

Explaining E-learning to a Stranger

Standards support e-learning system components

■ BY ROBBY ROBSON



Can you explain e-learning to the stranger sitting next to you? Do you know what e-learning products really do? What e-learning standards

are trying to accomplish?

If not, then it will also be a struggle to discuss e-learning products and systems with your colleagues or customers. Communicating effectively requires a common understanding of the components of e-learning technology and services. The same applies when talking about e-learning standards; I'll discuss them later.

E-learning system components

E-learning can be described as the automation of the processes of learning and training through the use of information technology. So the first step in explaining e-learning is to talk about learning. The basic processes in a learning system are intuitive—there is nothing “e” about them:

1. CONTENT CREATION

- Multimedia, HTML, XML authoring tools
- Learning content authoring and assembly tools
- Simulation authoring systems

3. INTERACTION

- Content “players”
- E-mail, chat, whiteboards
- Test engines
- “Real-time” collaborative environments
- Simulation environments

1. CONTENT CREATION

- Package and export content for other components
- Provide descriptions of content
- Obtain a review of newly created content

3. INTERACTION

- Provide learners with navigation aids
- Create a collaborative work space
- Offer email or chat
- Deliver an instance of a randomized test
- Report results

2. STORAGE & DISTRIBUTION

- Search and discovery of content objects
- Serve content upon request
- Check for authority to deliver content
- Assign and track versions of content

4. LEARNING MANAGEMENT

- Create or update a learner profile
- Authenticate user and protect against security threats
- Assign credit or certification
- Schedule resources

Figure 2. A services view of e-learning systems.

- Content (learning and training materials) is *created*.
- Content is *stored and distributed*.
- Learners, instructors, and mentors *interact* with each other and with the content.
- Resources are allocated, fees are paid, results are recorded, classes are filled, credit is assigned, certification is acquired—in other words, *learning is managed*.

E-learning systems are made of components that support these processes using technology. For

example, an HTML authoring tool supports content creation. A test bank is a content storage and distribution device. A system for keeping track of users is a learning management component. Figure 1 lists some of the components of current e-learning systems according to the four basic processes they support.

Product profiles

How does the component view help someone determine what's needed and what to buy? Thinking of products in terms of their components helps explain why vendors market “complete solutions” but at the same time stress interoperability with other products. A product that covers most of the bases can be complemented by specialized products.

E-learning application services

Another way to look at an e-learning system is as a collection of components that provide each other with *services*. For example, a content repository might offer a “search and discovery service” that allows other

Figure 1. A component view of e-learning systems.

components to submit a search string and get back a list of matching content. A content assembly tool might use this service to find objects for assembly, and a learning catalog might use it to find courses to offer. Figure 2 lists some of the basic services provided by the types of e-learning system components.

Conversation among components

An e-learning system works by having a "conversation" among its components. If an assessment engine reports the score on a test, then a management component may request the score and an assessment engine will reveal it. This continual exchange of information and data is the e-learning system at work.

The services view is more complex than the component view. It is not necessarily as intuitive, but it better reflects the way systems are built and the ways

in which components must communicate and exchange data. That's where standards come into the picture.

E-learning standards

Each e-learning application service requires a standard to support it. Standards define what questions can be asked, what information or objects will be provided, and exactly how all this is to be done. Some of the standards being developed today include:

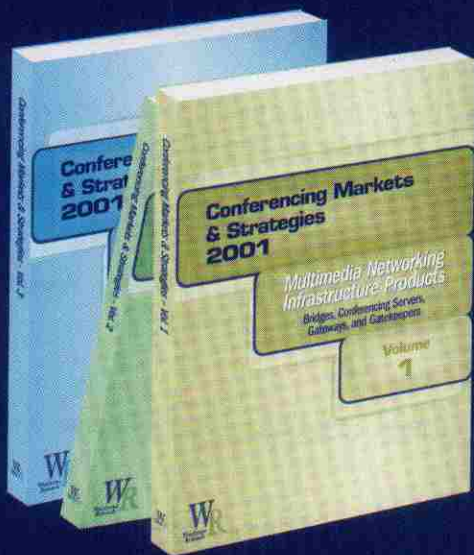
Standards for packaging digital content and describing the order in which a learner should interact with it; standards for cataloging and categorizing learning content; standards for communication between content and learning management systems; and standards for exchanging enrollment data and learner profiles.

Standards are important. They control the conversation among components and determine how well a complete e-learning system works. If

properly crafted, standards are enabling. If properly understood, they provide a window into the present and future of e-learning.

In future columns I'll invite you to join me for a look through the window of standards at the commercial, technical, societal, and even humorous aspects of e-learning. For now, I hope I've established some common ground where we can stand to peer through that window and confidently answer the question, "I've heard of e-learning, but what exactly is it?" *e*

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