes; they usually want to learn something they can use to better their position or make a change for the better. "They are not always interested in knowledge for its own sake. Learning is a means to an end, not an end in itself. These adults bring a wealth of information and experiences to the learning

situation. They generally want to be treated as equals who are free to direct themselves in the education process" (Zemke, 2001).

Whether in a classroom or in a distance learning setting, adult learners tend to be autonomous and self-directed; their teachers guide them to their own knowledge rather than supplying them with facts. This is even more evident in the distance learning environment, where teachers cannot use face-to-face Socratic teaching styles to generate real-time individual or group involvement in the discovery and invention of knowledge.

The Assessment Dilemma

Because adult learners often bring knowledge into their courses and often learn from each other, students and teachers really benefit from the intellectual diversity that exists in an online course—provided teachers encourage it. Student-initiated real-world examples and research projects are consistently effective in providing adults the knowledge and skills they need and seek, particularly in business and management courses. As the diversity of reality enters the arena, so also do the broadness and depth of knowledge shared. Thus, as teachers encourage thought and discussion in the adult distance learning environment, they find that "standardized" answers for courses fail to respond to the questions these discussions evoke.

Traditional Learning Assessment Tools

Assessing learning outcomes in distance learning courses usually involves the same three measurement devices used in the traditional classroom environment: written examinations, term papers/projects and evaluation of student participation.

Each of these devices is itself a valid tool for measuring student knowledge of the theory, processes and applications within a topic area. But in the distance learning environment, there is additional concern that such assessments are administered and evaluated fairly, and that academic honesty is not compromised because of distance and time factors. Schools go to great lengths to apply these assessments rigorously, but such rigor tends not to inspire the levels of exploration, discovery and invention that define adult learning and satisfy its purposes.

Standardized tests, rigidly formatted writing requirements and canned case studies only drive students back to conformity of thought—mostly what they think the teacher wants to see. Methods that might have worked well to assess pedagogical learning tend to work against the very purpose of andragogical learning characterized by valuable student knowledge inputs and individual learning objectives. Clearly, there is a need for alternative assessment tools for the unique circumstances presented by adult distance learning.

The problem addressed by this study, therefore, is to explore this dilemma and uncover opportunities and methods through which teachers in adult distance learning programs may use learning assessment methods that actually enhance adult learning outcomes.

Exploring the Assessment Dilemma

Numerous educators have explored this dilemma, seeking ways to evaluate adult learning that evoke specific performance in the usual measurement devices (exams, papers/projects and assessment of participation), while at the same time encouraging adult students to prepare for these devices by being and performing as

adult learners. Educators have sought to create a straight-line relationship between what is taught, discussed, shared and even argued in an online course, and how adult students' learning is measured.

Malcolm Knowles, often called "the father of andragogy," offered core concepts about adult learning assessments that will actually encourage adult learning in courses, and also in the assessment process itself. Knowles (1984) cites the interrelationship of adult learning and assessment in describing andragogy as "problem-centered, with students involved in the both the planning and evaluation aspects" of courses.

Claiming that many educators in the current era are not sufficiently skilled as teachers of adults, Pratt (1998) identifies them as "andragogical amateurs, doing adult education based on their content expertise . . . not based on trained or studied educational competence."

Adult Learning Requires Adult Learning Assessments

It makes sense that teachers of adults must first understand the needs and methods for teaching adults before being able to devise assessment methods that recognize these needs and thereby enhance these methods. But as recently as the late 1980s, the term 'andragogy' was known mostly to insiders. There was little or no formal training for adult educators, little theoretical knowledge, no institutionalized continuity and no academic course of study. And more recently, the emphasis on faculty certifications based on academic credentials continues to interrupt the development of andragogy as a science and a series of teaching and learning assessment methods for adult learning.

This Study

Within academe, methods for assessing adult learning outcomes so as to actually enhance learning are already known, although it seems they are not widely practiced. But as discussed above, many educators are constrained by mandatory pedagogical learning assessment methods, circumstances and perceptions inherent in the distance learning environment, while others may simply be unaware of the reasons, methods or principles of andragogy. This study provides research within academe to determine faculty attitudes and ideas about assessment of adult distance learning in order to evaluate the following three-part hypothesis:

"A significant number of faculty members in higher education report not applying andragogical learning assessment methods for one or more of the following reasons:

(1) mandatory learning assessment methods,

(2) limitations of the distance learning environment, and

(3) Lack of understanding of andragogy as a defined theory and processes."

