Analyzing Learning Environments of Distance Education in Japan

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Abstract
This study analyzes distance learning environments in Japan. The authors reviewed the MEXT basic school survey and applied the theory of transactional distance to teaching-learning strategies. Although distance education institutes have been increasing, the number of students did not increase as expected. Students’ motivation is different from their Western counterparts because of the Japanese educational context. Since ICT tools can provide different type of learning strategies, distance education universities should provide a variety of strategies so that students can select appropriate strategies based on students’ needs. Further research will be required more in detail in order to clarify how to improve Japanese distance education.

Keywords
distance learning, ICT tools, transactional distance, structure, dialog, learner autonomy

Introduction
Distance education, including e-learning, has gained popularity worldwide. Japan may not be an exception [1]. Japanese conventional universities started online distance education courses recently. In addition, some companies established distance education universities for focusing on non-traditional students. However, looking at this situation more in detail, we found that distance education universities might not successfully run their activities. In this study, we analyzed distance learning at higher education in Japanese context from the viewpoints of socio-cultural aspect and teaching-learning strategies.

1 Development of distance education courses in Japan
Distance education universities have increased in the last decade. We think that there are three main reasons why theses institutes have increased in recent years.

First, information and communication technologies (ICT), such as the Internet, computers, and mobile phones, have developed rapidly. Broadband Internet allows users to access multimedia information easily so that they process not only text data but also video and images through the Internet. Under these circumstances, universities tried to integrate e-learning into existing curricula and also started new online distance learning courses (Ministry of Economics, 2007).

Second, the decreasing youth population caused increased competitions among universities. Since 2006, universities have had enough capacity to accept all students in Japan. Therefore, each university needs to advertise uniqueness to attract able students. Besides targeting the youth generation, universities also focused on adults, such as office workers, housewives, and retired people, in order to acquire more students. Distance education is appropriate for those people because they are often confined by time and place.

Third, changes in Japanese government policy pushed this direction further. The government revised regulation of distance education in 2002 so that students can get all credit units by distance learning courses without taking any face-to-face courses. Interactive synchronous media, such as video conferencing, can substitute for face-to-face in distance education courses, if communication between teachers and students is interactive in the courses through media. Before, students had to attend face-to-face lectures to receive credits. However, in the new regulations, students can complete their degree by attending only distance courses.

The Ministry of Education, Culture, Sport, Science & Technology (MEXT) stimulated competition among universities for innovating educational practices. MEXT initiatives, such as “Program for supporting tackling educational needs,” include themes: “Innovative distance education with ICT,” so that many universities attempted to employ e-learning
in systematic ways (MEXT 2005).

2 Research methodology

We described, how distance education universities increased and seemed to gain popularity, but we need to clarify how successful they have been. Therefore, our first research question is “Is distance education successful in Japan?” To answer this research question, we reviewed the MEXT basic school survey [1]. If distance education has been success, the number of students enrolled in distance education universities would also increase in proportion to the number of distance education universities. Therefore, we reviewed statistics for distance education from a macro viewpoint. Then, we analyzed students’ motivation and teaching-learning strategies used in distance education in a Japanese context. We employed “the theory of transactional distance” as the basic concept of analysis (Moore, 1972). Finally, we discuss issues and future directions of Japanese distance education. We analyzed web pages, government statistics, documents, and research papers.

3 Statistics of distance education according to MEXT basic school survey

To answer the question, “Is distance education successful in Japan?” we reviewed the MEXT basic school survey [2]. If the number of distance education students increased last decade, these distance education universities would satisfy students’ needs.

According to the MEXT basic school survey, the number of universities increased even though the youth population has not. The number of universities was 622 in 1999 and increased to 765 in 2008. The number of universities that offer distance education courses has similarly increased from 18 in 1999 to 41 in 2008. In 2008, there are five universities that offer only distance course, including the University of the Air.

According to the MEXT statistics, the total number of students were 2,70,104 in 1999 to 2,835,242 in 2008. Although youth population has been shrinking, the number of university students has increasing by 100,000 during this period. These have meant that more non-traditional students have enrolled in universities. As shown Fig.1., the number of total students has slightly increased in the last decade. On the contrary, distance education students increased until 2005, but decreased from 2006 as shown in Figure 2. After government regulation allowed opening distance education courses in 1998, number of students increased dramatically and peaked in 2003. Since then, number of distance education graduate students has been decreasing as shown in Figure 3.

To analyse these statistics, we may say the following:

(1) Non-traditional students increased in both conventional and distance courses. There are some needs for non-traditional students to study at a university.
(2) However, most students prefer to enroll in conventional universities.
(3) Although distance education universities have increased, they do not necessarily satisfy students’ needs.
(4) Therefore, the number of students in distance education did not continue to increase.

