Open Source E-Learning Systems: Evaluation of Features and Functionality

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ABSTRACT

E-learning applications are becoming commonplace in most higher education institutions, and some institutions have implemented open source applications such as course management systems and electronic portfolios. These e-learning applications initiatives are the first step to moving away from proprietary software such as Blackboard and WEBCT toward open source. With open source, higher education institutions can easily and freely audit their systems. This article presents evaluation criteria that was used by a higher education institution to evaluate an open source e-learning system.

Keywords: E-Learning Applications, Evaluation, Higher Education Institutions, Open Source Applications, Open Source E-Learning System

INTRODUCTION

Techniques for delivering educational material are constantly evolving to keep pace with new technologies and society habits. Educational content can be created in a variety of formats, such as video, online courses, telecourses, and podcasts, which are just a few of the alternatives to the traditional brick-and-mortar classroom environment. These alternative formats are creating a paradigm shift that is exemplified by the term e-learning, which is sometimes called online education or distance learning. The growth in e-learning is compounded by the confluence of Web-based technologies, advances in digital storage, processing and media, and the ongoing boutique approach to software development. This convergence of technologies facilitates education and learning that become ubiquitous and more engaging for both students and educators (Koohang & Harman 2005). E-learning relates to all activities relevant to instructing, teaching, and learning using various types of electronic media. The electronic delivery conduit could be the Internet, intranets, extranets, satellite TV, video/audiotape, and/or CD-ROM.

There is a variety of software applications and platforms that can be used for e-learning. They are defined using a variety of terms, including educational knowledge portal (EKP), learning management systems (LMS), virtual learning environments (VLE), education via computer-mediated communication (CMC) or

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online education. They might also be called a
managed learning environment (MLE), learn-
ing support system (LSS), or learning platform
(LP). This chapter presents a list of criteria
that need to be considered when an organiza-
tion is considering the implementation of an
e-learning system.

E-learning applications are expected to
reduce institutional expenses and increase in-
stitutional revenues (Harvey, 2004; Moallem,
2004; Porter, 2003). Some higher education
institutions are considering the use of open
source e-learning applications. Open source
software products are freely available for de-
delivering education online (Coppola & Neelley,
2004). Siemens (2003) proposes that the benefits
of using an open source model are increased
quality, greater stability, superior performance,
Improved functionality, reduced vendor reli-
ance, reusability, reduced costs, auditability,
reliability, and quick bug fixes.

This chapter is structured as follows: The
first section provides an introduction to open
source software (OSS), followed by an overview
of the features and functionality that can be
incorporated in any e-learning system. This is
followed by evaluation criteria that can be used
to evaluate open source e-learning systems.

BACKGROUND

Open Source E-Learning Software

There are various interpretations of OSS (Fug-
getta, 2003); however, generally open source
refers to a software’s source code that is freely
available to anyone who wishes to extend,
modify, and improve the code. Examples of
open source projects include Linux (http://www.
linux.org), Apache (http://www.apache.org),
Mozilla (http://www.mozilla.org), and OpenOf-

cice (http://www.openoffice.org) (Koohang &
gnu.org) defines free software as “a matter of

1. Free redistribution;
2. Source code must be included;
3. Derived works; allow modifications;
4. Integrity of the author’s source code;
5. No discrimination against persons or
groups;
6. No discrimination against fields of
endeavor;
7. Distribution of license;
8. License must not be specific to a product;
9. License must not restrict other software;
10. License must be technology-neutral.

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monplace in most higher education institutions,
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cations such as course management systems and
electronic portfolios. These e-learning applica-
tions initiatives are the first step to moving away
from proprietary software toward open source.
With open source, higher education institutions
can easily and freely audit their systems. There
is a view that open source systems are open and
transparent and reduce the vendor lock-in. The
system becomes flexible. There will be ultimate

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