This is a question about faculty in higher education; the answer must also be found there.

A survey of faculty practices, attitudes and opinions was conducted to evaluate the above hypothesis, using a combined qualitative and quantitative research model. Data was obtained from a survey questionnaire administered to university faculty, grouped according to their teaching environments and correlated to evaluate the three elements of the above hypothesis.

Research Instrument

A 21-question survey questionnaire was pre-tested at a faculty meeting, revised and sent to faculty members of the Extended Campus of Embry-Riddle Aeronautical University. No distinction was made concerning full-time or adjunct status, sex, age, teaching experience or credentials. The questionnaire was attached to a short instructional E-mail message. It was sent through the Embry-Riddle E-mail system online, asking key personnel to forward the questionnaire to other faculty members. The full questionnaire is included as Attachment A of this paper. A subjective response scale was devised, using the terms "not really, a little, somewhat, very much and completely" rather than a scale showing only levels of agreement vs. disagreement.

Because of the distribution method used, it is not possible to determine how many faculty members actually received the instrument. Approximately 120 instruments were returned as instructed, a quantity sufficient for evaluation of the study hypothesis. A major percentage of the responses were from faculty who teach in distance learning as well as the classroom.

Data Analysis

The survey questionnaire responses were tabulated to obtain three levels of analysis: (1) direct compilation of all responses, (2) correlation of multiple responses, and (3) relevant comments provided by respondents. Statdisk, a basic academic statistical package was used to obtain statistical means along with response ratios and correlations.

Survey Results

Direct questionnaire responses were tabulated to indicate respondents' attitudes about specific question topics. For example, Survey Question 3 asked: "I believe there are significant differences between the principles & methods of teaching adults (andragogy) and those of teaching children (pedagogy)."

Responses to Question 3 revealed that ninety percent of respondents believed very much or completely that there are significant differences. Eight percent responded "somewhat," and only two percent said that there were little or no differences. A mean of 4.21 indicated very strong concurrence in this response.
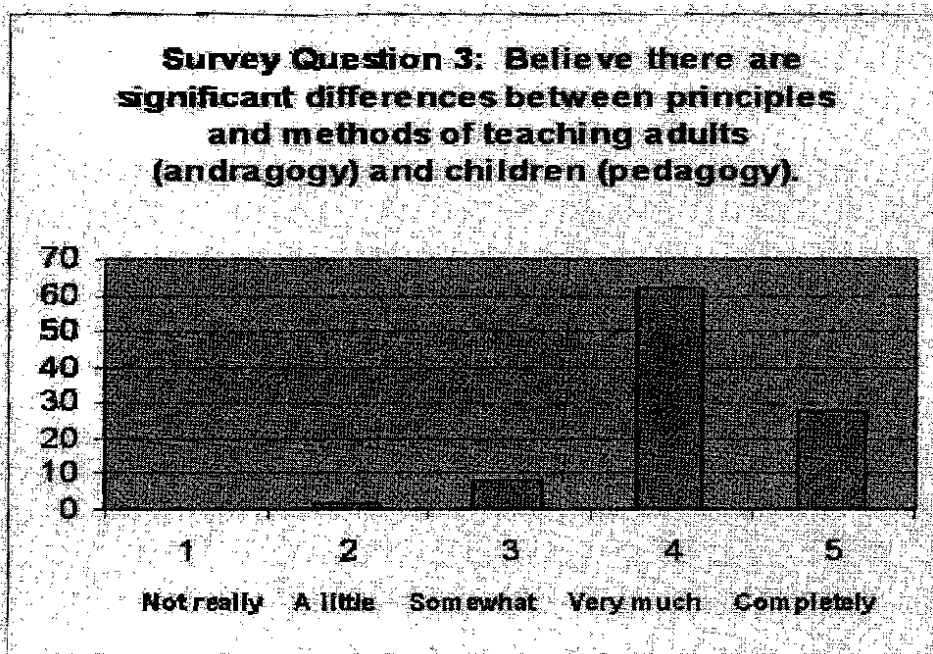

Figure 1. Survey Question 3.

