

## **Back to Basics: Using Adult Learning Principles to Create E-Learning Success**

Steven R. Aragon  
Human Resource Education  
University of Illinois at Urbana-Champaign, USA  
[aragon@uiuc.edu](mailto:aragon@uiuc.edu)

**Abstract:** While online instructional is gaining popularity, many educators and trainers are not advocates of online instruction because of the belief it can actually solve difficult teaching and learning problems. However, with the recent and continued advancements in technology, designers of education and training programs no longer need to be at the mercy of what is available or its cost. The learner can now be put back at the center of learning and now be the unit around which education and training programs are designed. Therefore, the question to be asked is what does an online program look like that puts the learner back at the center of learning? This paper will review some basic principles of adult learning and show how they were incorporated into the design of a successful Masters of Education (M.Ed.) online program in a large mid-western university.

### **Introduction**

Whether learning takes place in an institution of higher education or in a private, public, or non-profit organization, participants are expected to learn and subsequently apply their new knowledge. During recent years, innovations in higher education have served as a catalyst for changing relationships among students and teachers (Dziuban & Dziuban, 1997). New advances in Internet-based technology have brought challenges and opportunities to education and training, in particular through online instruction. Online instruction is a form of distance education delivered over the Internet. For many, this type of instruction is perceived as a major breakthrough in teaching and learning because it facilitates the exchange of information and expertise while providing opportunities for learners in distant or disadvantaged locations (Webster & Hackey, 1997).

While online instruction is gaining popularity, it is not free from criticism. Many educators and trainers are not advocates of online instruction because they do not believe it actually solves difficult teaching and learning problems (Conlon, 1997) while others are concerned about the many barriers that hinder effective online teaching and learning. These concerns include the changing nature of technology, the complexity of networked systems, the lack of stability in online learning environments, and the limited understanding of how much students and instructors need to know to successfully participate (Brandt, 1996). For others, online instruction also threatens to commercialize education, isolate students and faculty, and may reduce standards or even devalue university degrees (Gallick, 1998).

Advocates of Internet-based education are largely positive and optimistic (Relan & Gillani, 1997) about its potential. But before it can be fully accepted by the mainstream public and educational community, many challenges must be addressed (Hill, 1997). Primary among these challenges is how to meet the expectations and needs of both the instructor and the student and how to design online courses so they provide a satisfying and effective learning environment. From program developer and instructor perspectives, understanding these issues is critical for the development and implementation of quality online instruction.

## **Purpose**

The purpose of this paper is to illustrate how one large mid-western university was able to successfully create and implement an online Masters of Education (M.Ed.) degree program around theoretically based principles of adult learning. By placing learners back at the center of learning, this online program has seen success in terms of retention; equal academic performance when compared to the on-campus program; and no significant correlations between learning style preferences and delivery format.

## **Beyond K-12 Education**

### Human Resource Education: A Description

While the focus of most education programs is on K-12 teacher education, human resource education (HRE) is focused on the training, education, and development of individuals who desire to focus their education and skills in public and private organizations; military; government; and community colleges. Graduates of HRE programs will focus on training and development; program evaluation; and/or organizational development and change to name a few. Most programs of HRE have evolved out of adult vocational education recognizing that learning is lifelong, not simply just skill-based, and does not end at the completion of high school. In addition, HRE recognizes the continuous changing needs of today's workforce and organizations and prepares the individuals that will be able to meet these challenges.

The HRE Department described as the unit of analysis in this paper has followed the evolution process as described above. Students enrolled in this graduate program focus in one of two areas: human resource development or community college leadership. The curriculum includes courses in the areas of instructional design; instructional technologies and methods; program evaluation; organizational development and strategic planning; and the history of field. The coursework is tailored and applied within the context of the student's focus area.

