

Offering the same graduate level courses for residential and distance students: An observation at an instructional systems technology department in the U.S.A.

Junko Nemoto^{1,2} and Katsuaki Suzuki¹

¹ Kumamoto University, 086-8555, JAPAN

²Iwate Prefectural University, 020-0193, JAPAN

ABSTRACT

This paper provides an analysis of a graduate level program for both residential and distance students; the study was derived from an examination of a course design based on existing documents, like the syllabus, and observation of the course by a graduate student. An overview of the program describes the characteristics of the program and how learner support was provided in the program. The analysis of the targeted course made explicit the differences between the residential and distance tracks of the program. The interpretation of the two tracks based on Simonson's^{[1][2]} shows the possibility to be an equivalent program for two different types of students. Plans to conduct the future research are also discussed.

INTRODUCTION

How should the relationship between conventional education and distance education be considered? A number of researchers have conducted research from various angles about distance education, which includes theory and media use. The areas of research span a wide variety of topics: research and practice in collaborative learning that are often introduced in educational institutes^[3], the structure of assessment systems that is appropriate for distance education^[4], and a benchmark that is based on practices of 75 higher education institutes^[5]. Also, scholars have proposed learning and design theories to match the needs of today's society and the current technologies in educational settings^[6]. The online learning methods and the learners' support systems need to be considered according to the learners' environment, e.g., network systems, computers, and experience in online learning.

By analyzing from various standpoints, this research focuses on exploring a successful design form to provide high-quality learning that satisfies the learners' needs. Although education tends to be considered from the educators' and researchers' perspective, educational activities are the result of harmonious collaboration between providers and consumers, i.e., educators and learners. The authors have looked for the way the relationships among

various types of people and resources can be schematized to show a successful learning environment. When the first author had an opportunity to study at a university as a residential student, she investigated, within the structure of the program throughout of the existing documents, the relationships among stakeholders and the effective use of technology. This paper is part of a larger research to examine how the program is provided to the two different types of students. Equivalency theory^{[1][2]} was used to examine whether distance education provides the same quality of learning as conventional residential education.

AN OVERVIEW OF THE PROGRAM

The program, Instructional Systems Technology, has one of the longest histories in educational technology and has provided M.S. program for both residential and distance students. Students may choose either track when they apply to the school. Both types of students receive the same degree and must complete the same number of required credits. Residential students are required to go to the classroom and stay close to campus, but the distance students can attend the courses from anywhere in the world. The students of this program have varied backgrounds and interests, and they can satisfy their own interests and needs by taking different types of courses. While the students can choose the courses that fill their area of concentration, the four required courses are essential for all the students. Most M.S. students take the core courses in the first year of their program because they are prerequisites.

The students use various types of technologies that are provided by the school and the department. The university standard systems provide learning support systems such as mailing services, CMS, and the portal site. These have all been used as a foundation for students' support. Figure 1 shows how both types of students can access the learning resources, including course content and other learning support systems. With a reasonable degree of commonality of content, each type of student uses the system and resources harmoniously. All of these systems have been naturally accepted by the students as essential for

students' support. The main courses of the program were designed to consider the learning environment as well as the characteristics, learning styles, preferences, and experiences of the two types of students.

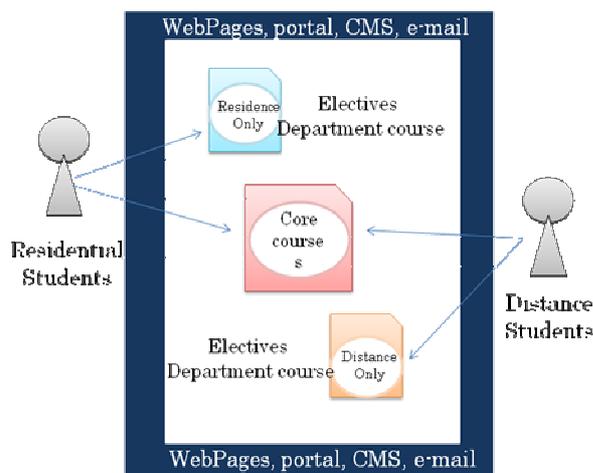


Figure 1: Overview of access to the resources

ANALYSIS OF A COURSE

One of the core courses for both types of students was analyzed and compared. The common framework of the course and its schedule were provided to both classes; each course had, in the CMS, an overview of the course, its objectives, the deliverables and grading, schedule, and links to resources. In the beginning of the class, the same objectives and an overview of outcomes (assignments) were provided. All students were able to start learning by accessing the webpage to obtain the information that they needed. Not only the distance students, but also the residential students used online resources.

Table 1 shows the course structure for both types of students. For the residential students, readings were assigned to develop the foundation of the contents. The residential class meetings were held twice a week throughout the semester; the first class meeting of each week was for lectures about Power Point data (PPT) and Q&A sessions based on questions that students sent to the instructor in advance. Additional ad-hoc discussions were held, depending on the students' need in the second class meeting of the week. The content covered by the instructor sometimes overlapped.