Question 3 findings do not directly evaluate the study hypothesis, but they reveal that a large majority of respondents are fully knowledgeable when responding to other questions on the survey instrument concerning the differences cited as well

as what the survey questions were asking. This question was inserted "up front" to

ensure that responses to other questions were based on a clear understanding of

the terms, activities and conditions described therein, as well as to prepare the

respondents for the remainder of the survey.

Survey Question 4 asked respondents about their familiarity with the

differences between methods for measuring adult learning outcomes and those for

measuring children's learning outcomes.   Responses indicated a very mixed

response with a mean of 3.28, indicating that about the same percentage of

respondents are familiar with the cited differences as the percentage who are not
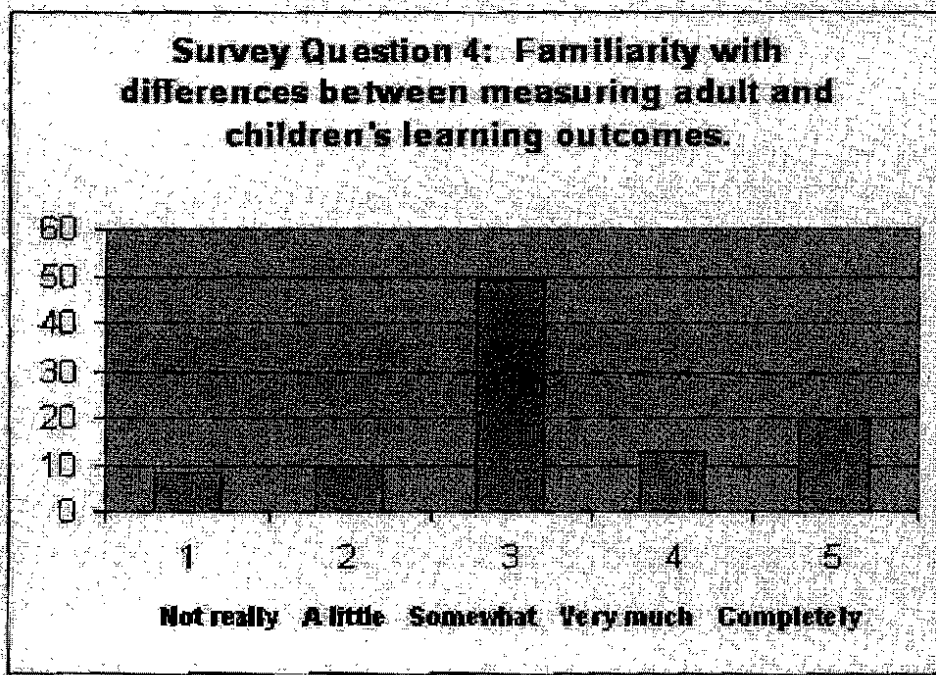

Figure 2. Survey Question 4.

very familiar. Individual responses to Survey Question 4 figure significantly into

correlations indicating the reasons faculty might continue to use traditional

pedagogic learning assessments in their adult distance learning courses.

Survey questions 5, 6, 7 and 8 assessed respondents' awareness of the individualistic aspects of adult education, including students' desire to learn something that betters their professional positions. These questions also assessed respondents' belief that adult students bring valuable knowledge to the learning experience, as well as their desire to be free to be self-directed in the educational process. These concepts were strongly supported by the responses to these four questions.