Taguchi (2007) explained that there are mainly two aims to employ ICT in higher education, such as “enlargement” and “enrichment.” “Enlargement” means that students gain more educational opportunities to remove hindrances, such as distance and time constraints so that more students can enroll in distance courses. “Enrichment” means that universities employed ICT in order to increase the quality of education, such as interactivity and multi-modality. Conventional universities focused on improving face-to-face class settings. Taguchi argues that Japanese universities aim for enrichment rather than enlargement by employing ICT. As we described, the number of distance education students did not increase although more distance education courses were offered by universities. Our interpretation is consistent with the previous study.
4 Distance education students’ motivation

The next question is “Why haven’t distance education students increased in spite of the increasing distance education courses?” It may be because distance education courses do not satisfy students’ needs. We reviewed students’ motivation for this section.

Mio et al. (2001) conducted a survey of distance education students of six graduate schools which opened distance courses in 1999 and 2000. As shown in Table 1, students’ motivations for enrolling in the graduate schools are “to obtain master degree”, “to gain professional knowledge”, and “for one’s sake.” They had high expectations for new distance education graduate schools. Thirty nine percent of students, however, stopped studying for more than one month according to the questionnaire. A half of these students seriously considered withdrawal from graduate schools. Eighty percent of students felt difficult to find enough time for studying. They also faced the difficulty of keeping up with curriculum requirements. “Lack of communication with teachers” is another cause to stop studying.

Table 1: Motivations for enrolling in graduate school (Mio et al., 2001)

<table>
<thead>
<tr>
<th>Students’ Motivations</th>
<th>percents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain master degree</td>
<td>88.5%</td>
</tr>
<tr>
<td>Gain professional knowledge</td>
<td>78.4%</td>
</tr>
<tr>
<td>For one’s sake</td>
<td>77.4%</td>
</tr>
<tr>
<td>Get a license</td>
<td>51.9%</td>
</tr>
<tr>
<td>For employment</td>
<td>19.3%</td>
</tr>
</tbody>
</table>

Uno (2008) conducted interview surveys for distance education graduate students. She also found that the students had high motivation for enrolling in the distance education graduate schools, but they faced difficulties because there was no support from their workplaces. For instance, when they attend face-to-face sessions, they had to take a paid day-off. Even they took a paid day-off, some colleges were unpleasant. Therefore, some students did not tell their colleagues at their workplace that they were studying at distance education graduate schools.

Educational career is not always correlated to person’s professional status in Japan, compared to Western countries. Most students neither expect to be promoted their working position, nor to increase their salary because of their education. Rather, they would like to be appreciated by their colleges at the workplace. Considering this situation, lifelong education is still underdeveloped in Japan. However, some people have strong self-actualization to pursue their study in higher education. For satisfying these students’ needs, designing teaching and learning strategies in distance education must be considered.

5 Teaching-learning strategies in distance education

5.1 Three classes of teaching-learning strategies

Understanding the background of distance education in Japan, we analyzed how students learn at distance education universities. The distance education universities obviously offer different kinds of learning environments from traditional universities because there is a physical distance between a teacher and a learner. We identify three classes of distance education by generation: correspondence study, broadcasting study, and online study.

5.1.1 Correspondence study

This type of distance education has been common worldwide. Most distance education courses in Japan are classified in this category. Students study independently with print media, send reports by surface mail, and receive corrected reports. Some universities recently employed ICT tools, such as e-mail, but the main communication medium is still surface mail. A unique feature of Japanese correspondence study is “schooling.” It means that, beside independent study, students are required to participate in class with face-to-face settings. The combination of independent study and face-to-face activities is unique in Japanese distance education. This combination has both advantages and disadvantages. The advantages are that since students meet each other in classroom setting, they are acquainted with each other and support each other to continue their study. The disadvantages are that all students have to come to the campus and take day-offs. This requirement is difficult for some students because of workplace situation or physical distance. Students in correspondence study are required to keep high motivation and strong will, but the graduation rate is not high in reality.
5.1.2 Broadcasting study: The University of the Air

The University of the Air (UA) is a typical example of broadcasting study and the largest distance education university in Japan. About 90,000 students, one-third of the total distance education students, are taking courses in both undergraduate and graduate levels. The students mainly use broadcast media, such as TV and radio, and textbooks. Main learning materials are from broadcast media and print media as well as web pages, which are designed rigidly.

They are required to submit reports in the middle of semester. Those who pass the reports can take the final examination which is held at the learning center. Besides distance learning, students have to attend face-to-face class for 20 credit hours at the learning centers, which are located at 100 traditional universities [3].

