Teaching Philosophy

The Adult Learner, Instructional Design, CAD and E-Learning

To: Kankakee Community College

By: John R. Bordeau
Table of Contents

1.0 Overview

2.0 Roots of Andragogy
   The History
   The Definition
   The Knowles Theory of Andragogy

   The Roots of Pedagogy
   The History
   The Definition

   The Differences Between Andragogy and Pedagogy
   Andragogy: Designed for Adults, Pedagogy: Designed for Children

3.0 Adult Learner, Instructional Design, CAD and E-Learning
   Adult Learner Research Profile
   Instructional Design Research Profile
   E-Learning Research Profile
   Relevant Findings

4.0 References
1.0 OVERVIEW
These are my preferred methods of instruction.

Teaching Methodology
Andragogy, Malcolm S. Knowles 1975 – 1984

Instructional Objectives
R.F. Mager, ABCD model for instructional objectives - 1962

Instructional Design
Robert M. Gagné - Nine Events of Instruction - 1970s

Preferred Method of Learning Styles
Visual, Aural, Reading/Writing, Kinesthetic (VARK)

Preferred Delivery Method of Instruction
E-Learning

ROOTS OF ANDRAGOGY
The History
The term is first used in 1833 by a German grammar school teacher Alexander Kapp. The term was forgotten for eighty eight years. The use of the term surfaced again by a German social scientist Eugen Rosenstock in 1921. He felt that adult education required the use of special teachers, methods and philosophy. Thirty years later the term was used by a Swiss psychiatrist, Heinrich Hanselmann, in a book named Andragogy: Nature, Possibilities and Boundaries of Adult Education. In the late 1950’s, many Europeans began using the term. The University of Amsterdam has had a Doctorate for Andragogues since 1966. In the United States, the theory of andragogy became popular in the 1970’s and 1980’s thru the work of Godbey, Knowles, Ingalls and Arceri. Their concentration of the application of the theory was mainly with social work, religious, undergraduate, graduate education and management training. In 1984, Knowles' Andragogy in Action contained case descriptions for elementary, secondary, and collegiate education.
The Definition

Andragogy (and-rè-go’jè) is the art and science of helping adults learn. (Knowles, 1970)

THE THEORIES OF ANDRAGOGY

Knowles

The andragogical model was developed by Malcolm S. Knowles. This model is based on six assumptions. Assumptions numbers 2-5 were presented originally in 1980, 1978, and 1975. The assumption number 6 was added in 1984. The first assumption was added in 1989-1990.

The assumptions are:

1. The need to known. Adults need to know the reason why they need to learn any material. They will expend a great deal of effort to determine if they need to learn the material or if learning the material is greater than the negative consequences of learning.

2. The learners self concept. Adults are responsible for their own lives. They feel capable of self-direction. They despise others when others force their will upon them. When forced into a learning situation, they sit back and force other to “teach them”.

3. The role of the learners’ experiences. The adult learner brings a vast amount of experiences with them. The diverse experience of all the adult learners in a learning environment provides a rich resource from which participants can utilize. Techniques such as group discussions, problem-solving exercises, simulation exercises can enhance the learning experience for adults. The emphasis is to be placed peer to peer exercises.

4. Readiness to learn. Adults will become ready to learn when they ready to cope with real life situations. The timing of the learning is important to the learning process. The adult learner must ready to proceed to the next development task. For example: an adult will not be willing to learn supervisory skills until they have mastered the basic skills which they would be supervising.

5. Orientation to learning. The adult learner the learning to be life-centered. Children are taught subject-centered in school. The adult wants the learning to confront the problems of everyday life. The materials used should match the adult learners need for task-centered or problem-centered of the learner’s life.

6. Motivation. Adults respond to internal pressures more then external pressures. They are motivated by job satisfaction, self-esteem and quality of life more then better jobs, higher salaries and promotions.
THE ROOTS OF PEDAGOGY

The History
Pedagogy has its start between the seventh and twelfth centuries. The monastic and cathedral schools of Europe used this model of teaching young boys basic skills of beliefs, faith and rituals of the church. The Calvinists believed wisdom was evil. They felt direct control by an adult and limiting children's learning helped keep them innocent. Secular schools and public schools formed in the later centuries. They were aware of this one teaching model. They used it for higher education as well as secondary education.

The Definition
The term is derived from Greek words paid, which means "child" and the word agogus which means "leader of." Pedagogy, (pèd-e-go’jê), means the art of and science of teaching methods, including the aims of education and the ways in which such goals may be achieved. The field relies heavily on educational psychology, or theories about the way in which learning takes place.

