Minding the Gap between Knowledge and Experience

Using the Next Generation eLearning Environments

By

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Executive Summary

Over the last several years, eLearning has emerged as a popular approach to training in the corporate world because of its flexible access, just-in-time delivery, and cost-effectiveness. However, existing eLearning solutions often fail to result in an effective transfer and application of skills because they do not always align well with the actual learning and skill development needs of employees. This paper aligns a new, innovative, enhanced eLearning training solution with established learning and performance educational theory and discusses the potential organizational impact of this new training solution on employee skill development and the employee’s ability to more quickly and efficiently apply those skills on the job. By increasing employee engagement and providing a more contextualized learning environment, SBC Learning’s simulations are a revolutionary approach to eLearning. This paper, in support of experiential eLearning environments, provides a survey of:

- Current eLearning approaches
- Theory and research trends in eLearning
- Benefits and learning outcomes
- Real world case studies
Introduction

Over the last several years, eLearning has emerged as a popular approach to training in the corporate world because of its flexible access, just-in-time delivery, and cost-effectiveness (Caudill & Reeves, 2012; Fladen & Blashki, 2005; Wang, 2011). However, existing eLearning solutions fail to result in an effective transfer of skills because they do not always align well with the skill needs of the employees.

To mindfully bridge the gap between the instructional content and the information required for employees to successfully perform their jobs, this paper suggests a shift from a technology-centered approach to a learner-centered approach to eLearning. To address the current state of eLearning in the corporate world, learning theories and practices from the areas of experiential learning, mastery learning, and situated learning are applied to the process of designing and delivering contextualized eLearning that is engaging, motivating, and effective in transferring skills.
Problem: Why current eLearning approaches aren’t getting the job done effectively

One of the most popular learning trends in the corporate world is eLearning (Jia et al., 2011). In short, eLearning is the creation and delivery of instruction via computer. Despite this current trend, most eLearning solutions fall short of meeting employee needs for developing existing skills and gaining new skills that can be applied immediately on the job (Jia et al., 2011).

The gap is created by the lack of alignment between the information needed for employees to successfully perform their jobs and the instructional content and activities delivered. Furthermore, there often exists a lack of commitment to the instruction from learners due to low engagement and motivation.

The challenges learners face are related to the decontextualization of instructional content, the lack of realistic practice and assessment, the lack of learner support, and the difficulty of developing engaging instruction (Jia et al., 2011). In an attempt to bridge these gaps, many organizations tend to focus solely on searching for technological solutions such as purchasing new software, expanding bandwidth, or producing more courseware (Fladen & Blashki, 2005), all of which are expensive and time consuming. With these kinds of common strategies, the deeper educational issues continue to remain unsolved.

In the interest of increasing employee performance to gain a competitive edge, many business leaders are investing in eLearning to provide increased training flexibility and reduce costs. Furthermore, recent innovations in eLearning
authoring tools now allow training professionals to incorporate and extend established learning practices found in traditional teaching methods to improve learning in the workplace. Consequently, eLearning designers and developers are exploring ways to take advantage of its unique properties and leverage different approaches to instructional design and course management that will provide a more complete learning experience for learners (Caudill & Reeves, 2012).

Currently, the majority of eLearning courseware consists of mostly text and static images with basic navigation tools used to move through the instruction. In rare cases, custom programming is used to create animations and interactions to enhance the learning experience. An underlying issue with this approach is the lack of engagement and motivation created by these traditional eLearning features. Engagement and motivation are essential to helping learners self-regulate their education. Successful self-regulation means learners are more likely to complete the training (Kim, Bonk, & Zeng, 2005).

The latest authoring tools are trying to improve on this limitation by embedding interactive elements into the instruction to increase engagement. This benefit is intended to make eLearning course development easier and cheaper by reducing the need for programmers and expensive code. This method of eLearning, however, still often leaves learners wanting more. It is not uncommon for employees to express resistance to training in general, but the goal is to move eLearning beyond the usual perceptions of being “boring,” “predictable,” and “unnecessary.” Organizationally, this traditional yet passive
method of instruction typically results in employees retaining only about 5% of the information (Brown, Wade, & Murphy, 2011). As time goes on, the retention of the knowledge and skills gained in training continues to decrease, therefore new and more efficient approaches are needed to improve eLearning.