### Program Description

The M.Ed. degree consists of 8 units (32 credit hours) of coursework. Both the campus and online versions of the degree require 2 units of educational foundations. For the campus program, students are able to select the remaining 6 units based on their interests and future goals. These courses are selected in conjunction with advisor approval. For those students enrolled in the online program, the coursework is pre-selected and all students move through the curriculum in a cohort model completing courses on the same schedule. The additional 6 units consist of instructional technologies, instructional design, HRE foundations, program evaluation, strategic planning, and organizational development. All courses in the program were originally campus versions and later placed online with the same requirements and standards. Although the online students do not have flexibility in being able to choose their own courses, the program of studies between the two student groups (campus and online) look very similar upon completion of the M.Ed. degree.

It is important to note that the policies and standards are the same for both the campus and online programs in terms of GPA, fit of goals with the Department, and letters of support. It is also important to mention that the requirements and standards for both the campus and online versions of each course are the same as well. It has been important for the Department to ensure that HRE Online is not viewed as a "watered-down" or simplistic version of the campus program.

## Students

Students who enroll in the HRE Department are those seeking a career in training and development, program evaluation, and/or organizational development and change. While students in the campus program may already be working in the field and seeking the M.Ed. for advancement, all of the online students are currently working in the field. They too seek the M.Ed. for advancement but due to work constraints or geographical location are unable to enroll in a traditional campus program. Consequently, the online option allows them the freedom and flexibility to complete a graduate degree without attending courses on campus but still having the same academic rigor in a program. As Johnson, Aragon, Shaik, and Palma-Rivas (2000) have found in the evaluation of the campus and online programs, the demographics of the two types of students are not significantly different.

### **Principles of Adult Learning Theory**

In their comprehensive review of adult learning theory, learning theorists (i.e., Merriam & Caffarella, 1999) have identified principles that have been consistently found to describe what contributes to learning successful for adults engaged in education, training, and development programs and activities. While there still may be some debate over the terminology or the importance on the role of a particular principle in the learning process, overall common agreement still exists on the nature of each principle. These are briefly described in this section to provide the theoretical framework around which HRE Online was developed. The application of these principles to the online program will be discussed in the following section.

***Learning is a Process.*** This principle reminds us that learning is an active and continuous process. There is a proper sequence in which to present information so that maximum learning takes place. Learning occurs or takes place by changes in behavior and demonstrated through the growth of knowledge. Individuals will learn even when the instructor is doing a poor job. This principle also reminds us that instructors should repeatedly check that participants are learning through the use of various performance measurements.

***Styles and Rate of Learning Vary.*** Learning styles and rate vary from one individual to the next. For example, some individuals learn better by reading than they do by listening; some learn faster than others (even among those who learn best using the same style). It is not uncommon to have learners of five or six types in a single setting. It is the instructor's job to determine the individuals' different learning styles and develop teaching strategies and activities that will best help them realize their potential.

***Readiness.*** Individuals learn dependent upon their readiness to do so, their emotional state, their abilities, and their potential. This principle is commonly referred to as motivation. It includes, probably most importantly, the desire to learn. The instructor's job is to spark a desire to learn or to enhance an existing desire. This is done by emphasizing the meaningfulness of the subject, exhibiting a sincere enthusiasm for the subject, and by providing the incentive to learn.

***Life Experiences.*** This principle reminds us that learning is influenced by the life experiences of the learner. Imagine trying to teach someone how to tie different knots by referring to tying one's shoelace. If the learner had never tied a shoelace the reference would be useless. Most instructors will not encounter such extremes, but the point is that we should have some knowledge of the individuals' backgrounds and past experiences. Helping learners to recognize the similarities and differences between past experiences and present situations will smooth the transfer of learning from one situation to the next.

In addition, relating what is being learned to what is already known will make the knowledge more personal or relevant to the individual.