Responses to Survey Questions 9 and 10 added support for respondents' belief that it is equally important for teachers to encourage thought and discussion in the distance learning environment as it is in the classroom. Those providing strong agreement outnumbered those in disagreement by a ratio of 3.5 to one. It is evident from the graph of Question 10 data below that respondents believe andragogical
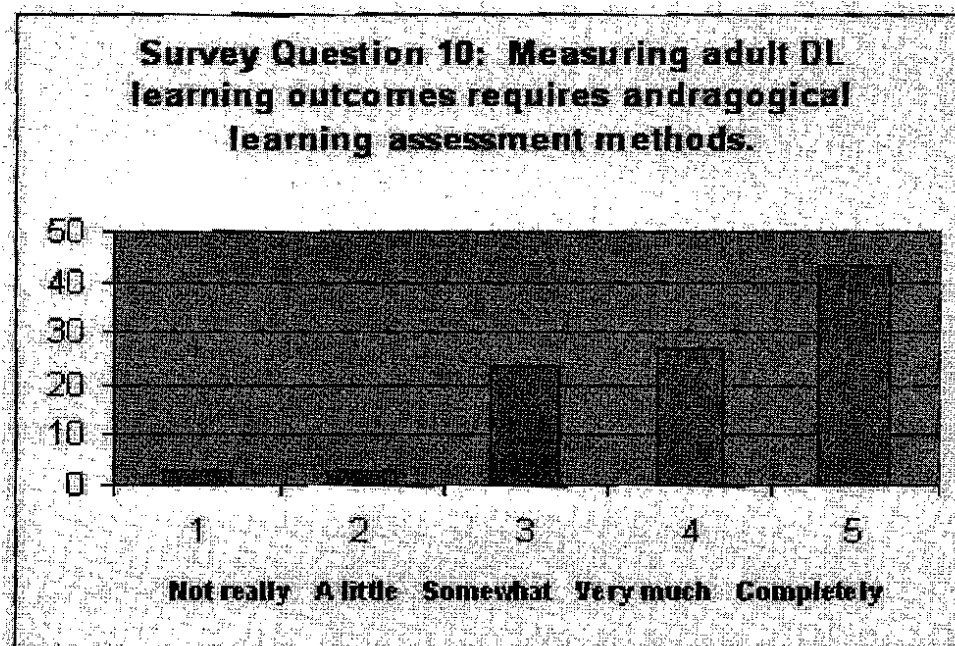

Figure 3. Survey Question 10.

14

teaching should include andragogical learning assessment methods.

Responses to Survey Questions 11, 12, 13 and 14 reveal a strong belief that traditional learning assessment methods (standardized exams, term papers and case studies) are less useful in the adult distance learning environment and tend to discourage exploration, discover and invention of knowledge.

Respondents' Learning Assessment Methods

All of the preceding results addressed respondents' attitudes and beliefs about Andragogical teaching and learning assessment methods. The subsequent questions (Survey Questions 15 through 21) ask respondents about their actual learning assessment methods in distance learning courses. In particular, the questions ask about whether respondents use traditional or andragogical
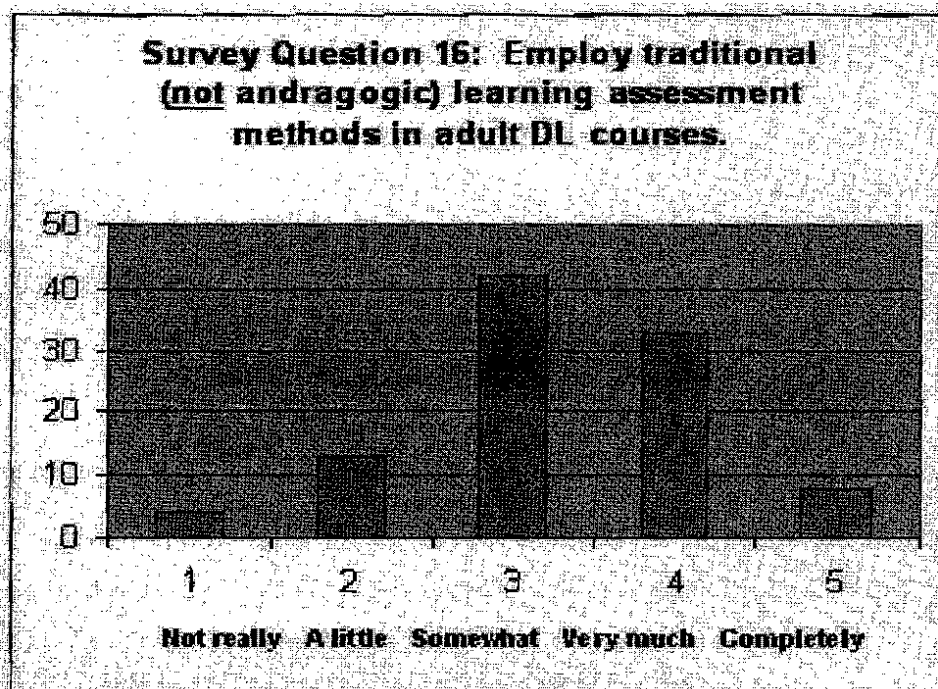
Figure 4. Survey Question 16.