Considering this disparity, even the most interactive eLearning solutions are still hampered in helping individuals acquire and retain the necessary skills to improve their performance (Wang, 2011). A notable reason for this is the lack of contextualized practice and assessment opportunity (Park & Wentling, 2007). Providing opportunities for employees to apply their newly acquired skills in practical situations related to their jobs is a key motivator for learning (Ho & Kuo, 2010). As such, the learning outcome from training is typically driven by its perceived usefulness to the employee as it applies to his or her job. Therefore, practice and assessment play an important role in solidifying employee learning (Ho & Kuo, 2010). Most eLearning solutions have failed to dynamically integrate the context and practical application relevant to the learning.
Theory and research trends in eLearning

Considering all the different purposes of eLearning in the workplace, it is difficult to establish a singular strategy for designing this type of instruction (Brown et al., 2011). However, the current research suggests a shift from technology-centered to learner-centered approaches, while leveraging the latest technological and pedagogical advancements. Recent innovations in the technology behind eLearning have resulted in the emergence of a more powerful suite of tools, capable of more efficiently designing and delivering robust training in the workplace. However, very little is known about how effective eLearning is at transforming employees and ultimately improving performance to the level expected (Brown et al., 2011).

What has been established is that the majority of eLearning applications are based on the objectivist learning model (Wang, 2011). Objectivism is based on the stimulus-response theory in which learning is the transfer of knowledge to a learner from a learning source such as an instructor, handout or PowerPoint. Under this theory, learning is more controlled and dependent on the source. A more contemporary approach is the constructivist learning model. The constructivist theory views learning as a process in which learners actively construct or build new ideas or concepts based on existing knowledge. The theories of experiential learning, mastery learning, and situated learning are derived from constructivism.
**Experiential learning**

Experiential learning theory describes instruction that encourages learners to actively create their own meaning out of information through exploration and experience. Knowledge is continuously gained through both personal and environmental experiences. Customary for this theory, the learner is encouraged to:

- Reflect on the different events in the learning experience.
- Use analytical skills to conceptualize the experience.
- Make decisions and solve problems using the ideas gained from the experience.

Experiential learning, one of the more established research-based theories, features a set of instructional guidelines for eLearning applications. The learner is not limited to linear instructional presentations of media. Instead, the learner is given information to explore in a non-sequential pattern with guidance. These applications are usually highly interactive through the use of hypermedia (e.g., videos, links, etc.) and by allowing the learner to control the experience. Experiential learning is of particular relevance for designing eLearning courses for learners with various levels of prerequisite knowledge. Research has demonstrated that experiential learning can reduce cognitive load, freeing up mental resources (i.e., working-memory capacity) to focus on the acquisition of germane information.
Mastery learning

Mastery learning theory has undergone major developments over the last five years. New instructional methods have been derived from mastery learning theory, and because there is a close association between these methods and the cognitive architecture assumed by eLearning, we believe that applications of mastery learning theory will yield instruction that is compatible with cognitive information processing (Richey, Klein, & Tracey, 2011). “Information processing theory is based upon the view of the human mind operating in much the same way as a computer – taking in data, then analyzing, storing and retrieving it” (Richey et al., 2011, p. 57). A subset of this theory focuses on the construction of mental schema or data structures that represent generic concepts. Schema serves in the comprehension, storage, and retrieval of new knowledge (Richey et al., 2011). One of the goals of mastery learning is providing learners the opportunity to essentially perfect each learning element before progressing to a more challenging learning element (Bloom, 1984). The taxonomy of learning objectives set for learners reside in three domains: cognitive, affective, and psychomotor skills. This is an important construct for designing instruction for learning multiple skill sets of different complexity and creating a more holistic form of learning (Bloom, 1984).
**Situated learning**

The design and use of appropriate contextual content is vital to eLearning (Brown et al., 2011). Integrating examples and metaphors that learners can relate to is a key component of effective eLearning (Brown et al., 2011). By creating the illusion of “being there,” learners are able to envision the real concept or location (Dede, 2009). Just like a well-designed movie draws viewers into the world portrayed on the screen, a well-designed course will help learners get caught up in that eLearning environment. Immersive environments are only now being appreciated for their ability to create authentic learning in real-world settings, and can now be realized in eLearning due to the new powerful tools available. Simulations offer learners engaging and captivating “Alice in Wonderland” experiences in which they actively participate in realistic experiences (Dede, 2009). As a result, immersive environments are more contextual and dynamic than traditional means of eLearning. The learning experience can be based on real-life context, which can enhance the retention and transfer of knowledge in the workplace. The learning can be rooted in employees’ daily activities and interaction with the working environment. The closer the learning environment is to the real context, the more likely that it will be correctly applied (Lave & Wenger, 1991). Learning should not be viewed as simply the transmission of abstract and decontextualized knowledge from one individual to another, but a process whereby knowledge is constructed and reinforced. Activities include:

