

TECHNICAL CO AS

Creating E-Learning that Matters

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In today's technology-driven world, more and more companies are embracing the concept of e-learning as a way to replace traditional classroom education with "anywhere, anytime" online learning modules. There's much discussion about the tools and technologies for creating and accessing e-learning, and universities are scrambling to offer online alternatives to traditional classroom settings. But, in our hurry to embrace technology, have we, as technical communicators, forgotten that e-learning is all about—well—learning? Under-

standing how adults learn and applying these principles as we create e-learning content can help us produce more effective and engaging information that users truly learn.

How do adults learn?

Adult learning theory, also referred to as andragogy, is a relatively new field of study. Although there are ongoing debates in academic circles about how adult learning differs from child learning, the ideas of adult education expert Malcolm Knowles are generally accepted as a foundation of adult learning the-

ory. He identified the following characteristics of adult learners:

They are autonomous.

Adults are independent and self-directed. They need to be free to direct themselves in learning activities and often do not function well in the teacher-directed realm, where they are given strict instructions and guidelines to follow.

They have life experiences.

Unlike children, adults bring a foundation of experience and knowledge to

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any learning experience. This base might include professional knowledge, previous education and training, and family experience. Adults can connect learning to their life experiences and should be respected for having that knowledge.

They are goal-oriented.

Adults are ready to learn something when, as Knowles explains, “They experience a need to learn it in order to cope more satisfyingly with real-life tasks or problems.” Upon enrolling in a course, for example, adults usually know what goals they want to accomplish. They therefore appreciate an organized and well-defined educational program.

They need relevancy.

Adults normally must see a reason for learning something. Learning has to apply to their work or other responsibilities to be of value.

They are practical.

Adults are practical, focusing on the parts of a lesson that are most useful to them. They may be interested in knowledge for its own sake but it is more important for them to understand the usefulness of a lesson.

They need motivation.

While external forces, such as a manager’s expecting them to take a specific course or learn a specific skill, motivate adult learners, internal incentives motivate them more. According to Stephen Lieb, senior technical writer and planner at the Arizona Department of Health Services and part-time instructor

at South Mountain Community College, sources of internal motivation include building social relationships, improving self-esteem, achieving higher professional status, securing professional advancement, relieving boredom, and satisfying an inquiring mind.

How do we apply adult learning principles to e-learning?

No matter what type of content we are dealing with, learning will always be a reflection of the course curriculum, student goals, and instructor skills. There is no e-learning theory separate from adult learning theory because the same tenets can be applied to both. For example, class discussions can still take place in a distance learning setting, in the form of bulletin boards or chat rooms. Course assessments still occur, using Web site forms instead of paper and pencil. Although the technology of learning is changing and will continue to evolve, the principles of adult learning have not changed.

Developers of e-learning courses, therefore, must continue to focus on curricula that can lead to enhanced productivity for the corporation or institution. We must design courses that meet the needs and educational goals of adult learners. We must create courses that motivate adults, show relevancy to their job tasks, and respect their autonomy and diverse backgrounds.

We can achieve these aims by understanding what adults need in the learning environment when technology is used. Following are some suggestions for structuring e-learning environments around the needs of learners, as out-

lined in adult learning theory and the best practices of experts in the field.

Motivate your learners.

People are motivated to learn in different ways and for different reasons. For one person, the impetus for learning might be the expectation of improved social interaction; for another, it may be the promise of working more efficiently; and for yet another, it may be satisfying an academic or managerial requirement to achieve rewards or recognition.

Roberta Lacefield, a professor at Waycross College, has said that “while it is not important to know all reasons for all students, it is important to realize not all students are there for the same reason. If assumptions are made about the motivation of learners or if courses are designed as if there is but one motivation for all learners, retention may be a problem. Understanding the diversity of motivation of your students is the first step toward designing effective courses.”

So, for example, a lecture-only or read-only e-learning course may not motivate those interested in the social consequences of learning. It is important to provide opportunities for collaboration in such courses. Learners motivated by credit for a course might prefer to receive an online certificate that they can forward to their managers or hang on an office wall. Those motivated to learn a specific skill will prefer e-learning content that is well-designed, relevant and engaging, and they will need references to resources they can use if they need additional information. In most cases, a culture that supports learning and provides incentives and rewards for educa-

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tional achievements can provide motivation for adult learners.

Relate information to learners' life experiences.

Adults bring a diversity of backgrounds, life experiences, and knowledge to any learning experience. Not only do they want these life experiences acknowledged by the instructor or fellow classmates, they are more likely to remember course materials if the information can be related to these experiences. According to Lacefield, "Retrieval of information in long-term memory is easier when it has been related to something already known. The more ways a meaning structure is connected to our existing knowledge, the more likely we will be able to retrieve it."

It is important to acknowledge learners' life experiences in course materials. E-learning authors must keep in mind that individual learners come from diverse backgrounds and will have multiple perspectives based on religion, gender, ethnicity, age, sexuality, physical abilities, marital status, and membership in certain social groups. It is important to value this diversity, reflect these perspectives, and use these experiences as a basis of learning and assessment. One important way to value diversity in course materials is to be aware of the characteristics assigned to fictional persons and situations used in course scenarios and examples. Make sure these characteristics reflect the diversity found in adult learners.

