

Quality Assurance of an Online Graduate Program in Japan: A case of Kumamoto University's Graduate School of Instructional Systems

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Abstract: This paper describes quality assurance mechanism for higher education in Japan with a case of an online graduate school. Three fold framework of the standard for establishing university, establishment-approval system (EAS), and the quality assurance and accreditation system is first explained. Then the case is described from the perspectives of going through the EAS, outside evaluation requirement based on self-evaluation report, built-in checking mechanism with faculty development function, course design policy and course implementation policy, competency-based approach for validity of the graduates, story-based enhancement for skill integration and applicability, and initial student orientation for skill and mindset building.

Introduction: Quality Assurance in Japan

In Japan, the quality assurance framework consists of the Standards for Establishing University (SEU), the establishment-approval system (EAS) and the Quality Assurance and Accreditation System (QAAS). According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT) Japan, this three-fold framework has both the advantage of the prior regulations that assure proper quality in advance, and the checking afterwards that assure quality constantly, while respecting the diversity of universities. Thus, it has been assumed that this combination of systems is the most effective and efficient for quality assurance (MEXT, 2009).

The SEU is laws and regulations concerning the basic framework such as qualifications for admission, duration of study, and organization, the minimum standards for faculty, facilities and equipment, the norm for educational activities in university, and regulations for taking courses and requirements for graduation. In order to establish a university, the proposer must submit an application for approval to MEXT, who in turn refers it to the Advisory Council for University Establishment, founded in the Ministry. The examination for EAS will be concerned whether the proposal meets the standards stipulated in the SEU. This process had been very rigorous, until the School Education Law was amended in 2002 to introduce the QAAS. Concurrently, the EAS was converted in 2003 so that all universities would be approved as long as they meet the conditions stipulated in the concerned law. At this stage, requirements were reduced and standards were simplified, as the new system of integrating prior regulations with checking afterwards was introduced.

The QAAS (which came into force from 2004) requires that all universities in Japan are to undergo an accreditation process, once every seven years by certified agencies. There are three certified agencies as of the writing: Japan University Accreditation Association (<http://www.juaa.or.jp/en/>), National Institution for Academic Degrees and University Evaluation (<http://www.niad.ac.jp/english/>), and Japan Institution for Higher Education Evaluation (<http://www.jihe.or.jp/en/>). The objective of this system is to provide the mechanisms through which the conditions such as organizational management and academic activity in universities can be periodically checked afterwards. All universities are to conduct self-examination and evaluation before submitting their report to a certified agency. The result of the accreditation process is to be indicated by general level of either "satisfactory in meeting the standards", "unsatisfactory in meeting the standards" or "pending."

For a distance or e-learning based university programs, the above mentioned three-fold framework of SEU, EAS, and QAAS applies the same way as the conventional face-to-face programs. Higher education as distance program has officially in existence in Japan from 1950 as correspondence program based on print-based materials with feedback to the submitted reports via mail. In 1983, the University on the Air was established, in

which television and radio broadcast was introduced as main means of delivery. It is thus a natural extension to create e-Learning based university programs as a distance program. The second option has been to incorporate e-Learning component to a regular campus based university, ranging from playing rather a supportive role to as a major vehicle of delivery. Because of series of governmental deregulations, it has been allowed to use asynchronous interactive e-Learning as an equivalent form of face-to-face classroom instruction, for all of the graduate credits and up to 60 out of 124 credits toward undergraduate diploma, since 2002. Shinshu University's Graduate School of Science and Technology (<http://cai1.cs.shinshu-u.ac.jp/xoops/>) is known to be the first example of offering a full online option to their master's program under this deregulation from 2002.

The third option for e-Learning based higher education provision has been a relatively new one: for-profit programs under the Designated Structural Reform District Act (DSRDA) established in 2003. Colleges and graduate programs have been created under DSRDA, which include Tokyo University of Career Development (2004- <http://www.lec.ac.jp/english/>), The University of Digital Content (2005- <http://www.dhw.ac.jp/en/>), Kenichi Ohmae Graduate School of Business (2005- <http://www.ohmae.ac.jp/gmba/>), Cyber University (2007- <http://www.cyber-u.ac.jp/>), and The Business Breakthrough University (2010- <http://bbt.ac/>). The first one in the list above and one of the two colleges of the 4th have already ceased admission of new students to discontinue the program, by which the stability of for-profit institutes have been concerned, as well as the quality of their educational provision.