In contrast, individual learning was the main activity for the distance students. These students were assigned the same readings as residential students, they checked PPT individually, and then participated in online discussions conducted once a week after the residential class took place; in the online discussion, supplemental remarks were provided by the instructor based on the Q&A sessions of the residential class meeting; the instructor provided information and

advice for their assignments or feedback from the result of their assignments. The distance students were also asked to prepare questions and send them via email before the Q&A sessions started. The questions that seemed to be useful to all students were shared by the instructor through email.

Table 1: Structure of the course activity

Residence	Distance
Face-to-face class meetings	Online discussion (synchronous)
- Total 28 times	- Once a week
- Twice a week	
- 2hours a class	
Reading (I)	Reading (I)
Lectures with PPT (C)	PPT (I)
Q&A (C)	supplemental remarks (O)
Discussions (C)	Q&A (O)

C Class
 I Individual
 O Online discussion (synchronous)

The content of the course was exactly the same, and the same assignments were provided to both types of students; the outcome of the course was the same. There were four types of course assignments: unit quizzes, exercises, deliverables, and projects (see Table 2). The unit quizzes were time based and a short test was after completing each unit. All students were allowed to bring their notes when they took the quizzes. The residential students took the quizzes in the classroom and distance students received them via email. The distance students were required to return their answers within the designated time that was allowed for residential students. To avoid plagiarism, most of questions were application based so that the answers were not merely based on their notes.

Exercises were designed to confirm the application of the skills that the students learned. The topics were concretely specified such as an analysis of given data with specified techniques that the students learned. Deliverables were advanced practical questions: developing a proposal for a given problem. The students could choose how they would implement each exercise and deliverable: individually or by group. Most of the residential students selected to complete assignments such as exercises and deliverables as a group, and the distance students chose to do the assignments individually. The students selected the topic at the beginning of the course, got approval from the instructor to conduct it, and the project was conducted throughout the semester. The instructor provided several themes to the residential students, but the distance students chose a project that was related to their job. Also, some distance students preferred a combination of mini-projects; but all residential students chose one big group project.

Table 2: Course assignments

Residence	Course Assignments	Distance
- individual - paper based - hand written	Unit Quizzes (open note and time-based tests)	- individual - digital - submission via email
-group activity -submission via email	Exercises (applications for the skills learned)	- individual activity - submission via email
-group activity -submission via email	Deliverables (advanced practical questions)	- individual activity - submission via email
-group activity -client-specific projects were provided by the instructor or chosen by the students	Project (client-specific project or a combination of mini-projects)	- individual activity student chose a client-specific project that was job related

A variety of activities such as discussions, readings, document writings, reflection, and feedback from the instructor, were provided. The instructor arranged the schedule of synchronous activities and gave the students the choice of group or individual activities.

AN INTERPRETATION BASED ON EQUIVALENCY THEORY

Equivalency theory is based on the idea that “the more equivalent the learning experiences of distant learners are to those of local learners, the more equivalent will be the outcomes of the educational experiences for all learners” [1]. Simonson [2] emphasizes that “distance education’s appropriate application should provide equivalent learning experiences for all students distant and local in order for there to be expectations of equivalent outcomes of the educational experience.” This theory describes the features of distance education and technological evolution, and implies that the best form of distance education that enables a valuable education may not take the same format as conventional education. The more the differences between the distance and conventional education have been understood, the more the quality of distance education has been assured through appropriate learning activities. To provide appropriate learning experiences, the theory also advocates the use of new telecommunications technologies for the distance learners who have a potential and an ability to be self-directing [7].

Table 3 shows the interpretation of the course based on the five key elements of equivalency theory. The five elements, which help to understand the theory, include: the concept of equivalency, learning experiences, appropriate application, students, and outcomes. Both types of the course were examined by using all the key elements. Some elements were satisfied with common class learning activities, and

some elements had different learning activities between residential and distance education. These elements can be used to analyze a program as well as a course, but in this study it was applied to a course. This study found that two types of courses designated for residential and distance students were equivalently provided for the different type of students.

According to the “equivalency” element that is the main concept of the theory, equivalency was maintained throughout the course. The group activities provided more opportunities to discuss and share ideas with peers, and the tasks were allocated freely among the members; but to get consensus and make decisions for an action required time to work with other group members. In contrast, individual activities required more responsibility in each process of the activity. The students who chose work individual needed to complete all the tasks by themselves, but they were able to choose their work time and topics more flexibly. The “learning experience” is an essential factor to provide an equivalent value of education. Based on the common content of learning resources, adequate learning activities were provided for each learner. The time spent on each activity varied. Residential students were required to participate in class meetings, but a compressed discussion was implemented in the distance class. The “students” element was satisfied by accepting all students as regular students in the M.S. program. The students chose the program based on the content: student should be defined by their enrolment in a course, not by their location” [1]. However, the elective courses that students can take were different. The school has provided supportive systems such as email, CMS, and libraries for “Appropriate application.” The school’s support to access the resources and systems was available. The common “outcomes” were provided by equally informing and confirming the objectives and assignments. As mentioned above, this study found that there were many factors that maintained the equivalency theory.

