

## Chapter 6.11

# An Organizational Knowledge Circulation Management System for Universities

**Toshie Ninomiya**

*The University of Eletro-Communications, Japan*

**Fumihiko Anma**

*The University of Eletro-Communications, Japan*

**Toshio Okamoto**

*The University of Eletro-Communications, Japan*

### ABSTRACT

*In this chapter, the concept of an organizational knowledge circulation management system of e-learning is presented. The authors have developed a mentoring system module and a learning design repository based on technological and pedagogical aspects, and evaluated the system in two case studies. They also describe important functions and evaluation aspects of new information technology system of e-learning.*

### INTRODUCTION

Shifting to a knowledge based society requires a high level educational environment in which it is possible to continue learning not only for full-time students, but also for working students. E-Learning allows for realization of this type of educational environment: letting distributed students learn collaboratively by utilizing multimedia contents anytime and anywhere. At first, our university's practical activity is introduced, which offers high

quality education with the consideration for learners' convenience (Allen & Seaman, 2004).

E-Learning outcomes have been judged to be equivalent or superior to face-to-face instruction at most institutes and it has the same educational effect on learners in instructors' opinions. However there are barriers to widespread adoption of e-Learning, especially by faculty (Allen & Seaman, 2006). For example it is an important concern for faculty that teaching online courses requires more time and effort than teaching face-to-face courses. Allen's survey indicated that there has been little increase in acceptance by faculty of the value and

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legitimacy provided by online education. On the other hand, data in Allen's survey shows that the faculty who are fully engaged in online education always acknowledge the value and legitimacy of online education.

Thus our practical purpose is to convince our university's faculty of the benefits of e-Learning by providing them with hands on experience in online education. Ways in which faculty can experience online education are:

- 1) Organizational collaboration
- 2) Facilities: e-Learning studio, e-Learning room, LMS
- 3) Developing system: authoring system, mentoring system
- 4) Faculty development: method of learning design

We have already established the center for research and developing e-Learning (CDEL) for activities in 1) and promoted it as a Good Practice Project for activities in 2) and 3) (Anma, Ninomiya & Okamoto, 2007; Ninomiya, Taira & Okamoto, 2007; Okamoto & Ninomiya, 2007). In this paper, we introduce development of mentoring system for activities in 3) and Learning Design Repository for activities in 4) (Okamoto, Nagata, Anma & Ninomiya, 2008).

### **Organizational Knowledge Circulation Management**

#### **Mission of the Center for Research and Developing e-Learning (CDEL)**

The services provided and research conducted by the center for developing e-Learning are as follows:

##### **Service**

- provide e-Learning room, e-Learning studio, authoring system
- consult faculty about e-Learning

- management of contents' copy rights
- open seminars, forums, international conferences

##### **Research**

- develop/storage/re-use contents/tools/application for learning
- educational/technological research with international collaborators
- standardization in e-Learning (ISO/IEC-JTC1 SC36)
- educational improvement by ICT

The above services and research are based on the missions of CDEL shown in Figure 1. Using learning log data of CSCL in intelligent LMS, CDEL provides standards of academic ability and assures educational quality by conducting educational evaluation. In addition, CDEL contributes to faculty development by producing training in instructional design, learning design, contents developing and mentoring. As the result, improved faculty's ability allows to achieve a higher academic ability and educational quality. In this paper, we introduce new promotional activities based on the missions of CDEL, 1) developed mentoring system for supporting faculty from technological aspect, 2) developed Learning Design Repository based on pedagogical aspects.

### **Knowledge Circulation Management System**

Based on technological and pedagogical aspects, we constructed parts of the modules of knowledge circulation management system shown in Figure 2. Creator and instructor constructed learning designs and practiced using learning design in the repository. These learning designs include learning contents and learning from learners' activities. The learners' activities are recorded in learning log DB. Learner activity integration system manages these DBs as shown in Figure 2. Instructional knowledge is constructed by extracting information from learning design repository and assessment knowl-

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