**ABSTRACT**

The Open University of Japan (OUJ), being established in 1983, has been offering higher education services in Japan for the last 33 years through television and radio broadcasting, print materials, and face-to-face classes at 50 study centers nationwide. OUJ is the only university in the world, which owns and operates a terrestrial digital television broadcasting station as well as a Broadcasting Satellite (BS) television broadcasting station, and broadcasts its pre-recorded instructional programs on its own dedicated television channels from 05:00 to 24:00 every day.

The recent decline in student enrollment and the reduction in its governmental subsidy have been forcing the university to reconsider its system of teaching and learning and to innovate its operation. In order to increase the student enrollment, to increase the number of courses the university can offer, and to improve the educational model from a teacher-centered to a student-centered, OUJ developed its first online courses in the fiscal year of 2015 and began offering the courses in April 2016.

The first eight courses offered at OUJ marked the university’s history; however, the online teaching is still considered as experimental and we are now facing a number of issues ranging from budgetary constraints to the different images of online education held by the teachers and students. The major challenge is to shift its long-standing organizational culture based on the educational model of broadcasting pre-recorded lecture programs to a more dynamic and interactive educational model.

I have been involved in developing the online courses at OUJ as the leader of the instructional designer team as well as the principal instructor of one of the online courses. In the following, I will recount the experiences of developing first online courses at OUJ and describe the challenges OUJ are now facing in making use of the interactivity afforded by the learning management system.

**KEYWORDS:** Digital Universities, Online education, Instructional Design.

**TRADITIONAL EDUCATIONAL MODELS AT OUJ**

Before discussing the experiences of developing online courses at OUJ, let me give you the context in which OUJ has been operating since its inception. OUJ has been known as the University of the Air until October 2007 when its English name was changed as the Open University of Japan (OUJ) while the Japanese name of the university has not changed since its inception. In fact, the Japanese name, Hoso Daigaku, literally means “broadcasting university”. The broadcasting of its instructional programs started in April 1985, through terrestrial television and radio broadcasting. What is particularly unique about OUJ is that, since its inception, as its original English name and its Japanese name indicate, the university has owned and operated an over-the-air broadcast television and radio station to deliver its instructional programs. Such instructional broadcasting services mean that not only registered students, but anybody who
can receive the broadcasting signals can watch or listen to its instructional programs.
It was determined by the government that OUJ would broadcast instructional programs over the
air at that time to fulfill the mission to provide the second chance for people who had missed the
opportunity to receive higher education due to the economical and personal reasons during the
World War II and economic downturn afterwards.
With the financial support from the Japanese Ministry of Education, Culture, Sports, Science
and Technology (MEXT) for providing university and continuing education services and the
Japanese Ministry of Internal Affairs and Communications (MIC) for running and operating
broadcasting stations, OUJ has operated its broadcast-based education system for over 30
years. It is classified as a private university although more than half of its revenue comes from
the governmental subsidies.
In each semester over 300 subject courses are being broadcast through terrestrial digital
broadcasting, which only covers the metropolitan Tokyo area, as well as satellite broadcasting,
which covers the entire country as its footprint. Each of the broadcast courses accompanies a
textbook which has been written solely for the broadcast course. The textbooks are published
through a subsidiary organization of OUJ and sent to the students registered for the course as
well as sold at regular bookstores.
The standard educational model for a student to take a broadcast course is to watch or listen to a
45-minute broadcast program each week for 15 weeks, and take the final exam at the end of the
semester which is conducted at one of the 50 study centers around the country. For broadcast
courses, the interaction between teachers and students or among the students are very limited
and also the formative assessment exist only at one-point when the mid-term assignment is
conducted in the middle of the semester. Students have to pass the mid-term assignment to be
qualified for taking the final exam.
In addition to those broadcast courses, face-to-face classes are offered at each of the 50 study
centers. In total over 3,000 face-to-face classes are offered per semester at the study centers
throughout the country though all the classes are independently planned and offered at each of
the study centers without much relation to the broadcast courses. Those face-to-face classes
are usually offered on the weekend using the two full days of Saturday and Sunday by adjunct
instructors who teach at local universities.
Those face-to-face classes usually don’t have exams and student assessment is usually
completed on site either solely by attendance/participation or by some in-class exercises or
reports. It is very rare that the assessment is conducted after the face-to-face classes are over as
the swift submission of the students’ grades is required as an implicit policy of the face-to-face
classes. Those face-to-face classes are planned and organized independently of the broadcast
courses by the director of each study center. Only the broadcast courses are usually the focus of
the attention of the central curriculum committee despite the fact that undergraduate students
have to take the minimum of 20 credits of the face-to-face classes for their graduation.
As explained above, OUJ has offered its higher education services to its students in a very traditional mode of instruction for many years. As broadcast media such as radio and television are the most prevalent media before the Internet become commonplace, they were ideal mediums for reaching the population who seek to learn or obtain degrees of higher education. It uses the public airwave so that the lectures programs are accessible to anybody who has a television and radio receiver. Even though the Internet access has become widespread, for a long time OUJ was not very serious about offering its courses online mostly due to the fact that its mission is to offer higher education to anybody who wishes and the OUJ students tend to be much older than traditional college students so that it was suspected that many students did not possess necessary skills for learning effectively online. In addition, there had been an uncontested fear among the administrative body of the university that if OUJ started to offer online courses, the government funding the university receives for broadcasting its courses would be reduced or abolished.

