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e-Learning
Is it the "e" or the learning that matters?

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Abstract

In our eagerness to embrace technology, we sometimes forget the fundamentals. We have often heard the saying, "build it and they will come." Certainly this does not hold true in the New Economy, just ask many of the "dot-com" companies that have folded up in the last year. Even if you build it and they come, the question is, "how long will they stay?" We can relate the same questions to e-learning. Thus, there is a need to reexamine our understanding of the e-learning concept in order to fully exploit its advantages and to avoid its misgivings. © 2002 Published by Elsevier Science Inc.

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1. Introduction

In these troubled and rapidly changing times, organizations are becoming more convinced that their only lasting differentiator and source of competitive advantage is their human capital. According to Cisco (Hall, 2000), corporate executives increasingly realize that the fate of their companies rests on their employees' ability to absorb information rapidly and learn the skills necessary to adapt to a constantly changing business environment. This has led to a rush in finding and adopting a new way of delivering training known as "online learning." New terminologies such as learning management systems, learning content management systems, reusable learning objects, knowledge-on-demand, and many others have now entered our teaching and learning vocabulary.

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Unfortunately, this enthusiasm for online learning has not really translated well into marked results. After the initial excitement, many e-learning initiatives have fallen short of expectations. Only a handful of organizations are able to claim that their e-learning initiatives made a difference and that the return on investment was high.

This author tries to understand this phenomenon by going back to the basics and fundamentals of a teaching–learning situation and identifying similarities and differences between traditional and this new age of methodologies. Fig. 1 demonstrates the building blocks of e-learning and traditional learning to show basic similarities and differences in methodologies.

The main difference between an e-learning situation and the traditional classroom is the medium over which instruction is transmitted. This is a very important difference. In a traditional setting, the learning provider has total control over the learning environment—adapting, realigning, and changing whenever necessary. There are many differentiating factors influencing the teaching–learning situation such as the teacher's ability and personality, skills, adapting to the learning environment, and creating support materials.

In an e-learning situation, the learning provider is separated from the learner by cyberspace. The ability to adapt, realign, or change is no longer available. This makes the content block a very crucial block. Given that technology is equal, the content is now the only differentiating factor that separates an effective e-learning initiative from an ineffective e-learning initiative.

Unfortunately, in many cases, this is not true. The emphasis on e-learning in the past has been on the "e," which to many means "electronic" or the technology.

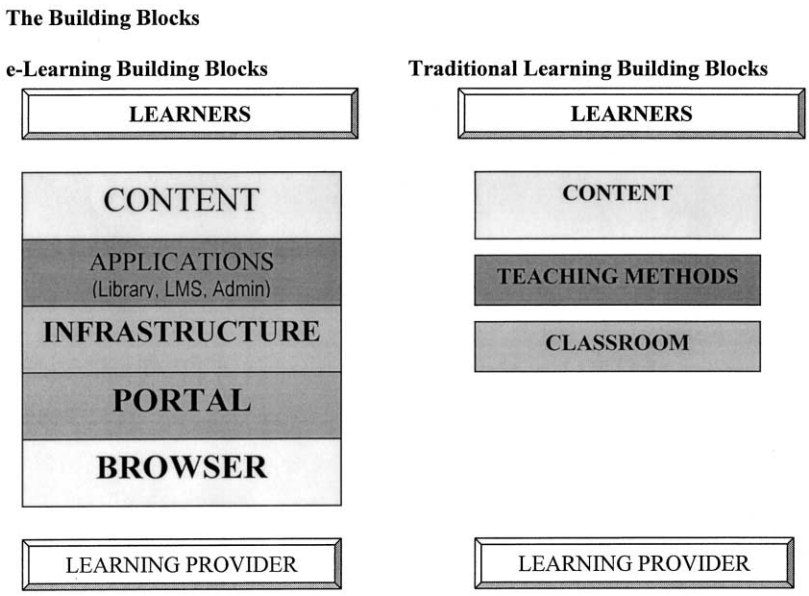

Fig. 1. The building blocks.

> *For example: Asian firms spent heavily on e-learning last year—"the coolest technology, the most bells and whistles." Then, "they had no more money to spend on content and the content was just shoveled on." Whereupon some TTS Asia.com clients reported to the firm that e-learning just didn't work*, Zeisberger, CEO, TTS Asia.com, a Singapore-based instructional design firm.

There is a need to shift the emphasis of e-learning from the "e" (technology) to the learning. This shift will require us to take a closer look at content development.

> "There is no way you can simply convert or transfer any print material to an interactive medium and be effective," according to Viray-Carlos in response to that reader query. Her company "fell into this trap" some months back when it was just starting to use e-learning. "We ended up with users commenting that our WBTs are too wordy, too long or looked like the printed manuals, only formatted in HTML," she indicated. Users "were disappointed, and the WBT did not achieve its purpose."

2. Elements of e-learning content

This is where the difference between e-learning and traditional learning lies. The change in medium changes the elements that make up an effective e-learning content.

2.1. Element 1: information architecture

Information architecture is the design of organization, labeling, navigation, and searching system. It is a process of translating user requirements into functional definitions. It is a necessary element because in this era of information overload there is a great need to create order from chaos so that information can be used effectively.

2.2. Element 2: user interface design (UI)

UI (Barnard, 1991; Laurel, 1991) is the process of selecting elements and features based on their ability to deliver support for the cognitive processes involved in the instructional activities facilitated by the application. UI is necessary because it installs in the user a sense of control. An effective UI has the following characteristics: ease of learning, efficiency of use, memorability, error frequency, and subjective satisfaction (Nielsen, 1993).

