Chapter I
Introduction to Open Source Products

INTRODUCTION

Web-based teaching has become one of the main stream teaching and learning methods in most of the higher education institutions. To support teaching and learning activities over the Internet, Web-based teaching has been implemented with various technologies. Among the various solutions, using the open source technology to construct a platform for supporting online teaching and learning has attracted a great deal of attention. To better understand the open source technology and how it can be used to support online teaching and learning, we will first take an overview of the open source technology in this chapter. We will investigate the roles played by the open source technology. We will also examine the strengths and weaknesses of the open source technology in general. At the end of this chapter, a framework of the book will be presented to give an overall picture of the discussion in the book.

The overview section will explain what open source is and list some open source tools that are available for online teaching and learning. It will briefly review the history of the open source technology. We will investigate the usage of the open source technology in education institutions.

After the brief overview, we will look at the roles the open source technology plays in the IT industry and in online teaching and learning. Then, we will consider the advantages and disadvantages of the open source technology. We will compare the open source technology with the non-open source technology according to the cost, security, usability, and reliability. Based on the comparison, we will find out

the strengths and weaknesses of the open source technology and the measures to be taken to reduce the impact of the disadvantages.

The last topic of this chapter is about the book framework. This book is constructed according to the framework. The book framework lists the topics and summarizes the issues in this book, which will help the reader to follow the discussion throughout the book. The framework of this book is also closely related to the process of developing solutions for online teaching with the open source technology.

The conclusion section will summarize what we have discussed in this chapter. It will also present the findings drawn from the discussions in this chapter.

BACKGROUND

After the rapid development over the past twenty years, online teaching and learning have been widely adopted by higher education institutions. When compared with the overall higher education student population, the enrollment of online classes has been growing considerably faster (CRIENGLISH.com, 2008; Sloan Consortium, 2006). According to Sloan Consortium (2006), almost 3.2 million students were taking at least one online class during the fall 2005 semester, which is nearly 40% increase when compared with the enrollment the year before. The fast increase of enrollment indicates that more and more courses need to be supported by Web-based technology.

Web-based technology is also used to accomplish tasks such as student account management and other knowledge management. The increasing needs of Web-based technology create a great opportunity for the IT industry and higher education institutions. On the other hand, it also creates some challenges. Manufacturers need to improve their products to meet the requirements from the ever changing market. The computer service departments in higher education institutions are facing more and more pressure on improving performance, usability, flexibility, and security of their instructional Web sites. Instructors need to design and implement better materials for online teaching; this requires the instructors themselves to keep learning new technologies and instructional theories. Students need to adapt to new teaching and learning environments which may be a lot different from what they had in high school. They will experience the advantages and disadvantages of online teaching and learning. The administrators of higher education institutions will face increasing demands for funding, technical support, new curricula, and skilled personnel.

All this has generated great research interests in dealing with these challenges. Numerous studies have been done in the area of Web-based teaching technologies. In their book, Horton and Horton (2003) described various technologies that can

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