

# Designing Workplace E-Learning

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**Abstract**—Workplace e-learning is both rooted in the principles of instructional design and also a unique instructional environment with different goals from the traditional academic environment. By utilizing sound strategic planning and deliberate instructional design the modern firm can develop quality e-learning products that help to build and maintain competitive advantage.

**Index Terms**—e-learning, training, instructional design, competitive advantage

## I. INTRODUCTION

LEARNING is an increasingly important component for the modern firm. Because of the dynamic nature of markets it is critical that organizations become learning organizations in order to build and maintain competitive advantage. Indeed, effective employee and organizational learning is a key issue for firms operating in a competitive environment (Chen & Kao, 2012). Oye, Salleh, and Iahad (2012) explain that the survival of organizations and individuals in the 21<sup>st</sup> century depends on learning and applying that learning. This process means providing learning opportunities to employees and those opportunities increasingly occur through the medium of e-learning.

E-learning specifically is valuable to businesses in this dynamic competitive environment. Jan, Lu, and Chou (2012) identify workplace e-learning as a fundamental tool for firms to remain competitive. It is so important, in fact, that businesses are continuing to invest in e-learning for employees even during recent times of economic downturn (van Rooj, 2011). These combined factors, both the importance of e-learning to competitive advantage and firms' willingness to continue to invest even when they are divesting other assets, place workplace e-learning as a strategic component for the business process today.

As with any strategic aspect of business the planning process is critical to a successful e-learning initiative. This process must first focus on the goals and objectives of e-learning in the workplace. These are different in the workplace than in an academic e-learning environment. Ubell (2010) explains that the academic e-learning is; education, conceptual learning, constructivism, and collaborative while corporate e-learning is; training, procedural learning, behaviorism, and autonomous. These differences form the foundation of planning for e-learning in the workplace.

The goal of this paper is to provide workplace trainers and others involved with workforce education and development with an overview of how to design successful e-learning initiatives in the workplace. The main contribution of the work is to bridge traditional instructional design theory, which primarily focuses on formal educational environments, with the demands of the workplace. To do this the paper introduces the design concepts of e-learning and discusses each stage of the process with a specific focus on building learning modules appropriate for workplace e-learning applications.

## II. DESIGNING E-LEARNING

Essentially, workplace e-learning is focused on improving the capacity of employees in order to better create value for the firm's customers. This creation of value is the source of competitive advantage for the firm; customers exchange their financial resources for a good or service to which they ascribe value. Thus, the output of the business is value for the customer. Workplace e-learning can be defined, "...as the means, processes, and activities in the workplace by which employees learn from basic skills to high technology and management practice that are immediately applicable to their jobs, duties, and roles" (Cheng, Wang, Moorman, Olaniran, and Chen, 2012, p 885). These jobs, duties, and roles are the activities that drive the business and are keys to the success or failure of the firm in the market.

To best address these needs for a firm the design of e-learning has to be founded on sound instructional design processes. This means that there needs to be an appropriate focus on the design of the instruction. Specifically, the core of e-learning planning has to be founded on pedagogical and organizational issues and not just the technology being used to deliver the content (Mahammad & Kavitha, 2012). Beginning with sound pedagogy and organizational issues the planning process then moves forward to the full instructional design experience.

There are many different models of instructional design and each of them have unique steps and sometimes different numbers of steps but all of them follow an overall general path from beginning to end. For the purposes of this discussion the author has identified six general stages to instructional design for workplace e-learning. These six stages are: needs assessment, content development, media development, testing, production, and assessment.

### A. Needs Assessment

While needs assessment is an important part of any

instructional design plan it carries particular weight in workplace e-learning. The jobs, duties, and roles being supported by e-learning are essentially competencies of the employees. "Competency-based training has been widely used by organizations to drive workplace learning initiatives to enable employees to respond quickly and flexibly to business needs" (Cheng, Wang, Yang, Kinshuk, & Peng, 2011, p 1318). Ascertaining just what those business needs are is the first step of any e-learning development.

Identifying needs that require training to address is a process that should be familiar to most business professionals. Just as most approaches to quality that grew from the initiatives of the 1980s and 1990s focus on engaging every employee in the quality process needs assessment should involve every employee in identifying opportunities. Training at its core is concerned with closing a gap between existing performance and desired performance. Knowing where those gaps exist and how training can address those gaps is a function of examining the details of operations throughout the firm.

The needs assessment process should utilize this input from managers and employees to identify opportunities to improve employee effectiveness and efficiency. If multiple opportunities are identified then these may be ranked based on projected value to the firm. However the process is completed the important activity is to systematically determine where training can best be applied to improve the company's performance.

### *B. Content Development*

Once the topic of training has been identified the next step is to begin developing the content of the training. As with the needs assessment stage content development is not limited to just instructors, but it requires the input of people throughout the company. While responsibility for training is often housed in the human resources department the responsibility for designing training carries across the firm. In content development subject matter experts (SMEs) play a critical role in the process.

A SME is an individual who possesses a level of expertise in the subject of the training and how that training will be applied in practice. In workplace e-learning SMEs may come from management, from the supervisor level, from team leaders, or even from veteran practitioners who can share their experiences as part of the training development process. In many cases the SME will not be just one individual, but an array of experts, each with their own contributions. These SMEs will work with the instructional designer to compile the material that will be included in the training and, possibly, ideas about how the content can be best delivered to the employees.