UA has collaborative relationships with 100 traditional universities so that traditional students can take courses, which are offered by UA, for receiving credits (Amano, 1998).

The graduation rate within four years is less than 10 percent.

5.1.3 Online study

Since the university regulation changed in 1998, technology equipped, new distance education courses were offered by some universities. According to the new regulation, students do not necessarily attend schooling if they participate in media classes, such as video conferencing. Newly opened distance education universities provide the unique feature of teaching-learning strategies by using ICT tools. We introduce two successful examples: Shinshu University and Waseda University.

5.1.3.1 Shinshu University [4]

Shinshu University started the Internet graduate school from 2004. There is no difference between traditional and distance education course students. Those who enroll in graduate school can choose either traditional face-to-face courses or distance education courses. The graduate school offers a variety of distance education courses. If students prefer distance education courses, they can take only distance education courses for satisfying their requirement. They have to come to the campus only when they complete the thesis.

Students learn independently with CAI materials. The university provides various kinds of support for students. For instance, if students have difficulties taking courses, teachers send e-mail for consultation. In addition, communication channels between teachers and students are well supported, such as delivering newsletters, web forums for information and consultation. Recently, teachers provide office hours for consulting students individually in face-to-face situations as well as web synchronous communications such as video conferencing. [4]

5.1.3.2 Waseda University

School of Human Science e-school students can learn by VOD (Video-on-Demand). Lectures are recorded in video format, and students can access them any time thorough the Internet. This learning style is similar to broadcasting education. In addition to VOD, students use web discussion forums in many courses. Educational coaches, who play a role of tutor, are assigned for every thirty students to consult with them and stimulate discussion. The coaches also directly communicate with students through e-mail. In some courses, students can more actively engage in learning in groups and control their learning [5] [6].

Figure 4: plotting three classes of distance education on transactional distance
The graduation rate in four years is 39 percent, which is high compared to 3 to 5 percent in correspondence study.

5.2 Theory of transactional distance

The first attempt to articulate a theory of distance education was in 1972 (Moore, 1972). Later this was called the theory of transactional distance. The theory describes pedagogical relationships between teachers and learners in a distance education environment. The transactional distance is a relative variable of psychological and communication space related to the structure of instructional programs, the interaction between learners and teachers, and nature and degree of self-directedness of the learner. The theory of transactional distance can be employed to assess distance learning environment. Transactional distance is determined by the function of “structure” and “dialog” and “learner autonomy.” The structure of distance education course depends on how flexible the course is designed for responding to learners’ needs. “Structure” expresses the rigidity or flexibility of the course objectives, instructional strategies, and assessment methods. “Dialog” depends on the degree of interaction between teachers and learners. Each communication medium has a direct impact on the quality of dialog between teachers and learners. For instance, when students watch television or read a textbook, there are no teacher-learner dialogs because these media cannot carry messages from students to teachers. On the contrary, students send e-mail to teachers and vice versa. Video conferencing and web forums also can facilitate interaction. Therefore, the degree of dialog depends heavily on what kinds of media are used in distance education course. There are recognizable patterns of characteristics among students who complete the course successfully or unsuccessfully.

“The learner’s autonomy” is an important element in the learning process.

Transactional distance is defined by these three elements. University needs to consider the first two elements when designing distance education courses. The third element, “learner’s autonomy,” depends heavily on personality of learners. Therefore, when we categorize a distance learning environment, we focus on these two elements. For instance, when transactional distance is large, learners’ needs are not considered and every learner has to learn the same content (structure is rigid). Communications between teachers and students are infrequent (low dialog). On the contrary, in the case of small transactional distance, learner’s needs are considered, and learning content can be modified based on learner’s needs (flexible structure). Learners can easily ask questions to teachers, and teachers respond to individual learners’ needs so that communications are more frequent (high dialog).

Applying this theory to Japanese cases, we can plot “correspondence study” on the right hand side, “online study” on the left hand side, and “broadcasting study” in the middle as shown in Figure 4. Although correspondence study is regarded as having a large transactional distance, Japanese distance education requires “schooling” so that students-teachers transactional distance can be shortened by face-to-face situations. UA also has learning centers in which students study in face-to-face settings. Japanese distance education includes “schooling” to minimize transactional distance. We need to consider whether ICT tools can be substituted for “schooling.”

5.3 The new framework for distance education

Based on the previous discussion, we place “structure” and “dialog” on the same axis as shown in Figure 4. However, structure and dialog is not always correlated to each other, so we provide new framework where “structure” and “dialog” are assigned on different axes as shown in Figure 5. The theory of transactional distance describes the first and third dimensions in Figure 5. We need to consider what kind of teaching-learning strategies are possible in the second and fourth dimensions.