assessment methods, and why they choose one or the other.

Survey Question 16 is a key question in this study. It states: "I employ traditional learning assessment methods in adult distance learning courses." A mean of 3.29 indicates that a somewhat higher number of respondents use traditional learning assessment methods, although the number of respondents responding "very much" or "completely" outnumbered those responding "not really" or "a little" by a factor of six to one. This response pattern provides a basis for examining correlations between this response and the each of the three hypothesized reasons for it.

Correlations

To evaluate the three-part hypothesis for this study, responses to Question 16 by distance learning faculty concerning the continued use of traditional (not andragogic) learning assessment methods were correlated with each respondent's answers to questions 18, 19 and 4. Specifically, the study sought to determine why
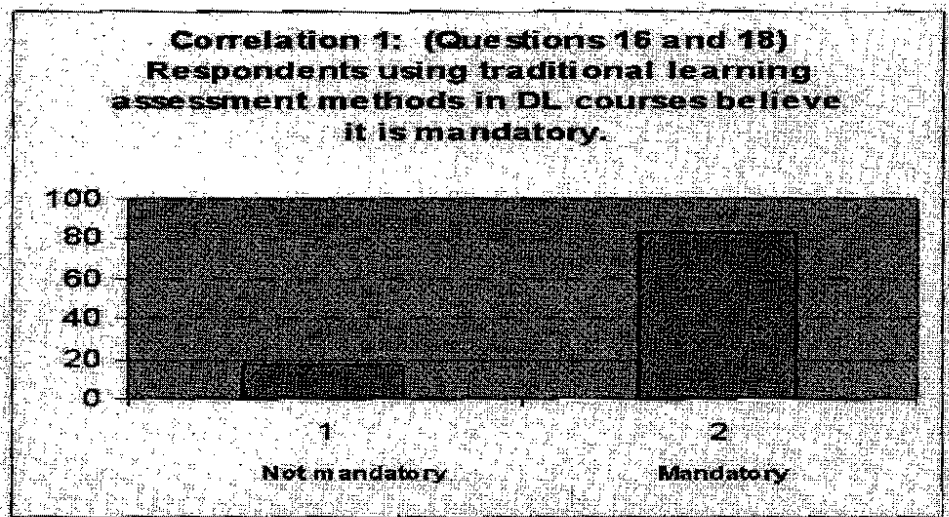

Figure 5. Correlation 1.

most respondents use traditional assessment methods in distance learning courses. In plain language, the correlations are intended to identify how likely each of the three hypothesized factors accounts for this usage.

Correlation 1 (Questions 16 and 18) indicates that respondents using traditional learning assessment methods in distance learning courses believe such use is mandatory by a factor of more than four to one.