2.3. Element 3: content strategy

"Web users do not read BUT scan" is a principle that is well known. This principle requires that:

- Scripting content for the Web must ensure that content is given in chunks in a manner that encourages scanning.

- Content should be organized in a pyramid form with the important points highlighted and details to follow.

These three elements separate a Web content from the traditional content. However, as in traditional content, these three elements are governed by sound educational principles. One principle includes, "If the content does not teach, it has no value regardless of how high tech it might be."

2.4. Pedagogical dimensions

A study by Elly and Jansak (2000) identified the following pedagogical dimensions as important in ensuring quality e-learning experience.

2.4.1. Constructivist approach

This view (Jonassen, 1995) holds that (a) all new knowledge is constructed on a foundation of prior knowledge, and (b) this new knowledge, once interlinked and referenced to the prior knowledge, forms a foundation of new prior knowledge. It is important not to employ your site as a "document dump" and to flood the student with information. The Internet can be used to prompt a student to construct data or knowledge from a vast repository of data. The Internet has no defined structure and, more demanding yet to the student, it provides a plethora of competing and often biased partial information structures. The Internet is an ideal medium for problem-based learning. Problem-based learning activities helps a student to (1) refine a statement of a problem, (2) contrive or develop a sense of the structure of knowledge and reasoning relevant to the problem, and (3) find the information needed to solve the problem.

2.4.2. Self-directed learning

Getting a student to take responsibility for her learning can be achieved if the design helps the student to clearly understand (1) what competencies constitute successful "learning" in the class, (2) the base of prior learning from which she starts and her "distance" from the goals, and (3) the effectiveness of her ongoing efforts to acquire the target competencies at the prescribed level of mastery.

The Web environment is an ideal venue for offering a student the appropriate richness of information in this regard. A course structure map that clearly outlines course competencies, self-assessments that index prior learning, and formative assessments explicitly linked to target competencies motivate learners to take responsibility for their learning.

2.4.3. Evoke intrinsic motivation

Learning is a response to tension (positive and negative, internal and external), and this tension can be highly motivating (Pintrich & Schunk, 1996). Good design evokes positive tension in order to motivate learning and recognizes that being unhappy is one of the most distracting obstacles to learning. In an e-learning situation, a student is prone to frustration because of the technical skills required, the isolation, and because an online class lacks the built-in conventions of the traditional classroom. User frustration can be minimized through

embedding support and feedback features such as chat rooms, active links, and perhaps by providing a time-management system.

2.4.4. Reflective approach

An e-learning situation has all the necessary elements of reflection. An e-learning situation has all the necessary elements of reflection because:

- it is not constrained by class time, and,
- the course site is a cumulative archive of all that has transpired in the class.

2.4.5. Individual learning styles

The online classroom is a flexible environment that accommodates different learning styles. Effective learning occurs when the student expends a minimum of time and effort to acquire a competence he can retain and demonstrate. Learning is effective when an activity designed to encourage learning compliments the student's dominant dimension of intelligence, preferred pace, and preferred degree of orderliness or method.

2.4.6. Experiential learning

Good instructional design does not substitute active, expressive, demonstrable, experiential learning with the passive intake of knowledge. It preserves some element of action and experience in the acquisition of action-oriented competencies. An effective learning site is not measured by its tremendous colors and sophisticated animations but by what the learner can do with the content.

2.4.7. Learning both a private and social activity

e-Learning has the capacity to encourage both these modes of learning. Features such as search out, sort, and evaluate information accommodate the private side of learning. Features such as the discussion board or presentation space prompt social learning that is more collaborative.

2.4.8. Learning is not linear

Research has shown that the learning brain naturally assimilates concepts in a spiraling, progressive manner. The openness of the Internet has allowed the designing of spiral learning. Good instructional design takes the student on a spiral path through course material such that the learner cycles through the topics at an increasingly deep and detailed level.

3. Conclusion

Internet technology has opened up many new exciting avenues for learning providers to explore in trying to promote and encourage learning at all levels. The concept of learning-on-demand increases relevancy. The concept of anytime, anywhere learning promotes lifelong learning and makes distance a problem of the past. However, to promote use of an e-learning

site and to retain customers at the site, there is a need to redefine the "e" from formally meaning "electronic" to include the meaning of "experience," "engagement," and other high level contexts. Then, there is a chance to provide appropriate attention to content development and to return to the basics and fundamentals of a teacher–learner situation.

References

Barnard, P. (1991). Bridging between basic theories and the artifacts of human computer interaction. In: J. M. Carroll (Ed.), *Designing interaction: psychology of the human–computer interface* (pp. 103–127). Cambridge, MA: Cambridge University Press.

Elly, L. R., & Jansak, K. E. (2000). Ten keys to quality assurance and assessment in online learning. Available at: World Class Strategies.com.

Hall, B. (2000). Learning goes online: how companies can use networks to turn change into a competitive advantage. Cisco Systems: Packet Magazine. [online]. Available at: http://www.cisco.com/warp/public/784/packet/jul00/p58-cover.html. Accessed September 2001.

Jonassen, D. H. (1995). *Constructivism: implication for designs and delivery of instruction*. New York: Scholastics.

Laurel, B. (1991). *The art of human computer interface design*. Reading, MA: Addison Wesley.

Nielsen, J. (1993). *Usability engineering*. San Diego, CA: Academic Press.

Pintrich, P. R., & Schunk, D. H. (1996). *Motivation in learning*. New Jersey: Prentice-Hall.