THE DIFFERENCES BETWEEN ANDRAGOGY AND PEDAGOGY

Andragogy: Designed for Adults, Pedagogy: Designed for Children

Assumptions

<table>
<thead>
<tr>
<th>Concept of the learner</th>
<th>Pedagogical</th>
<th>Andragogical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of learner's experience</td>
<td>To be built on more than used as a resource</td>
<td>Uniform by age-level &amp; curriculum</td>
</tr>
<tr>
<td>Readiness to learn</td>
<td></td>
<td>A rich resource for learning by self and others</td>
</tr>
<tr>
<td>Orientation to learning</td>
<td>Subject-centered</td>
<td>Task- or problem-centered</td>
</tr>
<tr>
<td>Motivation</td>
<td>By external rewards and punishment</td>
<td>By internal incentives curiosity</td>
</tr>
</tbody>
</table>


The core concept of andragogy applies to all adult learning situations. The concepts and theories of pedagogy apply to most of the children’s learning situations. Adults don’t response well to the methods of pedagogy. Adults need a facilitator of learning, not a teacher of content. However, children need a teacher of content. Children, in general, don’t respond well to the methods of andragogy.
The Historical Example

A good example in history is Albert Einstein. He first had the idea for his theory of relativity, when he was a teenager. He was flunking math, and being counseled by his family to take up a career as a plumber so that he wouldn’t be a financial burden on them. During this difficult period in his life, Einstein reported he had a particularly riveting and memorable dream: "'In his dream, he was sledding with his friends at night. They would climb the hill, whisk down the snowy slope, then climb to the top again to repeat the pleasurable slide. At one point, Einstein climbed the hill and started to slide down once again, only this time, he became aware that his sled was traveling faster and faster [which is the basic thought for his demonstration of the] principle of "relativity"…'” Obviously, the Pedagogy model did not work for teaching Albert Einstein math. It seems he was an adult learner as a teenager.

6.0 ADULT LEARNER, INSTRUCTIONAL DESIGN, CAD AND E-LEARNING

A research of literature related to the relationship between adult learners, instructional design, e-learning of an AutoCAD training program offered a number of observations, issues, theories, and potential solutions across this spectrum.

The literature identified some observations and key issues that address the relationship between adult learner, instructional design, E-Learning of an AutoCAD training program.

Knowles (1998), Brookfield (1990), Kidd (1973), and Merriam and Caffarella (1991) provide characteristics of adult learners are that they:

- Have real-life experiences
- Prefer problem-centered learning
- Are continuous learners
- Have varied learning styles
- Have responsibilities beyond the training situation
- Expect learning to be meaningful
• Prefer to manage their own learning

There is a significant body of research on adult learning and findings related to what works best when teaching in the workplace. While much of this literature predates the web, the findings are worth considering because the web technology has simply altered the delivery medium (Driscoll, 2002).

There are a few of theories and solutions proposed to address the relationship between adult learners, instructional design, E-Learning of an AutoCAD training program.

According to Costello, “The overall program should offer e-seminars, job techniques and tips, practical examples, interactive exercises, and should be completely customizable, enabling the design engineers to tailor their learning environment and curriculum to their specific needs” (Costello, 2003, ¶4).

Games are the only way to teach online because the today's youngsters seem to be excited by games (Prensky, 2002). Costello (2003) noted. Think3 computer aided design software uses a fun approach to e-Learning. Their interface is designed like a video game to engage and motivate learners. Simulations are the best way to teach online and all learning should be interactive and engaging (Aldrich, 2003).

Relevant Research

Adult Learner Research Profile

Knowles’ work (most notably the book Self-Directed Learning: A Guide for Learners and Teachers, published in 1975) has been controversial. To some, his proposed system states the obvious. To others, he has merely proposed an adaptation of existing child-learning theories.

Source: http://en.wikipedia.org/wiki/Andragogy


**Instructional Design Research Profile**

Influential researchers and theorists of Instructional Design are:

- B.F. Skinner - Behaviorism - 1940s
- Benjamin Bloom - Taxonomies of the cognitive, affective, and psychomotor domains - 1955
- R.F. Mager - ABCD model for instructional objectives - 1962
- Jean Piaget - Cognitive development - 1960s
- Seymour Papert - LOGO - 1970s
- Robert M. Gagné - Nine Events of Instruction - 1970s
- Jerome Bruner - Constructivism
- M. David Merrill and Charles Reigeluth - Elaboration Theory / Component Display Theory / PEAnets - 1980s
- Robert Heinich, Michael Molenda, James Russell - Educational Technology - 1989
- Roger Schank - Constructivist simulations - 1990s
- David Jonassen - Cognitivist problem-solving strategies - 1990s

Source: http://en.wikipedia.org/wiki/Instructional_design

**Learning Styles**

This approach to learning emphasizes the fact that individuals perceive and process information in very different ways. The learning styles theory implies that how much individuals learn has more to do with whether the educational experience is geared toward their particular style of learning than whether or not they are "smart."