### *C. Media Development*

After content development is complete the process moves on to the stage of media development. Media in an e-learning environment can range from text documents to interactive

animated elements as well as photo, video, and other media elements. Basically the media development stage focuses on creating all of the elements in the virtual environment that will be used by learners.

As with other elements of design, the focus of media development is to move towards the goal of the learning experience. E-learning research shows that media is an effective student learning element (Donnelli, Dailey, & Mandernach, 2009). Specifically, media needs to enhance the interaction among students and between the students and the course content (Abrami, Bernard, Bures, Borokhovski, & Tamim, 2011). This process reflects the overarching requirement to focus on pedagogy ahead of the technology itself so that the learning experience is an effective one for the participants.

Multimedia is not only an important aspect of the online learning environment but also the single largest cost driver in an e-learning development (Whalen & Wright, 1999). From the perspective of planning and execution this makes multimedia development a critical element. Media is important to the e-learning environment, but in order to maintain appropriate return on investment in the training cost also has to be carefully managed.

### *D. Testing*

The development of content and media is the bulk of what will actually be delivered to the learners, but at this stage the course is not ready for use. Testing is required before learners can access the course. This testing takes multiple forms. Technical viability is one part of the process, the evaluation of whether or not all elements of the course are accessible, functional, and dependable. The other aspect of testing is user testing. This involves having learners or others access the system and evaluate its capability to deliver a quality learning experience. The user interface, navigation, and other elements of the course should be tested by a sample population. This will provide feedback on ways to optimize the course before it is deployed.

### *E. Production*

The production process is when the course is deployed for use by the learners. While there are technical aspects to this stage, such as opening a learning management system (LMS) for learner use, there are also organizational aspects. Promoting the new training opportunity to employees, incorporating the training into overall strategic plans for the firm, and preparing employees to be successful in the e-learning environment are all parts of production for an e-learning experience. Some of these activities, particularly regarding the strategic role of the training and the preparation of employees, can be started or completed during earlier stages of development, but all contribute to production. Once production is complete, however, the development process is not over.

### F. Assessment

The final stage on the list of workplace e-learning development is assessment, but in practice this is a constant activity. Throughout the development process the e-learning course needs to be assessed. Once it is deployed to learners the execution of the course needs to be assessed both during and after employees complete the training; both formative and summative assessments should be applied. Based on the results of these assessments the course will be modified to optimize outcomes. This assessment process will be a continuous process to ensure that the course remains current and productive for the firm.

### III. CONCLUSION

The development of workplace e-learning has been explained here as a series of stages, but in practice the stages often overlap and even move in cycles. Media may begin developing in parallel with content, testing may take place at any time, and assessment will be ongoing for the entire life of the e-learning product. This means that e-learning development is really a cyclical process rather than a set project with fixed end points. As is the case with quality initiatives in all areas of business, instructional design is an ongoing and never ending process that always seeks to further improve the product.

### REFERENCES

- [1] Chen, H. and Kao, C. (2012). Empirical validation of the importance of employees' learning motivation for workplace e-learning in Taiwanese organizations. *Australasian Journal of Educational Technology*. 28(4). pp 580-598.
- [2] Oye, N., Salleh, M., and Iahad, N. (2012). E-Learning methodologies and tools. *International Journal of Advanced Computer Science and Applications*. 3(2). pp 48-52.
- [3] Jan, P., Lu, H., and Chou, T. (2012). The adoption of e-learning: an institutional theory perspective. *The Turkish Online Journal of Educational Technology*. 11(3). pp 326-343.
- [4] Van Rooj, S. (2011). Instructional design and project management: complimentary or divergent? *Educational Technology Research and Development*. 59(1). pp 139-158.
- [5] Ubell, R. (2010). The road not taken: the divergence of corporate and academic web instruction. *Journal of Asynchronous Learning Networks*. 14(2). p 3-8.
- [6] Cheng, B., Wang, M., Moormann, J., Olaniran, B., and Chen, N. (2012). The effects of organizational learning environment factors on e-learning acceptance. *Computers & Education*. 58. p 885-899.
- [7] Mahammad, R. and Kavitha, B. (2012). Establishing a performance testing approach for e-learning applications. *Global Journal of Computer Science and Technology*. 12(6). pp 22-28.
- [8] Cheng, B., Wang, M., Yang, S., Kinshuk, and Peng, J. (2011). Acceptance of competency-based workplace e-learning systems: effects of individual and peer learning support. *Computers and Education*. 57(1). pp 1317-1333.
- [9] Donnelly, E., Dailey, A., and Mandernach, B. (2009). Toward a philosophy of multimedia in the online classroom: aligning multimedia use with institutional goals. *MERLOT Journal of Online Teaching and Learning*. 5(1). Retrieved from: [http://jolt.merlot.org/vol5no1/donnelly\\_0309.htm](http://jolt.merlot.org/vol5no1/donnelly_0309.htm).
- [10] Abrami, P., Bernard, R., Bures, E., Borokhovski, E., and Tamim, R. (2011). Interaction in distance education and online learning: using

evidence and theory to improve practice. *Journal of Computing in Higher Education*. 23. pp 82-103.

- [11] Whalen, T. & Wright, D. (1999). Methodology for Cost-Benefit Analysis of Web-Based Tele-Learning: Case Study of the Bell Online Institute. *The American Journal of Distance Education*. 13 (1), pp 25-43

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