**Application.** This principle tells us that learning is more effective when there is immediate application of what is being taught. Learners should be actively involved in terms of thinking, writing, discussion, or problem-solving as soon as possible after information is presented. No lesson is complete without application of learned material. Whenever appropriate, the instructor should plan “doing” activities such as practical exercises, demonstrations, case studies, or group discussions. The application of knowledge facilitates both the retention of a skill or knowledge and its reinforcement.

**Knowledge of Progress.** Another principle is that learning is facilitated when the learners have knowledge of their progress toward a goal. Application of this principle serves two important functions: (1) it prevents learners from running down blind alleys, and (2) what they have learned is reinforced by knowledge of success. Another related principle of learning is that learning is influenced by the learner’s perception of themselves and the situation they are in. Everything the instructor can do to help the individuals succeed will enhance their self-image and make them more comfortable in learning. Each positive experience builds on the last creating an ever expanding universe.

**Repetition.** The adage “practice makes perfect” conveys the main idea behind the principle of repetition. In order for learning to take place, the instructor should provide a sufficient number of exposures to the subject material. Each point made during a class should be summarized before proceeding to the next. Learners should be allowed multiple opportunities to practice their newly learned skills. A concept that is important enough to teach is also important for the learners to practice in order to master it.

### Overview of HRE Online

As noted previously, technology rather than learning has historically driven the design of distance education regardless of the format. This has been due to the high-costs associated with the equipment and software needed to design such programs. However, with the reduction in costs associated with much of today’s technology, this has allowed increased access to programs, products, and services in ways that were not previously possible. This section describes how HRE Online has exclusively used the services of the Internet as the delivery mechanism but allowed learning to drive the design of the courses that comprise the M.Ed. program. To set the context for this discussion, a brief overview of the course format is provided.

Each course in the program sequence is designed using the same format. A course begins with the development of a detailed storyboard, which outlines the content of the course from beginning to end. Typically, this storyboard is developed from the course syllabus of the campus version. This process allows the online design team and faculty member to identify the major sections, modules, and learning cycles of a course. In this way, the principle of “chunking” has been applied by identifying what content fits together logically and clearly. A portion of what a storyboard might look like from a course on adult learning is presented in Figure 1.

---

## Section 1: Theories of Learning

### Module 1: Behaviorist Perspective

Learning Cycle 1: Definitions of Learning

Learning Cycle 2: Purpose of Education

Learning Cycle 3: Learning Theorists

### Module 2: Cognitive Perspective

Learning Cycle 1: Definitions of Learning

Learning Cycle 2: Purpose of Education

Learning Cycle 3: Learning Theorists

### Module 3: Social Perspective

Learning Cycle 1: Definitions of Learning

Learning Cycle 2: Purpose of Education

Learning Cycle 3: Learning Theorists

### Module 4: Humanistic Perspective

Learning Cycle 1: Definitions of Learning

Learning Cycle 2: Purpose of Education

Learning Cycle 3: Learning Theorists

## Section 2: Characteristics of Adults Learners

### Module 1: Why adults participate in education.

Learning Cycle 1: Houle's Typology of Learners

Learning Cycle 2: Morstain and Smart's Learner Profiles

### Module 2: Characteristics of Adult Learners

Learning Cycle 1: Current demographics and trends in adult learners

Learning Cycle 2: Principles of adult learning

---

Figure 1: Sample Storyboard

Within the typical semester course, there are usually five major sections of information. The number of modules and learning cycles is dependent on the amount and type of information needed to fully address a particular section of the course. The storyboard process has been helpful to faculty in that it has revealed areas of the course that have too much emphasis or not enough in order to have a well-balanced course. In fact, converting a campus course over to the online version has actually contributed to the formative improvement of the campus course

The actual content of the course is delivered at the learning cycle level through streamed audio/video lectures, WebBoard discussion groups, and online content (web pages, web links). Students "meet" once a week for a 1-hour synchronous chat session where the previous week's content is discussed. These chat sessions are conducted using one-way audio and two-way text. Students are also allowed to phone in to the chat via a toll-free number. Throughout the week, students communicate with the faculty member, teaching assistant, and their peers through WebBoard, e-mail, and other customized databases.