Correlation 2 (Questions 16 and 19) indicates that respondents using traditional learning assessment methods in distance learning courses believe such use is required by limitations of the distance learning environment by a factor of more than two to one.
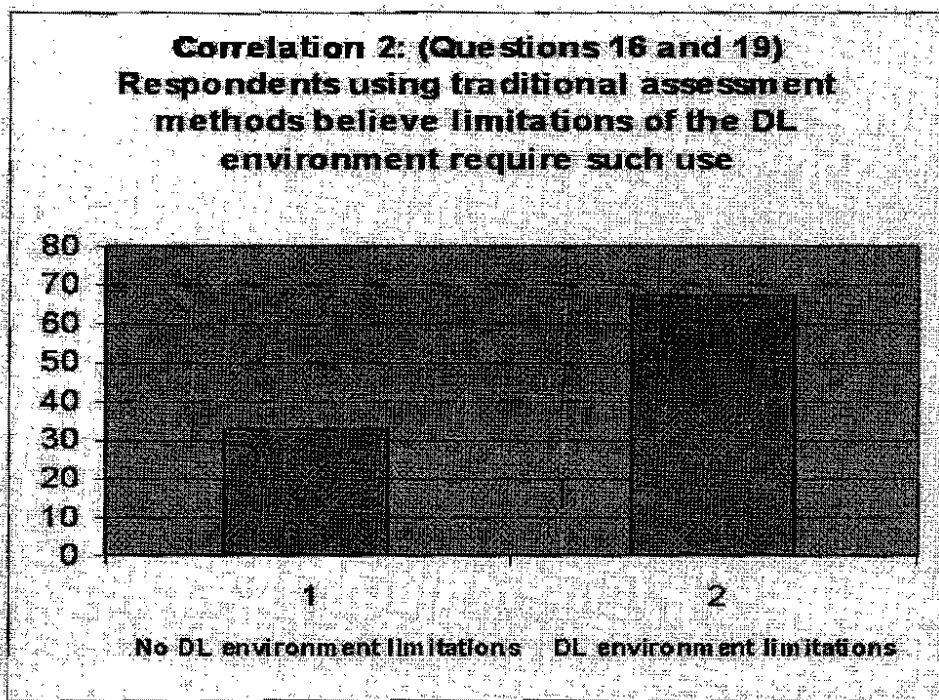

Figure 6. Correlation 2.

Correlation 3 (Questions 16 and 20) indicates that respondent using

traditional learning assessment methods in distance learning courses are familiar

with the differences between methods for measuring adult learning outcomes and

those for measuring children's learning outcomes by a factor or more than four to

one.

Correlations 1 and 2 support the hypothesis statistically; correlation 3 does

not support it. These correlations thus indicate that respondents who employ

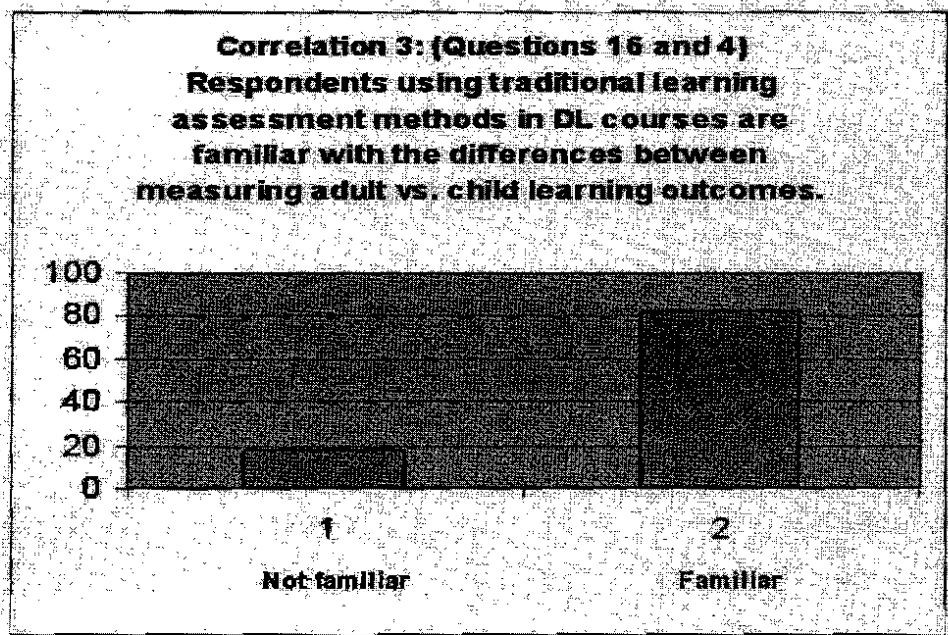mostly traditional learning assessment methods in distance learning courses (1) do

Figure 7. Correlation 3.

so most often because they believe such use is mandatory, and (2) to a lesser

extent because of limitations of the distance learning environment. However, (3)

lack of familiarity with adult learning outcome assessment methods was not shown

to be a factor in the use of traditional methods. Therefore, discussion of these

results will address specific practices used to measure learning outcomes in

18

distance learning courses.

