

Chapter 9

Online Learning Management and Learners' Behavior: A Case Study of Online Learning in Japan

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ABSTRACT

Online learning has been playing a major role in university teaching across the world. For three consecutive years, the authors have surveyed bachelors and masters students who were enrolled in online courses at a Japanese university, in order to study learners' behavior while they are engaged in online courses. It was also their goal in this study to identify learning strategies and instructional design techniques that can contribute to the development of e-learning standards and can be applied to online course design and management. This book chapter will discuss how these issues were addressed using the survey data collected over three years, and based on the results of data analyses, provide a discussion of some guiding principles for the design and implementation of online learning.

INTRODUCTION

The blended learning environment is becoming a familiar style of university instruction, in spite of challenges related to the effective design and management of this type of classroom learning environment. Blended or hybrid courses, which are a combination of face-to-face and online teaching components, are usually preferred because these

courses provide opportunities to review and extend students' learning opportunities. Numerous case studies about this type of learning environment have been reported (Diaz & Cartnal, 1999; Terrell & Dringus, 2000; Birch, 2002 ; Pintrich & Schunk, 2002 ; Koen 2005). To promote this learning style, the course design and the kind of learning support for students, including mentoring and tutoring support, are important issues (Wojciechowski & Palmer 2005).

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The role of learner characteristics as an influencing factor in one's learning performance has been studied since the 1970s. Learning performance has been reported to depend on learner attitudes and learning styles, as in the case of visual learners who benefit more when learning with visual-aid materials, or how learning with text-based materials could be an advantage for language dominant learners. This phenomenon is well-known as ATI or attitude-treatment interaction (Cronbach and Snow, 1977). Because of the effects of learners' attitude on learning performance, it has always been recommended that the effects of ATI be considered in multi-media learning environments. While learner attitude is usually taken into account as part of systematic design of instruction, there is limited report on its role and effect in online learning environments.

The purpose of this research is to investigate any existing relationship between learner characteristics and one's learning behavior, and to explore the possibility of developing a management strategy for blended or hybrid courses where learner characteristics are also taken into account.

For three consecutive years, the authors surveyed bachelor and masters students who were enrolled in blended courses at a Japanese university, in order to collect data on the behavior of students while engaged in blended courses (Nakayama et al. 2006, Nakayama et al. 2007a, Nakayama et al. 2007b, Nakayama et al. 2008).

Online assessment is also addressed in this research. One of the learning goals of university instruction is to develop students' logical thinking and writing (Biggs, 1999) and this is true even with online courses which are, as mentioned earlier, gaining popularity in higher education and taught as blended or fully online courses. E-learning, however, has its restrictions on how learning performance is assessed. Online testing is usually conducted through multiple-choice questions, without using any essay type of learning assessment. Major reasons for employing multiple-choice testing in e-learning include ease

of implementation and ease of managing learner responses.

Conventional face-to-face classes, on the other hand, often employ essay-type examinations for the purpose of assessing learners' meta-cognitive understanding and ability to build logical structures beyond the understanding of basic knowledge (Biggs, 1999; Brown and Knight, 1994). Recently, various types of natural language processing systems have been developed, and this case study will also look at how these techniques may be applied to online assessment using essay-type testing.

BACKGROUND

In Japan, e-learning (including distance learning) has been used mainly as a supplementary learning activity in combination with, or based on, regular face-to-face instruction, because only synchronous face-to-face courses are accredited in Japanese universities. Therefore the role of online courses was limited to supporting extended learning or for self-study. Asynchronous learning, in particular, has not been encouraged until 2000 when the Japanese University Council of the Ministry of Education Culture, Sports, Science and Technology (MEXT) approved the use of online courses as an accredited way of teaching and learning in higher education (Japanese University Council, 2000). To date, the use of online courses is gradually becoming integrated in university teaching.

As a result of these new policies, a new fully online Japanese graduate course was established in 2001 at the national university where this study was conducted (SUGSI, 2009). All classes in this program were made available asynchronously for students who want to earn master's and doctor's degrees in information engineering. The first enrollments took place in April of 2002. Most courses are delivered using the course website, and students can seek advice from a professor or research adviser using Internet video conferencing or other communication methods. Therefore,

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