It should be noted that, while not reflected in the sample storyboard, there are built-in application activities that promote the learning of the content. An activity may be incorporated at the learning cycle, module, and/or section level. These activities are like those that would be found in the campus course. Faculty are encouraged to have activities at the module level as a general rule of thumb. This will be discussed in more depth shortly.

## Applying the Principles of Learning to Online Program Development

The focus of this section is to illustrate how HRE Online has incorporated the previously discussed principles of adult learning into an international M.Ed. Internet degree program.

***Learning is Process.*** In designing the template for the courses as well as the content, the HRE Department incorporated a process that would help in properly sequencing the content of a course so that the courses would build on a logical organizational format. The format adopted was the “low level to high level” model, which says to present the low level information first and build upward. Through the use of the storyboard courses have been logically sequenced in which learners build on previous content. In addition, the courses in the M.Ed. sequence have been ordered using the same principle so as to ensure that students receive knowledge, skills, and abilities from one course that will be useful to them in the next course. As previously noted, a component of this learning principle is to assess knowledge frequently to performance measurements. Faculty are highly encouraged to develop learning activities for each module of a particular section as a minimal rule. Depending on the amount and detail of information presented in a learning cycle, an activity may follow at this level as well. Learning activities found at the section level tend to be activities that help the student synthesize all of the information presented in that section. Typically a section activity produces work that would then go into a final course project.

***Styles and Rates of Learning Vary.*** This principle has probably been incorporated into the design template more than any other. Recognizing the fact that all learners do not learn in the same way nor at the same rate, the course template has utilized many design elements that allow students to be successful regardless of learning style.

First, All courses provide various means of navigation within the course site. Content can be accessed through multiple links. In individual can be as systematic in his or her access of course material or random as they desire. Although a course is built and presented in a hierarchical sequence as displayed in the sample storyboard (see Figure 1), it does not have to be accessed in the same way. While it is not necessary encouraged, students are also not discouraged from moving around the content in a random order.

Second, all course content is presented in multiple forms. Lectures are audio streamed with the applicable PowerPoint presentation. These lectures are additionally transcribed and posted in the course materials. This has been found quite beneficial for students who travel and would like to take the transcribed lecture to read. However, other students print and read the lectures as review. Lectures tend not to be any longer than 15 minutes. Content is also presented through WebBoard discussion groups in which students are required to share and discuss information with each other. Each course will also have web pages and links to outside web sites that will provide supplemental material on the current topic.

Third, as noted earlier, the format allows students control over content sequence. Students are encouraged to work through the material in a hierarchical format, because as the format style implies, one typically needs lower-level material before proceeding on to higher-level material. However, depending on the type and length of experience an individual may have, it has been found that some course material is clearly too elementary for some and therefore not needed for increased learning of the topic.

Fourth, the courses have both synchronous and asynchronous interaction. Related to this, there is a balanced ration of individual and group activity. Therefore, students have both independent time and time to work with the instructor and their peers.

Fifth, related to the preceding factor, most courses involved feedback from multiple providers. Students will receive feedback from the faculty member, teaching assistant, and/or their peers on various assignments and activities. Feedback from multiple providers provides multiple perspectives.

Finally, as noted earlier, the online design supports several communication technologies. These include both synchronous and asynchronous technologies

***The Principle of Readiness.*** Students who enroll in graduate programs typically come in motivated to learn and with the abilities to be successful. However, motivation can quickly wane once they see the requirements for a course, get bogged down in various responsibilities, or have a disappointment in performance early in the course or program. Additionally, because students are scattered all over the US as well as internationally, the camaraderie of a face-to-face class is missing. Therefore, it is even more important for the online instructor to motivate students. As noted earlier, this is done in how they talk about the subject matter, talk about its value within the work environment, and how they provide feedback both verbally and in writing. These are just a few. Each faculty member must find his or her own way of motivating that is comfortable.

