Chapter 4
Principles of Concurrent E-Learning Design

Knut Arne Strand
Sør-Trøndelag University College, Norway

Arvid Staupe
Norwegian University of Science and Technology, Norway

Tor Atle Hjeltnes
Sør-Trøndelag University College, Norway

ABSTRACT

Instructional design is a process that in many cases requires multidisciplinary collaboration among several stakeholders. Domain experts, pedagogues, technical experts, economists, administrative personnel, customer representatives, instructors, and learners may have very different preferences, and sometimes it is a great challenge to coordinate them all. In this chapter, the authors present the principles of concurrent e-learning design. Concurrent e-learning design is a novel approach to computer supported and cooperative instructional design where several stakeholders actively participate in the design process. The results from a concurrent e-learning design project can typically be a comprehensive design document containing details regarding how higher education e-learning courses should be developed and delivered. The authors have worked to codify this methodological approach for several years and conducted a qualitative analysis of data collected during this period. This analysis has yielded sixteen principles, which are grouped into five categories and presented in this chapter. The chapter describes each principle in detail, discusses whether ERP systems can be of assistance in the instructional design process, and outlines a plan for testing ERP systems in connection with the concurrent e-learning design approach.

DOI: 10.4018/978-1-4666-2193-0.ch004
INTRODUCTION

Educational institutions must increasingly deal with changes, adapt to new competitive situations, and deliver a range of services that together make up complete educational offers for the students. Today, these services are largely based on Information and Communications Technology (ICT), and they are important contributions to the total business of the institutions. E-learning deliveries constitute an important part of this business, since e-learning comprises all forms of ICT supported learning and teaching and varies from e-learning courses for formal higher education to self-paced e-learning systems for informal training.

Corporate institutions create value through activities such as trading, logistics, financial services, or human resource services, and Enterprise Resource Planning (ERP) systems provide important support for these processes, since they are utilized to manage the internal and external resources needed to run the business. Educational institutions also need to design and manage their core resources (e.g. academic courses) so that they satisfy the expectations of students and other stakeholders. The reason for this book is the great potential inherent in educational institutions’ use of ERP systems to support design, development, and delivery of academic resource and educational deliveries. The objective is to provide applications, methodologies, and framework suggestions for the use of ERP systems within the education sector. This approach intends to help improve the effectiveness and efficiency of learning and teaching processes and enhance the service level for all stakeholders.

The main aim of this chapter is to present the concurrent e-learning design method (i.e. the sixteen principles of concurrent e-learning design), and to discuss possible links between this method and the use of ERP systems in the education sector. Concurrent e-learning design is as a methodological approach where the objective is to produce holistic designs for e-learning deliveries, i.e. to produce comprehensive descriptions regarding arrangement of ICT-based resources and procedures to promote learning. Such designs must cover aspects such as learning outcomes (what to learn), learning activities (how to learn), technical production and delivery (different learning environments that should be supported), and financial constraints (how to finance the development and delivery). The concurrent e-learning design approach can be used to design various forms of e-learning deliveries which in all cases consist of a complicated design process that involves several stakeholders, requires a multidisciplinary focus, and necessitates information access that can largely be obtained through ERP systems.

The concurrent e-learning design method was initially developed to achieve effective and efficient design and development of e-learning for corporate clients, i.e. to manage and coordinate multidisciplinary requirements so that corporate clients, educational institutions, and other stakeholders could agree upon complex requirements and arrive at mutually agreed solutions. This study is largely based on data from two specific projects where a higher education institution developed formal education for bachelor level students, i.e. instructional design of approved academic courses giving credits. One of these courses was based on an internal initiative and intended for students on campus, while the other was based on initiatives from a corporate client. Consequently, the second e-learning course had to be designed for blended learning (i.e. a mix of different learning environments) and take into account a certain degree of business customization.

In this chapter we present the main principles for successful concurrent e-learning design, which typically can be used when formal e-learning courses are developed at higher education institutions. We believe these principles are useful and should be considered when instructional design activities are to be performed, even if a total concurrent e-learning design approach is not adopted. Involving the client in an interaction with