For those reasons stated above, OUJ had not dared to offer online courses for a long time even after several other higher education institutions in Japan began offering online courses. However, it does not mean OUJ did not utilize the Internet to improve its educational services for its students. OUJ started to make its broadcast lecture programs available online in 2007 so that registered students can watch or listen to broadcast lecture programs on the Internet whenever they have access to the Internet.

In the beginning, there were only a few courses that made their broadcast programs available online; however, the number has steadily increased over years and in 2016 100% of the radio lecture programs and 98% of the television lecture programs are made available online. However, the online lecture videos are not placed on any learning management system (LMS) and there was no way of tracking which student watched what. It’s just that students have to log in to the student portal to watch the broadcast programs made available on the Internet and those videos are not limited to those students who are enrolled in the particular course.

Some of the lecture videos have also been made available online to general public in the form of Open Courseware as OUJ became a member of the Japan Open Courseware (JOCW) in April 2010, which is an international member of the Open Courseware Consortium (OCWC). In 2016, there are 14 television lecture programs made available online to general public as part of JOCW. OUJ has also started to offer MOOC courses through its original platform in April 2014 though its enrollment number has not been as high as originally anticipated.

In 2009, the online student administration system called “System Wakaba”, was put in place, with which the registered students are able to check their academic records, enroll for broadcast as well as face-to-face classes. It also enabled teachers to submit student grades online. In combination with the use of the “System Wakaba”, a limited use of an open source LMS, Moodle, was also started to be used in 2010. The use of Moodle made possible to assess students online as Moodle can track each individual student though its use was limited to online quizzes for self-assessment as well as for the mid-term assignment. Before the use of Moodle, students had to submit their mid-term assignment through postal mail. Since the introduction of Moodle for the mid-term assignment, the number of students who submit their mid-term assignment online has
steadily increased and now in 2016 over 50% of the students submit their mid-term assignments online.

First Online Courses at OUJ

The first two online courses (here online courses mean the provision of the entire course materials through an LMS) at OUJ were offered out of necessity as the university was asked by the Japanese Ministry of Education, Culture, Science, Sports and Technology (MEXT), to offer certification courses for those who want to upgrade their licenses from nursing school teachers to kindergarten teachers. As the courses had to be made relatively quickly (within one year) and also all the time slots for television broadcasting courses had been already filled for the year, the university decided to offer the two courses online.

The courses had to be started in April 2015 and the teams for creating the courses were assembled in April 2014. Though usually at OUJ the development of broadcast courses takes three years from its proposal to the actual delivery, these online courses were tasked to be developed from its proposal to delivery within a year. As for the instructors for the courses, faculty members in a traditional university were selected as they are experts in the topic field of the courses. However, none of them had any experience in teaching at a distance or online.

As for the platform of the online courses, Moodle has been selected as it’s the most widely used open source learning management system worldwide and it has been already utilized at OUJ in a very limited scale as mentioned previously. However, as OUJ did not have much of human resources to customize the system in-house, all the technical work for implementing the online courses has been outsourced, which severely limited the flexibility of the course design as any extra work which was not specified in the beginning would require additional cost that would need to go through a cumbersome budget approval process.

Soon after the first assembly of the team, it was realized that in order to develop the online courses within such a limited time and resources, the courses had to be made as closely resembling the traditional broadcasting courses as possible to utilize the existing resources and minimize the confusion among people involved. Hence, though they were online courses, the utilization of online formative assessment in those courses ended up being minimal with only the self-test tools which were placed in each section. Those self-test tools give immediate automatic feedback to students whether their understanding is correct or not and why their original responses were incorrect.