Before moving on to the next principle, it should be mentioned that the rate at which a student's e-mail or phone call is returned significantly influences motivation and subsequently the principle of readiness in an online environment. Because the faculty member is not accessible to the online student in the same way he or she is to the campus student, creating and maintaining this "social presence" is critical to student success. Students are guaranteed that their e-mails and phone calls will be returned within 24-hours either by the faculty member or the teaching assistant.

***Life Experiences.*** Faculty recognize the adage that "the whole is greater than the sum of the parts." This is reflected through assignments, WebBoard discussions, and the synchronous chat sessions in which students are asked to discuss examples from their experience that relate to the topic at hand. In fact, this experience is first recognized through the application process in which students must talk about themselves and how their future goals fit in which the Department. The program clearly recognizes that these individuals are professionals that have experience and wants to build on this. In fact, for some, their experience is so vast that it is difficult for them to focus on the theoretical aspects of the course.

***Application.*** Application exercises are a requirement in each online course. Whether this takes place at the learning cycle level, module level, or section level, all courses must have exercises that help students to apply their knowledge, skills, and/or abilities. This is no different from what one would expect in a campus course. The challenge, however, tends to be in creating exercises that replicate those found in a campus course. It requires the faculty member to be creative as well as the students to make the time to complete them either individually or in virtual group settings. Most faculty make the completion of online exercises a requirement of the course in order to provide incentive to the students to complete them. They also try to balance individual and group activities so as to provide and maintain motivation and prevent students from becoming subjected to the pitfalls of one type of activity or another – time for group activities and motivation for independent activities.

***Knowledge of Progress.*** To address this principle, HRE Online courses utilize an evaluation database in each course. This database informs students once an assignment has been successfully received by the system. There is space where the instructor can provide brief feedback on the assignment as well as record a grade. While all student profiles can be seen and accessed by the faculty member, only the student can see his or her individual progress report.

Other faculty choose not to use the evaluation database because they prefer to provide more feedback than the system is design to handle or, because of the nature of the assignment, it is submitted

directly to the instructor. However, the instructor informs students via e-mail once the assignment is received and also provides feedback on the assignment via e-mail. Regardless of which system is used, students know within 24 hours whether the assignment was received. All students are aware of the current standing in a course at all times.

***Repetition.*** This principle is probably the hardest to ensure in an online environment. While the course content is presented through multiple forms, students have to take the initiative to expose themselves to it. This is different from a campus setting in which the instructor essentially controls the amount of exposure to the material.

One step that a faculty member can take is to monitor the number of hits to a particular site. If the hits are down, they can encourage the students to spend more time in the course. However, this is a catch-22 due to the fact that it is not clear why students would not be using all of the material. As noted previously, if a student has knowledge and experience in a particular area, he or she may not need the in-depth information and choose to skip some of the material.

The adage to keep in mind regarding this principle is “you can lead a horse to water but you can’t make him drink.”

### **Evaluation of HRE Online**

Since the inception of HRE Online, two studies have been conducted evaluating the effectiveness of its design. The first study conducted by Johnson, Aragon, Shaik, and Palma-Rivas (2000) examined the learning outcomes of students enrolled in an online course with outcomes of students enrolled in the campus course during the same semester. Both courses were taught by the same instructor, included the same activities, and required the same assignments. After examining course grades; the blind reviews of student projects; and students’ self-assessments of their knowledge, skills, and abilities of the course content, it was concluded that there were no significant differences between the performance of the online students and the campus students. Additionally, students in both courses were equally satisfied with the characteristics that the particular course they were enrolled in had to offer.

The second study was conducted to see if there was a correlation between course format and the learning style preferences of the students in both the online and campus sessions of the same course (Aragon, Johnson, & Shaik, 2000). Results revealed no significant correlations between learning style preferences and delivery format. The authors conclude that students should be successful regardless of delivery format provided solid principles of learning are followed and learning styles are considered in the development and delivery of a course.

