Chapter 18
The Role of Learning Management Systems in Early Childhood Education

Jim Prentzas
Democritus University of Thrace, Greece

Theodosios Theodosiou
Democritus University of Thrace, Greece

ABSTRACT

In this chapter, issues concerning the role of Learning Management Systems in early childhood education are discussed. To the best of the authors' knowledge, such issues have not been thoroughly discussed till now in literature. Learning Management Systems in early childhood concern four types of users: pre-service teachers, in-service teachers, early childhood students and their parents. To a certain degree, each type of user affects the types of services and functionalities that have to be provided by a Learning Management System. Relevant case studies depicting Learning Management Systems role in different settings are presented. Requirements that Learning Management Systems should satisfy are also discussed. Practical issues and guidelines concerning the use of the open source Learning Management System Moodle are also presented. Lastly, future research directions are outlined.

INTRODUCTION

Early childhood education curriculum covers several aspects such as language, science, mathematics, arts and special education (Siraj-Blatchford & Siraj-Blatchford, 2006; Hayes & Whitebread, 2006; Price, 2009). Various resources of Information and Communication Technologies (ICT) can be used in early childhood. Such ICT resources concern devices (e.g., computers, interactive whiteboards, digital photo cameras, digital video cameras, programmable robots and toys) and various types of software. E-learning activities and environments concerning early childhood have been developed. Such activities and environments are mainly based on multimedia resources. Early childhood students interact with the various ICT

resources available in classroom (during structured and non-structured activities) to broaden their knowledge. Several of these resources are available (or can be accessed) at home as well (e.g., computers, cameras, open source software and Web-based services). Such issues are part of the curriculum of higher learning institutions educating pre-service and in-service teachers.

An aspect that has not received much attention involves exploitation of Learning Management Systems (LMSs) in the different settings concerning early childhood education. There are different types of LMS users involved in early childhood education: (a) pre-service teachers (i.e. students of University Departments of Early Childhood Education), (b) in-service teachers, (c) early childhood students and (d) parents of early childhood students. Each type of user affects the functionalities that an LMS should provide. Such functionalities correspond to requirements that have to be satisfied by an LMS. To the best of the authors' knowledge, such requirements have not been defined till now. Furthermore, an overall discussion concerning practical issues and guidelines in employing LMSs in early childhood education is missing in literature. Such a thorough discussion is useful to higher learning institutions educating teachers (e.g., for selection of appropriate LMSs), administrators, programmers and the business community (i.e. provision of appropriate LMS facilities and tools).

Quite often, higher learning institutions must choose an appropriate LMS, maintain their existing system or upgrade to a system that fits curriculum and profile of the student body. This chapter is focused on higher learning institutions educating pre-service or in-service early childhood teachers by providing relevant case studies, presenting requirements that an LMS should satisfy and providing practical issues and guidelines regarding functionalities of a well-known open source LMS useful in early childhood. The purpose of such a discussion is to facilitate selection of an appropriate LMS or upgrading of an existing

LMS. In addition, practical issues concerning use of an LMS in early childhood education settings are useful to be incorporated in the curriculum of higher learning institutions. The discussion will outline the most important aspects concerning LMSs in early childhood settings. Therefore, aspects discussed in this chapter could provide higher learning institutions, administrators, programmers and the business community directions for future work.

The chapter is organized as follows. The following section provides the necessary background concerning LMSs and early childhood education. The third section presents case studies of LMSs in early education settings involving LMSs in pre-service teachers' education, education and support of in-service teachers and interconnection among students, parents and teachers. The fourth section based on the discussion presented in the previous sections discusses requirements concerning all types of involved users that an LMS must satisfy. The fifth section discusses practical issues and guidelines concerning functionalities of a well-known open source LMS that are useful in early childhood and presents which of the aforementioned requirements are satisfied. The sixth section briefly discusses issues concerning future research directions. Finally, conclusions are drawn.

BACKGROUND

Early childhood education involves both teacher-directed and student-centered activities giving emphasis to collaboration, constructivism and interdisciplinary tasks. The term ICT in early childhood education is used in a broad sense covering several types of devices besides computers and various types of software (Siraj-Blatchford & Siraj-Blatchford, 2006; Hayes & Whitebread, 2006; Price, 2009). Students in classroom and at home may use various ICT resources. Devices such as digital photo cameras, video cameras and

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