Skill levels are also part of the background adult learners bring to an educational experience. All learners do not bring with them the same ability to

understand technology, think critically, communicate at a professional level, and so on. To accommodate these differing skill levels within e-learning courses, consider providing differing paths of learning. For example, a managerial course requires a basic understanding of accounting practices. The first part of the online course might test an individual's skill level with respect to that liability. Learners who receive high scores can *test out* of the early topics because they have already demonstrated an understanding of that material.

Show learners how they can solve problems.

In general, adults want to learn something when they believe it is needed to satisfy a real-life requirement. So problem-solving is a highly beneficial skill for adults. According to Susan Imel, director of the Clearinghouse on Adult, Career, and Vocational Education, whenever possible, e-learning assessment exercises should do more than provide opportunities for drill and practice. They should encourage the development of high-level problem-solving.

E-learning can incorporate experiences when users are presented with problem scenarios that simulate real life. Technologies such as collaboration, interactivity, modeling, virtual reality interfaces, and gaming can help adults practice certain skills. For example, instant messaging and chat room technologies can be used to build negotiation, communication, and foreign language skills. Software simulations can also be used to provide feedback about the use of software applications within the safety of an educational environment.

Give learners some control over their learning experiences.

Adults strive for control over their own learning experiences. E-learning can accommodate this desire very well, as it can customize elements for individual learners more easily than traditional classroom education. Online learners can often select only the topics they want to take and skip those they do not need. Learners can fast-forward or rewind videotaped or videostreamed instruction to listen repeatedly to information they feel is most important to them.

Other learners can take advantage of a blended learning approach to absorb information at their own pace before coming into a classroom setting for hands-on training. Blended learning, the biggest trend in e-learning, combines stand-alone, online learning with classroom training. Susan Imel suggests that, because adults generally want autonomy yet also are motivated by social affiliation (they do not want to learn in total isolation), blended learning is an ideal approach, providing an environment that promotes both independent and interdependent activities.

Create relevant content.

Adult learners need to see a personal benefit in education and understand how information relates to settings that are familiar to them. Learning is unsuccessful without relevancy. According to Lacefield, adults experience problems with memory when they feel that information is superfluous, or that learning involves reassessment of old knowledge and pure memorization.

E-learning courses should contain options for testing out of materials so that basic knowledge is not presented to more advanced learners. Assessments should test learner problem-solving, analytical abilities, and comprehension skills, not just the memorization of terminology. Learning objectives and examples should strive to show relevancy to real situations.

E-learning should also provide relevancy through, for example, referring learners to Internet-based resources that provide content relative to their life situations and including teaching of skills in context. According to Imel, this approach allows learners to develop skills that can benefit them outside the instructional setting.

Incorporate active learning.

Adult learners want to know how course materials will be useful in their lives. Imel states that “skills are learned best when imbedded in context of interest to the learner and when learning is active.” This concept of active learning is also supported by Lacefield’s research: “Students in courses which encouraged active learning versus courses which involved strictly lecture earned similar scores on knowledge tests but much higher scores on tests of ability to self-correct, consider multiple perspectives, understand the larger context of a problem, or relate theory and practice.”

E-learning courses can incorporate active learning through the following activities:

- Assignments that require the learner to complete a task outside the e-learning experience and report the findings before continuing
- Assessments that measure learner abilities
- Assignments that require integrating ideas from several sources
- Performing group assignments, presentations, and case studies
- Posting homework to class bulletin boards for feedback

It is admittedly difficult to incorporate active learning into stand-alone courses. In designing stand-alone courses, the tendency may be to use a lecture format

in which the learner reads, clicks the next button, and reads more. However, active learning can be incorporated into stand-alone courses through assessments, simulations, and problem-solving exercises that require interaction from the learner.

Understand the physical and mental limitations of your learners.

Although not a specific component of Knowles’s adult learning theory, it is also appropriate to focus on the physical and cognitive needs of adult learners when developing e-learning courses.

According to Lacefield, short-term memory capacity in adults is limited to about five to nine bits of new information at a time. Information in short-term memory is lost with the passage of time and when the memory is overloaded. Categorizing e-learning content into smaller chunks of information helps learners to increase retention.

Ruth Clark’s book, *E-Learning and the Science of Instruction*, is full of helpful guidelines on how to develop e-learning (especially stand-alone courses) that is designed to help learners focus on the content without distraction. Suggestions include avoiding presentation of text and audio at the same time, writing in a conversational style, avoiding irrelevant graphics and text, and grouping information that must be integrated for learning.

Ready to teach?

Technical communicators are no longer restricted to the use of paper documentation to convey information to adults. And students are no longer restricted to classroom education models for learning. The line between technical communicator and teacher is blurring, especially in large IT enterprises where e-learning content cannot be produced quickly enough. As the role of technical communicators expands to include designing and developing e-learning content, it is important that we understand adult learning theory and its application to the various types of e-learning we will be asked to create, both today and in the future. ❶

SUGGESTED READING

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