- Role-playing in a real-world environment
• Military simulation training
• On-the-job training, cooperative learning
• Practice with the same equipment or procedures

Historically, storytelling has been thought of as a powerful tool for creating engaging, memorable moments. An interactive story that combines context and realism can help motivate learners and reinforce the learning objectives (Brown et al., 2011). Engagement and interactivity are key for creating successful and effective training (Prensky, 2001).
Solution: Increasing employee engagement with SBC Learning’s immersive, experiential eLearning environments

SBC Learning is an instructional design company that devises and develops next generation eLearning environments. These environments differ from traditional point-and-click solutions in terms of the level of engagement the user experiences because this new generation of eLearning systems:

• Better meets the challenge of addressing individual learner differences and delivering context-specific knowledge and skill development.

• Allows learners to participate in virtual apprenticeships to be better prepared for real-world role-play or live training and on-the-job learning experiences.

• Teaches learners how to use effective learning strategies to make strategic applications of knowledge using critical thinking and problem solving skill practice to improve skill transfer.

• Can fully replace face-to-face training or be included as a complement to a live session in which an instructor facilitates practice using the immersive environment.

• Can be delivered just-in-time to allow employees to practice the skills they are learning in role play and real-world job tasks sooner.
When creating an effective eLearning system, the focus is not solely on the end-user experience. The back-end technological features needed to efficiently implement immersive eLearning technology in a variety of technological learning environments include:

- Compatibility with existing learning management systems and virtual learning environments.
- Flexibility in integrating modular components into existing eLearning course designs.
- Off-line solutions that are available where infrastructure restrictions prevent the use of the Internet.

As the user experience continues to be enhanced, the back-end feature set is improved as well. In the future, the system will embed user experience data collection in the environment to capture real-time information that can be used to evaluate learner reactions and needs, as well as measure knowledge and skill improvement.
Benefits

SBC Learning’s immersive, experiential eLearning environments provide employee learning outcomes that mind the gap between knowledge, experience, and skills by leveraging the components of David Merrill’s First Principles of Instruction Framework (Merrill, 2002), which are designed to focus learners on developing improved skills by:

- Engaging learners using real-world problems and scenarios.
- Promoting existing learning as a foundation for new learning and skill development.
- Improving learning strategy selection and transfer of active participation in the training to effective real-world problem solving and skill development.

Initial feedback from users has shown that the majority of users are engaged in using the environment effectively. An initial set of satisfaction surveys showed:

- 84% of users felt that the story line was true to life.
- 92% felt the storyline positively contributed to their learning experience.
- 97% of participants found the immersive environment very or extremely useful in preparing them for the skills assessment.
• 94% found the immersive environment more effective than learning from a book.

Additional usability and learning transfer research is being planned to close the loop between the theoretical design of the system and the reporting of quantitative and qualitative learning data aligned to the theoretical framework.
Case studies

Cell phone sales training

SBC Learning’s immersive learning environments have been implemented by a large cell phone carrier to train its sales representatives on effectively approaching customers, providing quality service, and closing sales transactions by remaining focused on customer needs. Learners can safely practice these skills within the immersive learning environment prior to real-world role-playing and actual customer contact.

Large university social work training program

A large European university implemented SBC Learning’s immersive learning environment to provide effective classroom-based training that helps learners develop the appropriate mind set, decision-making skills, and service practices demonstrated by expert social workers and social work educators.

United States Navy

An economic upturn is good news, but for the U.S. Navy it can mean a recruiting challenge. The Navy knew it needed a new sales training methodology and identity that would perform in any economy. In all, SBC Learning produced 11 videos and two simulations for this critical first phase of the VALOR Recruitment rollout, a multi-year engagement. Simulations bridge the wide gap between what people learn in training and what they do on the job. Simulations are the best asset for achieving learning mastery prior to real-world skill application; just ask test pilots.

Conclusion

SBC Learning immersive, experiential eLearning environments are effectively minding the gap between knowledge, skills, and experience by fully engaging learners in strategic consideration of the learning process and providing better just-in-time skill development and practice. For more information about SBC Learning learning solutions, please visit www.SBC Learning.com.
References