Discussion

As shown in this study's survey results, responding faculty members reflected a consistent awareness of the significant differences between andragogical and pedagogical teaching principles and methods. They reflected their belief in the importance of actually using andragogical teaching and learning assessment methods in distance learning courses because of the individual professional needs and wants of students.

Faculty Attitudes and Beliefs

More importantly, respondents indicated overwhelmingly their belief that adult learning assessment must address understanding, discovery and invention of knowledge rather than just memorization of answers. However, respondents indicated often that traditional learning assessment methods (standardized exams, rigid term paper formats and canned case studies) discourage exploration and discovery in both classroom and distance learning courses.

Most importantly, respondents stated their strong belief that andragogical learning assessment methods actually encourage adult learning and enhance learning outcomes. This provides ample justification for having conducted this study, as well as support for respondents' concurrence that there are consistent perceptions about policies and practices that discourage andragogical learning assessment.

The vast majority of survey respondents reported that despite their belief in the need and value of andragogical learning assessment methods, they continue to

use traditional learning pedagogical learning assessment methods in their distance learning courses. The remaining task of this study, therefore, was to identify the most common reasons those who use traditional assessment methods continue to do so despite their beliefs to the contrary. Hence, the three-part hypothesis for the study, and the three correlations that evaluate it.

Correlations

The hypothesis stated that a significant number of faculty members report not applying andragogical learning assessment methods for one or more of the following reasons:

(1) mandatory learning assessment methods,

(2) limitations of the distance learning environment, and

(3) Lack of understanding of andragogy as a defined theory and processes.

The results of the research reveal that among distance learning teachers, the first two parts of the hypothesis are supported, but the third part is not supported. Thus, the research suggests that there are indeed polices and practices that faculty perceive as not permitting them or encouraging them to use more andragogical learning assessment methods that would enhance actual learning. Some insight was found in the qualitative comments provided by respondents at the end of the survey.

Respondents' Comments

About 10 percent of respondents offered specific comments about the general topic of traditional evaluation methods, including the following:

20

"I think the course monitors of the DL courses force the use of traditional evaluations."

"The inability to modify instructions in the DL courses can be very frustrating; . . . learning styles, use of a variety of assessment methods, etc. can not be considered."

" . . . often, the instructor did not develop the course and therefore, doesn't have the option to change the form of assessment."

"The issue is how you achieve lively interaction to stimulate those thoughts and assess them."

"I believe traditional classroom settings are much more effective than distance learning/online courses."

"There is a huge difference between those professors who have done nothing but teach and experienced professionals who teach for the benefit of other adults."

"Andragogical is an obscure term used only in educational classes."

"Grades that result from more traditional assessment activities have clear expectations and are easily defended."

"Assessment methods must have reliability and validity in formal or informal litigation situations. This reduces the capability to use andragogical assessment methods."

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Researcher's Comment

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Virtually all of the respondents' comments substantially support the findings of this study. However, the last one above offers something not initially considered: that traditional learning assessment methods (and grades) are more easily defended when challenged by students, either informally or in court! This suggests that

perhaps there are still other reasons faculty adhere to easy-to-define exam questions and simple traditional grading processes. Fear, it seems, may be a major factor in faculty attitudes about learning assessment methods and policies. But this will have to be the topic for another study.

Conclusions and Recommendations

This study provides sufficient support for a review of current policies that affect adult learning assessment policies and methods. Principally, these suggest that teachers are not at liberty to change learning assessment methods, even when they believe strongly that more andragogical methods would enhance actual learning outcomes. The study discloses policies that are mandatory such as written or electronic examinations and quizzes that are easy to grade and easy to defend, but do not fairly and accurately solicit evidence of student understanding of complex course topic areas.