### **Implications and Conclusions**

As has been discussed elsewhere, the ultimate question for educational research is how to optimize instructional designs to maximize learning opportunities and achievements in both online and face-to-face environments (Johnson, Aragon, Shaik, & Palma-Rivas, 2000). The discussions presented in this paper show that online learning can be as effective as face-to-face learning in many respects in spite of the fact that students have different learning style preferences. In view of these points, several implications emerge pertaining to future online program development.

First, this discussion suggests that the development and use of online programs should continue. However, it is important that quality and thoroughness of the design and delivery be the catalyst for

ensuring positive online learning experiences. It is logical that if these two factors are not at the forefront of any design effort, learning success may not occur or occur at lower levels.

Second, this study suggests that that a continued understanding of adult learning theory and learning styles needs to be emphasized among faculty. This is critical if courses are going to be designed to address the various domains of learning. This is especially critical in the online environment where an element of creativity is needed to identify and design educational experiences that can be as active, collaborative, and participatory as those commonly found in the face-to-face environment.

Finally, educational practitioners should be aware of their own learning style preferences. The HRE faculty believe this especially true for online learning. As has been shown throughout the adult learning literature (Merriam & Caffarella, 1999), the way we learn and the way we were taught will greatly influence the ways we will teach. Knowing our strengths and weaknesses as educators helps us to know where we will be strong and weak in terms of instructional design and delivery. Related to the second point above, designing online instruction that keeps students motivated and active requires thinking outside the box. Unless we know the boundaries of our “boxes,” we run the risk of not incorporating all learning preferences found in our students.

## References

Aragon, S. R., Johnson, S. D., & Shaik, N. (2000). The influence of learning style preferences on student success in online vs. face-to-face environments. In K. P. Kuchinke (Ed.), *Proceedings from the Academy of Human Resource Development conference* (pp. 958-966). Champaign, IL: University of Illinois at Urbana-Champaign.

Brandt, D. S. (1996, February, 27). *Teaching the net: Innovative techniques in Internet training*. Paper presented at the 11<sup>th</sup> Annual Computers in Business Conference, Washington, DC. (ERIC Document Reproduction Service No. ED 412 975)

Conlon, T. (1997). The Internet is not a panacea. *Scottish Educational Review*, 29, 30-38.

Dziuban, J. I., & Dziuban, C. D. (1997-98). Reactive behavior patterns in the classroom. *Journal of Staff, Program, and Organization Development*, 15, (2), 85-91.

Gallick, S. (1998). *Technology in higher education: Opportunities and threats*. University of California at Los Angeles, Los Angeles, CA. (ERIC Document Reproduction Service No. ED 415 929)

Hill, J. R. (1997). Distance learning environments via world wide web. In B. H. Khan (Ed.). *Web-based instruction* (pp. 75-80). Englewood Cliffs, NJ: Educational Technology Publications.

Johnson, S. D., Aragon, S. R., Shaik, N., & Palma-Rivas, N. (2000). Comparative analysis of learner satisfaction and learning outcomes in online and face-to-face learning environments. *Journal of Interactive Learning Research*, 11 (1), 29-49.

Merriam, S. B., & Caffarella, R. S. (1999). *Learning in adulthood: A comprehensive guide* (2<sup>nd</sup> ed.). San Francisco, CA: Jossey-Bass.

Relan, A., & Gillani, B. (1997). Web-based instruction and the traditional classroom: Similarities and differences. In B. H. Khan (Ed.). *Web-based instruction*. (pp. 41-47). Englewood Cliffs, NJ: Educational Technology Publications.

Webster, J., & Hackley, P. (1997). Teaching effectiveness in technology-mediated distance learning. *The Academy of Management Journal*, 40, 1282-1309.