Some areas of the course need to be improved. The instructor assisted both classes alone so that he sometimes seemed to be preoccupied responding to the students’ questions and requests, which interfered with the transition of the learning process: feedback about the assignment took too time. It would be better to have a teaching assistant in the classes to accommodate more questions from distance students and have more interaction with the instructor. The distance students need quicker responses from the instructor, because they have less opportunity to talk with the instructor individually. Additionally, the learning system provided by the school can be used more effectively. Communication with the instructor was implemented through email and, as a result, some students had trouble receiving the emails because of

the quota limitation on email. Online discussion board and document uploading systems would address the problem and improve usability. If documents are saved in a specific place online, this would help students to get information equally.

CHALLENGES IN THE FUTURE

The comparison of the program for distance and residential students demonstrates the possibility of the provision of an equivalent program to residential and distance learners. The use of the five key elements of equivalency theory guided this comparative study of the relationship between conventional and distance education, and indicated the possibility that the two programs have provided the same quality of learning.

This investigation is only an examination from a course participant's perspective with existing documents. To provide more validity to the findings of the study, more detailed data collection and analysis are necessary. The next step for this research would be to conduct interviews with the members of the faculty involved in the M.S. curriculum

development, the teaching faculty, and both residential and distance students. By interviewing people who have a different perspective and a different role in the program, the following information can be obtained: how the administrators designed the program, and why four core courses are required; how the teachers implemented the learner's support system into the course; and how the students work through class activities, as well as what they think about the course and its support system. Additionally, other observations about how instructors support students learning process, as well as other existing document reviews will be conducted. Participation in teaching activities as a teaching assistant is a way to implement the observation.

As the anticipation of technological changes and a diversity of learning methods are provided, various theories of distance learning have been proposed, and many practices have been examined by researchers and educators. Our research constructively contributes to the understanding of the current situations and the potency of distance education.

Table 3: Application of the courses to the five key elements in equivalency theory

	The residential students	The distant students
<i>Equivalency.</i> -A central concept of the theory -The experiences of the local and the distant learners should have equivalent values -These experiences may be different	Same activities were provided to all students: readings, documents, and quizzes as individual activities; exercises, deliverables, and projects either individually or in a group. Most of their activities were provided as group work. As a member of the group, they focused their target topic and discussed how to implement, effectively, the project assigned to each group. Regularly and/or as-needed, the instructor gave feedback to each team.	Their activities were mainly conducted by individuals because it was difficult to form a team among students who were physically distant and had a different life style. They shared their own ideas and topics via online discussions. The instructors gave feedback to each question in the synchronous discussions.
<i>Learning Experience.</i> -The types of experience might differ -This includes what is observed, felt, heard, or done -The instructional planning is for making an equivalent sum of experiences for each learner	The methods varied, but the experiences were similar. Students learned through readings, discussions, document development, talking with instructors, and peer feedback. Both have a combination of group and individual activities. Also, there was flexibility in terms of schedule. The same resources could be accessed. Most activities were implemented by groups. Two main activities composed primarily of class meetings and group project meetings; individual activities for reading and writing were offered within the group activities.	Most activities were conducted individually. Based on individual learning, other activities such as discussion and group Q&A sessions were implemented.
<i>Appropriate Application.</i> -Appropriate learning experience to the target learner should provide through appropriate learning environment for the learner	A common system environment provided by the school such as an E-mail address, CMS, a Webpage, a portal site, was used to provide resources and to communicate. All resources in the courses are accessible both within campus and outside campus. Basic technical knowledge of the use of media is required to enter the program. Library online service is available to all.	

	University and department facilities such as library space and computer labs were open to all. Use of these facilities is available on demand.	Students are required to prepare the learning environment (the internet, pc, etc.) to assure they can access the learning environment with support from the school.
<i>Students.</i> -Students are able to participate in the course they want to take -The students seek institutionally-based learning activities	The program is an M.S. program. The analyzed course was required and is three credits. Students could change residential and distance track by request. Residential students can take a distance course and vice versa. Students can select a variety of elective courses from other departments, and select Ph.D. courses provided by the department.	Elective courses are limited.
<i>Outcomes.</i> -The outcomes of a learning experience are obvious and measurable -Two categories of outcomes: instructor determined and learner determined	Students have common outcomes and objectives (core courses) of which they are informed at the beginning of the course. The common objectives were in the syllabus for both students, and all assignments and outcomes were equivalent. The instructor's support toward the outcomes was provided separately. Almost all outcomes were specified by the instructor, but each learner could select the topic or target of the project to meet the requirements of the course.	

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