Having stated a general description of quality assurance practices for Japanese universities, the rest of this paper will deal with an example of online graduate school. The focus will be on assuring quality, by making the best use of being fully online, which may also be applied to ICT utilization of face-to-face programs.

Overview of Graduate School of Instructional Systems

Kumamoto University's Graduate School of Instructional Systems (GSIS) is an online program founded in April of 2006, as Japan's first graduate school to train e-Learning specialists through e-Learning (Suzuki, 2009). Although Kumamoto University is an on-campus university with about 10,000 students and 1,000 faculties in 7 colleges and 9 graduate schools, founded in 1887, GSIS was created as its first fully online program. It is one of the University President's direct projects to seek possibilities of e-Learning, thus has an experimental nature. As of April 2010, it has 60 degree seeking (including 14 in doctorate program) and 36 non-degree seeking students, scattered all over Japan, mostly working full-time in corporate training or higher education settings.

It was planned to be a fully online program for several reasons. First, the program is targeted for working professionals who require flexibility for them to enroll while working full-time. Second, Kumamoto University is located in the south-most island, whereas the demands for such a program are in major cities such as Tokyo or Osaka, not in Kumamoto. For an institute located far from major cities, online learning was the only choice to obtain enough students. Third, the Japanese government regulation had been changed to allow a 100% online graduate program, not as a correspondence program, but as a regular program that is equivalent of an on-campus program through use of advanced learning technologies which make interactions possible on a regular basis. And fourth, e-learning professionals should be able to be trained via using e-learning systems to show them how various e-learning components can be used.

There was a decision to train e-learning professionals emphasizing four areas of expertise. The four I's, representing the main emphasis areas of the program, are as follows: (1) instructional design (ID), (2) information technology (IT), (3) instructional management (IM), and (4) intellectual property (IP). It is a regular on-campus equivalent master's program that requires two years of study and a minimum of 30 credit hours of courses. Twelve courses are required to complete the master's program, whereas 16 elective courses are offered from which four or more courses need to be taken to complete the degree.

In April of 2008, a doctoral program was added to GSIS as a fully online program as well, with 3 students per year enrolment. The aim of the doctoral program is to produce researchers in the field of e-learning, thus emphasis is placed to train the students in research methodologies, including quantitative and qualitative approaches in education and technology. Since the program has an experimental orientation and since one of the core disciplines is instructional design, it was also decided to reform the master's program at the completion of the first two years (Suzuki, et al, 2009). It was decided to apply the latest of instructional design theories, namely, Story-centered Curriculum (SCC), an extension of Roger Schank's Goal-based Scenarios (GBS). A Graduate School Good Practice Grant from MEXT Japan helped such a reform effort financially.

Quality Assurance Measures of GSIS

Going through the Establishment Approval System

GSIS went through the establishment-approval system (EAS) of MEXT Japan when the Kumamoto University was preparing its start in 2005. This is the first step of quality assurance for each and every higher education program in Japan. Based on the application from the President of Kumamoto University to the Ministry, an evaluation team was organized to judge the quality of the application. In the application, such things are explained as the reason why this new program is necessary, goals of the program, curriculum structure and qualifications of teaching staff (professors' academic records), and planned teaching methodologies and facilities that guarantee the instruction would meet the standards to be regarded as the regular on-campus equivalent program. After some modifications to the curriculum were made, to meet the suggestions made by the EAS committee, the revised application was approved so that GSIS could start in April of 2006.

After GSIS started, end of year reports were required to be submitted to MEXT for any changes of staff or curriculum to be approved by MEXT. This monitoring status continued until the program has come to a completed status, after two years for the master's program and three years for the doctorate program. During the monitoring status, a delegation may visit the campus for aftercare verification, in the case of any concerns being raised. However, GSIS was not requested such a visit during its monitoring status; nor it was offered any advices from MEXT regarding the implementation of the new program. Thus, it completed the monitoring status, and completed in March 2009 (master) and March 2011 (doctorate).