5.3.1 The second dimension

The second dimension indicates that structure is rigid and dialog between teachers and students is frequent. In other words, although leaning content is prestructured and teachers give lectures according to preplanned schedules, teachers frequently communicate with students to make sure whether students are able to understand content. Using interactive media, such as video conferencing, for instance, teachers can communicate with student synchronously. The ratios between teachers and students have to be small. Seminar classes with small numbers and project learning under strong supervision of teachers can be categorized in this second dimension.

Most distance education students have difficulty for continuing their study independently because students have difficulty with being highly motivated. Therefore, teachers should provide specific directions and encourage students by frequently communicating with them so that low motivated students can continue their study.

5.3.2 The fourth dimension

The fourth dimension is that structure is flexible and dialog between teachers and students is not frequent. It means that there is less control by teachers so that students autonomously organize learning by
themselves, or they work on projects with more flexibility. For instance, students work collaboratively to investigate, analyze, and present what they learned. Since there is no single answer, students study from multiple perspectives and discuss in order to solve problems. With greater autonomous learning, students develop the learning communities using SNS (Social Networking Service) without support from the teachers.

Students are required to be highly autonomous and self-motivated in the fourth dimension. Since students develop learning activities by themselves, universities need to support these activities to provide richer learning environment.

6 Discussion

As we described in the previous section, the transactional distance is defined by structure and dialog in Figure 5. Universities can control rigidity of structure and frequency of dialog. We need, however, to include the third factor, “learner’s autonomy.” With learner’s autonomy, we can explain the second and fourth dimensions of Figure 5.

In the traditional distance education, the universities can provide only limited tools and resources for the learner, such as textbook, workbook, audio tapes, and surface mail. Therefore, two factors, such as structure and dialog, are critical to determine transactional distance. On the contrary, a variety of tools and resources are provided for today’s distance learner. The learner can choose ICT tools, resources, and interaction based on learner preferences. Therefore, the learner’s autonomy becomes more important to reduce transactional distances. Looking at the framework of distance education in the Figure 4, transactional distance is large without ICT tools. As use of ICT tools advances today, learning in the second and fourth dimensions are also available for learners.

The second dimension of teaching-learning strategies needs to be employed for low motivated students. Close communication, specific instruction, and immediate feedback are necessary for these students so that they can accomplish their study. On the contrary, the fourth dimension of teaching-learning strategies can work for self-directed students. If students can form their own groups, they can initiate their own activities. Uno (2008) described a successful case study in this dimension. Students conducted the following activities autonomously:

1. After students attended an entrance ceremony, they met each other, made a mailing list, and elect a student leader.
2. They took a group picture so that they could identify names and faces.
3. Newsletters were delivered every month so that they could get other students information.
4. Whenever the students participate in schooling, they had social gatherings near railway stations.
5. They had a two-day study tour.

Through these activities, students got to know each other more deeply and supported each other. These kinds of students’ activities are categorized in the fourth dimension.

Considering distance education in a Japanese context, the framework of four dimensions is important for developing wide variety of teaching-learning activities. We think that Japanese distance education has the following characteristics.

1. Distance education is not appreciated in workplaces.
2. Acquiring degrees or certificates do not directly improve their working positions.
3.Since public transportation is well developed in Japan, students try to learn in face-to-face set-

structure rigid

The second dimension

Transaction distance

dialog frequent

The first dimension

infrequent

The third dimension

Small

structure flexible

The fourth dimension

Figure 5: the four dimensions of wider concepts
tings if possible.

(4) Most students are group-oriented so that they expect more peer interaction for supporting each other.

Considering these characteristics, both the second and fourth dimensions of teaching-learning strategies are necessarily. Teaching-learning strategies in the second dimension, however, are not cost-effective from the business viewpoint. Frequent dialog requires more teachers or tutors. More manpower is also needed for supporting students’ autonomous activities in the fourth dimension. ICT tools can be helpful to support these activities, and teachers need to monitor the activities. In order to increase the quality of distance education, a variety of teaching-learning strategies have to be used.

7 Conclusion

Since ICT tools become available, distance education provides many modes of communication. Distance learning requires different kinds of learning modes, such as independent learning, group learning, and discussion with teachers. Therefore, we need to find out what combination of learning modes work better from Japanese viewpoint. In this study, we explored distance learning in a Japanese context. This presentation is the initial investigation. We will investigate distance learning from cultural perspectives more in detail.

References


References URL