Likewise, written and online term papers with rigid format rules discourage exploration and discovery, and tend to lead students to fill formats rather than ask and evaluate questions. The overall study concludes that when students know they are not measured as adult learners, they will not learn as adults. It is therefore recommended that colleges expand the study of andragogical teaching and learning assessment methods, with the aim of identifying those policies and methods that discourage adult learning, and modifying or replacing them with policies and methods that bring about more realistic learning and better achievement of the real goal of higher education: preparing people for life.

REFERENCES

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

Krajinc, A. (1989) "Androgogy." *Lifelong education for adults: an international handbook* (Ed. C. J. Titmus). Oxford: Pergamon, p. 19-21.

Pratt, D., & Associates. (1988). *Five perspectives on teaching in adult and higher education.* Malabar, FL: Krieger.

Zemke, R. (2001, June) Learning as conversation. *Training,* 6, 14.

SURVEY QUESTIONNAIRE

EDUCATION RESEARCH SURVEY 2005EC
August 2005

Dear college faculty member:

The following questionnaire solicits faculty opinions and attitudes about current academic issues. The results will be used to help design future academic programs and learning assessment measurements. Your responses will provide valuable data for this research.
Do not put your name on the survey. **Please respond by August 15, 2005.** Thanks.
Returning this survey: If you received this survey electronically, please **underline** your responses and return it as an attachment to an e-mail message to:

Research2005EC@aol.com

Instructions: Please circle or underline the response for each question that best describes your own personal situation, attitude or opinion. Skip any questions that do not apply to you.

1. I teach: (1) Graduate courses (2) Undergraduate courses (3) Both

2. I teach: (1) In the classroom (2) In distance learning (online) (3) Both

3. I believe there are significant differences between the principles & methods of **teaching** adults (andragogy) and those of **teaching** children (pedagogy).
(1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

4. I am familiar with the differences between methods for **measuring** adult learning outcomes and those for **measuring** children's learning outcomes.
(1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

5. I believe adult learners want to learn something they can use to better their position, as a means to an end, and not knowledge for its own sake.
(1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

6. I believe adult learners bring valuable information and experiences to the learning situation.
(1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

7. I believe adult learners want to be free to be self-directed in the education process.

(1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

8. I believe adult learners in the distance learning environment tend to be even more self-directed and autonomous than in the classroom environment.
   (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

9. I believe that it is just as important for teachers to encourage thought and discussion in the adult distance learning environment as it is in the traditional classroom.
   (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

10. I believe that measuring adult learning outcomes in the distance learning environment should employ andragogical learning assessment methods.
    (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

11. I believe andragogical learning assessment methods, if used in the conduct of classroom courses, actually encourage adult learning and enhance learning outcomes.
    (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

12. I believe andragogical learning assessment methods, if used in the conduct of distance learning courses, actually encourage adult learning and enhance learning outcomes.
    (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

13. I believe traditional learning assessment methods (standardized exams, term papers, canned case studies and observed participation) are less useful in measuring learning outcomes in the distance learning environment than in the classroom.
    (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

14. I believe mandatory use of traditional learning assessment methods discourages exploration, discovery and invention of knowledge in classroom and distance learning classes.
    (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

15. I employ traditional learning assessment methods in adult classroom courses.
    (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

16. I employ traditional learning assessment methods in adult distance learning courses.
    (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

17. The learning assessment methods I use in my classroom courses are mandatory.
    (1) Not really (2) A little (3) Somewhat (4) Very much (5) Completely

18. The learning assessment methods I use in my distance learning courses are mandatory.
    (1) Not really   (2) A little   (3) Somewhat   (4) Very much   (5) Completely

19. The limitations of the distance learning environment require the use of traditional learning assessment methods rather than andragogical assessment methods.
    (1) Not really   (2) A little   (3) Somewhat   (4) Very much   (5) Completely

20. I find traditional teaching and learning assessment methods easier to understand and employ than andragogical assessment methods.
    (1) Not really   (2) A little   (3) Somewhat   (4) Very much   (5) Completely

21. I find my students capable of handling adult learning workload and assessments.
    (1) Not really   (2) A little   (3) Somewhat   (4) Very much   (5) Completely

Please take a few moments to comment below on the above topic:

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Thanks again for your help!
Dr. Mel Anderson