Outside Evaluation Requirement based on Self-evaluation Report

Kumamoto University as a whole has gone through the external evaluation in FY 2009 as the Quality Assurance and Accreditation System (QAAS) had become a required practice for all Universities in Japan. The Self-evaluation Committee was first established by the Organizational Evaluation Policy as a university-wide committee directed by vice president in order to prepare for QAAS in 2007. Self-evaluation Report was then summarized based on the discussions in each sector within the university, and made public via Website in 2009. The Report was submitted to the National Institution for Academic Degrees and University Evaluation (NIAD-UE) to be reviewed for QAAS. NIAD-UE gave the university a pass as an accredited institute with details feedback comments for strengths and for future improvements, which was then posted in Japanese on the university Website (<http://www.kumamoto-u.ac.jp/daigakujouhou/uneisoshiki/hyouka.html>) and NIAD-UE's Website.

Prior to the University wide QAAS, GSIS decided to take an external review when it was approaching to the completion of the master's program in March 2008. A similar process to QAAS for getting external evaluation was followed, which included self-evaluation committee within the program, self-evaluation report, and examination of the report and observation of the online courses by an expert panel of external evaluators. The panel consisted of three experts: one from the field of study (representing an academic association of Educational Technology), one from e-Learning Consortium Japan (representing the professional field, where our students are coming from and going to), and one from a university offering e-Learning specialist training program. Having sent the GSIS's self-evaluation report and an instructor access to all the courses of GSIS, the panel was then invited to get together in Kumamoto to make recommendation report based on their observations and interviews.

Built-in Checking Mechanism with Faculty Development Function

Another mechanism of assuring quality in higher education is organizational effort in faculty and staff development. In Japan, organizational faculty development became mandatory to all higher education institution by the order from MEXT in 2009. However, majority of such effort has been characterized by scattered implementation of occasional seminars by an outside expert, observing classes each other, annual awards for the best teacher, or student evaluation of completed courses. These efforts seem to be taken as a reaction to the mandatory enforcement of faculty development, which may not lead to substantial improvement in quality of

teaching.

Contrary, GSIS has implemented a built-in mechanism for checking course quality among faculty and staff, while the course materials are still being under development. It is the advantage of fully online program that all the materials must be prepared in advance to the implementation of the course, in the form of course content on the learning management system. Regularly scheduled meetings among faculty and staff in charge of course preparation have been conducted as a built-in step toward the completion of the course materials. Designing tips and implementation techniques were exchanged in the meeting to share the ideas among faculty that functions as opportunities for faculty development. GSIS Course Design Policy has been used as the reference to check the quality, whereas GSIS Course Implementation Policy has been used while courses are in session.

Course Design Policy and Course Implementation Policy

Based on our audience analysis, governmental regulations, and general grading policy of the University, a set of course design policy was established as shown in Table 1 (Suzuki, 2009). Asynchronous mode was decided to be the main method of interaction though the use of learning management system's quiz function, report submission function, and Bulletin Board System (BBS). Instead of having deadlines once a week, our policy states the 15 required interactions to be clustered to have two or more tasks due on the same date (Policy 4). This was introduced by taking account the fact that each of the students would be taking 4 or 5 courses each semester. If due dates are set for every weeks, then he or she would need to handle tasks for 4 or 5 different courses each week. By having them clustered, a student would be allowed to finish several-week worth of the tasks of one course, before moving to the tasks of a different course.

Table 1. GSIS Course Design Policy

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1. Fifteen (15) interactive sessions in each course with evidences, e.g., quiz, mini-report, answer to practice exercises.
 2. Course grades based on multiple reports/products with the record from 15 sessions, each requiring the minimum of 60% for a passing grade.
 3. Direct connection of course assignments to the competencies.
 4. Due dates of 15 session tasks to be clustered into 3-5 blocks to enable learner's intensive study.
 5. Limited synchronous whole class activities (maximum of twice a semester per course).
 6. Students commenting each other's reports/products for improvements before final submissions.
 7. Introductory video message in all courses or all blocks of a course as a motivator, not as a primary mode of information provision.
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While the Course Design Policy was set to maintain the quality of the course content, another set of policy, Course Implementation Policy was set later to guide implementation phase of courses. It deals with such rules that all assignments be graded within one week from the due date, and that there will be no "fail" given to any assignment, but "revise and resubmit" be given instead. The policy was proposed and agreed at a professor meeting, then passed onto part time faculty. It has been critical that all faculty members follow the policy once decided to make it effective as a ground rule. Continuing effort in monitoring the proper implementation of the policies is the key to assure what has planned.