As for assessment for the course grade, it was decided that those online courses would utilize the same system as the broadcasting courses consisting of mid-term assignments that comprise multiple-choice questions to be automatically graded by computers, and in-person final exams to be conducted at the study centers. The questions in mid-term assignments and those in final exams are taken from the self-test quiz questions so that the courses are designed in such a way that those who studied well online using the self-test tools would perform better in the assessment for the course.

Even though these two online courses are not full online courses in a true sense, it was a revolutionary phenomenon at OUJ and a total of over 2,000 students enrolled in the two courses
and the results of focus group interviews were all very positive. The availability of the learning materials online and the self-study quizzes were received positively by those students with the particular goal of updating their nursing school licenses.

**First Full Online Courses at OUJ**

The above mentioned two online courses started in 2015 were not full online courses as the student assessment is still conducted off line. But, the eight courses that have begun to be offered in April 2016 were full online courses as all the student assessment activities are also conducted online.

The development of the eight full online courses officially began in April 2015, a year prior to the start of the courses. Among the eight courses, six are undergraduate courses and two are graduate courses. As this is the very first time full online courses were to be offered at OUJ, a team of instructional designers, who are also faculty members at OUJ, has been assembled and I was tasked to lead the team. Besides the team of instructional designers, the office of online course development was also created in March 2015 and four full time staff and three part-time staff members were placed in the office.

Even though the team was assembled to serve as instructional designers, most of the team members had not had any previous experience of actually designing online courses and the team members had to learn the process on the fly. Because of it, it was critical to communicate any issues and concerns among the team members and bi-weekly lengthy meetings were held to discuss the issues as they arose.

The most critical issue was the justification of giving one or two credit(s) for an online course. The university law states that one credit hour should comprise 45 hours of study time: Studying a course textbook is considered as one credit; watching and understanding 15 45-minute broadcast lecture programs is considered as one credit; and participating in a face-to-face class of 16 hours is considered as one credit. The law does not state anything about online courses and the heated debates were repeated concerning how to calculate credit hours for online courses. In other words, each online course has to show that it requires 45 hours of study to complete one credit hour.

Each of the instructional designers in consultation with the instructors for online courses created the sheet listing all learning activities in the course and specifying the estimated time for completing each activity, which should amount to 45 hours in total, or 3 hours per week for 15 weeks, to qualify for one credit. Most broadcast courses are two-credit hour courses as a student has to study both the textbook and the broadcast lecture programs for one course. However, for broadcast courses, it has never been questioned if a student actually study 90 hours for one broadcast course as it had become the norm a long time ago; while for online courses, as they are going to be started anew, the substance of credit hours were scrutinized. Eventually all the eight online courses ended up having diverse structures of learning activities ranging from those closely resembling broadcast courses to those with various student-centered activities interspersed throughout the course.

Another issue that had come up was the period of making the learning materials available and
the deadline for each learning activity. Though broadcast programs are aired on a weekly basis, nowadays most of them are made available to students online at the beginning of the semester so that a student can study at the time and place of his/her choice. Therefore, it was determined that all the online learning materials should be made available at the beginning of the semester. Deadlines for completing learning activities were also placed twice or three times in a semester to facilitate time management of students as well as to avoid the system overload at the end of the semester. However, most OUJ students are not familiar with the multiple varied deadlines throughout the semester as all the broadcast courses follow the same schedule of having the deadline in the middle for the mid-term assignment and at the end of the semester for the final exam.

There are many more issues still arising in running the online courses currently, most of which we have not thought of when developing the courses. We are expecting to standardize the processes and procedure of developing and running online courses at the university in a couple of years, but we want to be also careful about the balance between the innovative practices and the standardized practices for effective use of resources while not stifling possible innovations.

**Future of Online Education at OUJ**

The 7-year action plan of the university states that the number of online courses will be increased to 100 by 2020. As the enrolment number of online courses is way above the originally expected number, it is inevitable that the university will shift its focus from broadcasting to online education. OUJ is the only large-scale distance education university in Japan, which has the footprint covering the entire Japan, and the social influence the university will have upon the overall population in Japan as well as other universities is not negligible. Japan is far behind among all the developed countries in effectively offering online education at any level. The future of online education at OUJ will actually reflect the future of online higher education in Japan, which has to be taken seriously.

The people who are designing and developing online courses at OUJ are so-called “learning engineers” (Wilcox, Sarma, Lippel, 2016), who help build bridges between fields of education and stimulate improvements at scale. As each institution has its unique organizational culture defined by its history and surrounding social systems, every context needs to be taken into consideration in designing and developing online courses.
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