Source: http://www.funderstanding.com/learning_styles.cfm

The following instruments represent 14 major approaches to learning styles.
• Allinson and Hayes’ Cognitive Styles Index
• Apter’s Motivational Style Profile
• Dunn and Dunn model and instruments of learning styles
• Entwistle’s Approaches and Study Skills Inventory for Students
• Gregorc’s Mind Styles Model and Style Delineator
• Herrmann’s Brain Dominance Instrument
• Honey and Mumford’s Learning Styles Questionnaire
• Jackson’s Learning Styles Profiler
• Kolb’s Learning Style Inventory
• Myers Briggs Type Indicator
• Riding’s Cognitive Styles Analysis
• Sternberg’s Thinking Styles Inventory
• Vermunt’s Inventory of Learning Styles
• Visual, Aural, Kinesthetic (VAK and VARK)
  - Although the theorists may disagree on the vocabulary to describe the
    four basic types of learning style, the following are representative
    categories:
    ✔ visual (learn by seeing)
    ✔ verbal/auditory (learn by hearing)
    ✔ reading/writing (learn by processing text) (This category is not
      always listed.)
    ✔ kinesthetic or practical (learn by doing).

Next to these 14 instruments, at least 58 other instruments have been developed.

E-Learning Research Profile
1. E-Learning is a 23 billion dollar industry (Driscoll, 2002).
2. Thirteen percent of all courses are delivered by computer (Training magazine’s Annual Industry Report). (Driscoll, 2002).

3. Most organizations initially justify Web-based training based on simple cost reductions or cost avoidance rationale (Driscoll, 2002).

4. Web-based training is simply a delivery methodology.

5. Learning times are reduced an average of 40 to 60 percent, as found by (Hall, 1997, ¶108).

6. Increased retention of information and its application to the job averages an increase of 25 percent over traditional methods, according to an independent study by (Fletcher, 1991, ¶33-42).

Relevant Findings

The major findings derived from the review of literature to support conclusions of the project are:

1. There is limited literature discussion or study of e-Learning with CAD programs.

2. Advocates of the scientific approach also note that the following the instructional systems design process results in more effective instruction (Clark & Mayer, 2002).

3. Surveys of instructional design practice conducted through the years suggest that few instructional designers perform more than a cursory needs assessment (Guerra, 2003; Weman & Tessmer, 1993; Zemke & Lee, 1987).

4. Research suggests that only a limited amount of evaluation actually occurs (Van Buren & Erskine, 2002, reported in Authur, Bennett, Edens & Bell, 2003).

5. The effectiveness of e-Learning compared to the classroom: The research suggests that e-Learning is merely as effective as classroom-based learning – no more, no less. These comparison studies also assume that the material in both formats has been professionally designed (Russell, ongoing); McDonald and Bartlett (2000).

6. Most of the science of multi-media is based on research with United States based college students. Most of these students are in their late teens and early twenties and have not held full-time professional employment (Clark & Mayer, 2002).

7. Five leading theories of learning include:
   - Liberal adult education
• Progressive adult education
• Behaviorism
• Humanistic adult education
• Radical adult education

(Elias J. & Merriam S., 1980)

8. Four schools of theory in learning include:

• Behaviorism
• Cognitivism
• Constructivism
• Human performance improvement

9. Most instructional designers employ a combination of philosophies and theories in their work.

10. For the past five years, training directors have reported that e-Learning is at least moderately successful in meeting their needs (Carlner, Groshens, Chapmen, & Gery, 2004)

11. E-Learning has shown success in contexts such as certification and training on information technology. (Barron 2002).

12. The limitations of learning styles: Although learning styles are a popular theory, few studies show that learning styles really contribute to actual learning achievement (Sugrue, 2004). So addressing them in the design of courses is a time-consuming effort that pays few dividends.

13. That 83 percent of all learning occurs visually (Stolovitch, 2004).

7.0 REFERENCES


http://agelesslearner.com/intros/andragogy.html

http://agelesslearner.com/intros/adultlearning.html

www.wavetech.com/abt/abttmwp.htm


Online Journal of Distance Learning Administration, Volume IV, Number III, Fall 2001
State University of West Georgia, Distance Education Center

*Performance Improvement Quarterly*, 16(1), 55-72.


Miller, Rev. Joel, Dreams and Dreaming, 2001  


Russell, T. (Ongoing publication). *No significant difference website*.  
www.nosignificantdifference.org.