Competency-based Approach for Validity of the Graduates

The master's curriculum of GSIS was designed backward from a set of graduate competencies, 12 core and 6 optional (Suzuki, 2009). Each and every assignment of all courses for master's degree is mapped to one or more of these competencies, so that the attainments of course assignments would assure student improvement toward building competencies for graduation. Advance courses have their prerequisite basic courses, so that the basic knowledge and skills must have already mastered at the start of the advance courses, thus assuring structured relationships among the courses.

All courses are also mapped to the list of competencies set by e-Learning Consortium (eLC) Japan toward their certificates of e-Learning Professionals: The Basics, Contents Creator, Learning Designer, Expert, Manager, Consultant, and SCORM Engineer. By taking required courses only, the curriculum is designed in such a way that the graduates can obtain three certificates. By adding designated optional courses, three more certificates may be awarded. This has been done with cooperation with eLC at the time of GSIS's curriculum design, when eLC was preparing the start of their professional certification.

This mutual relationship with eLC has been served as to assure quality of GSIS program as professional training. Our courses have been used as partial fulfillment toward certificates of e-Learning Professionals when taken as non-degree seeking students, whereas our graduate program has been qualified as a whole certifying body for eLC's Professional certificates. GSIS and eLC are in agreement to suggest any advancement in the requirements toward the certificates, as well as making adjustment to our curriculum when modification occurs in eLC's requirements of being certified.

Story-based Enhancement for Skill Integration and Applicability

As for the methodology of teaching in the master's program, GSIS introduced Story-centered Curriculum (SCC) from the third cohort who joined in April 2008, with a Good Practice Grant from MEXT for innovative project for improving the quality of education in graduate school. This has been an experiment in nature to stay current in the latest design concepts to be applied to its own teaching, thus trying to assure quality of the program. Trying to be current by incorporating the latest of the field of instructional design to the curriculum of instructional design has been a big challenge but an opportunity to make sure what we are doing reflects the latest trends in the field.

SCC is an extension of Roger Schank's instructional design theory called Goal-based Scenarios (GBS). Whereas GBS is a model for designing simulations for learning higher-order skills by doing and making mistakes in a virtual environment (Schank, 1996; Nemoto & Suzuki, 2004), SCC is to be used for curriculum-level design by providing an architecture for higher scalability without losing the learning by doing nature of GBS (Schank, 2007).

SCC unites multiple courses, usually taken concurrently within a given semester, by introducing first a cover story from a real-world situation common to multiple courses, in which graduates of a program would be expected to work as professionals. Within such an authentic context, the students would act as if they were already in such a situation, but with assistance and information from faculty when needed. SCC sets a structure for low cost implementation, as compared to GBS, by (1) using low-end media selection such as e-mails and video clips on Web, rather than high-end branching digitalized video-based scenarios, (2) incorporating existing resources available online, or in textbook format, and (3) relying on professor (and/or tutor/peer)-student interactions, rather than preprogrammed-for-all-possibility sequences of computer-student interactions. The details of GSIS's introduction of SCC can be seen in Suzuki, et al (2009).

Initial Student Orientation for Skill and Mindset Building

GSIS regards introductory orientation to its new coming students very important. Thus, as soon as a new student is admitted to the program, he or she is given access to the online orientation course, prior to the start of the first semester. It is aimed to let the new students acquainted with the basics of GSIS, but also to raise the skill level and to change the mindset of them so that they would be better prepared for the new learning environment. The basic assumption is that there is a unique set of skills and mindset for online students to be successful in their learning. In other words, it assumed that there is a contributing role to play on the students' side for the program to offer a better quality education. If there is such a role to play, then it would be better to tell them the expectation at the outset of their online experiences.

The online orientation consists of the mixture of technical and conceptual introduction. Technical skills include how to set up the personal computer for network access, how to maneuver the learning management system, and how to use the listserve for communication. It is also taught that the only way to show the others of your existence in the online environment is to actively participate by posting your words; otherwise, nobody would notice even if you read the postings. Conceptual introduction includes goal setting, including which of the e-Learning Professional certificates will be aimed at, coursework planning, including which courses will be registered in which semester considering prerequisite relationships among them, self-evaluation of competency levels in relation to what the students have already experienced in their jobs, and whether or not they would be

involved in SCC. By going through this online orientation, the new students would have right expectation for their coming experiences, thus be ready to start the new challenge that they would face. By having a set of better prepared students, we expect that our students contribute to the overall quality of our educational provision.

Conclusion

A case of quality assurance of Japanese higher education program is described above. It was our intention to utilize what we know about instructional design to create our own learning environment for the 100% online master course for working professionals. After being approved by MEXT, we didn't have luxurious time for preparation before starting the program. Development of course contents were done according to the course design policy, as we examined while making the next chunks of course contents, just ahead of our student progress. Minimum requirements for clearing assignments in every course were maintained highly with necessary resubmission, yet student reactions in course evaluation were positive.

This case may be considered an extreme, since the core of the program is instructional design, and since the program deals with e-learning not only as the means but also as the content area of training. However, the similar processes may well be applied when creating online programs in different areas. It has been our effort not to ignore what we teach in our curriculum, which may have produced over applications of instructional design principles. It may well be shown, however, that strict adoption in this case can be benchmarked, or simplified ways of adoption may be sought out. Other cases that follow or modify the footsteps of this one will be needed to make certain how much can be taken from this case.

Going online sets a new challenge for assuring the quality of educational provision, especially if we go fully online. Having our students at distance with few chances to interact directly with them, we may need to rely more on the perseverance, initiation of learning activities, and being an independent learner on the student's side. Initial strategic effort for orienting the new students to the new set of environment that require different skill and mind set is the must to help them acquainted with the online learning (Nemoto, et al, 2010a). Another key has been to incorporate various kinds of group work, gradually introduced with an increasing degree of complexity as the semester goes on (Nemoto, et al, 2010b). Provision of assistance, either technically or mentally, plays another key role, especially those who and when encountered with simple but critical problems at the outset of the learning experiences.

On the other hand, going online can be seen as an opportunity to provide steadier mechanism for assuring the quality, as compared to on campus face-to-face program. Everything occurs during the coursework can be tracked down to find out what has been really going on. Offline learning time may not be recorded on the learning management system. Discussion boards have only partial records of who have written something, without showing thoughtful learning activities yet to be visibly written on them. So, the records kept online may not be perfect, but they give us much more evidences for detecting the quality of learning than face-to-face instruction where everything is closed within the doors of classroom and diminishes as the chime goes off. There are many things that we can do in online program that are uniquely done only in online environment.

Our journey continues as we accept next batches of our students: they may not be the same as of previous years, which may give us new set of challenges in the provision of our education. Future challenges include not only possible change in our student characteristics, but also internationalization, continuing updates of what we teach, and how we teach them, hearing from and working with our own graduates as our precious feedback and circulation channels. The most critical element in assuring the quality of our activities seems to have a mechanism to continuously monitor and propose revisions for what we are doing. It is this monitoring mechanism that would enable us to be playing for a long time as an innovative provider of the online graduate program in Japan.

References

- MEXT (2009). Quality Assurance Framework of Higher Education in Japan. Higher Education Bureau, Ministry of Education, Culture, Sports, Science and Technology (MEXT). [Available online] http://www.mext.go.jp/english/koutou/_icsFiles/afiedfile/2009/10/09/1284979_1.pdf
- Nemoto, J., Kubota, S., Migita, M., Matsuba, R., Kitamura, S., Kita, T. & Suzuki, K. (2010a). Design of Authentic Learning: A Challenge in E-learning Specialist Graduate Program. *Proceedings of Global Learn Asia Pacific*

2010, 1237-1242, Association for Advancement of Computers in Education.

Nemoto, J., Oyamada, M., Shibata, Y., Suzuki, K., (July, 2010b). "Learning Sketch": A Learning Reflection Activity Design. *Proceedings of ICoME (International Conference on Media in Education) 2010*, 206-213.

Nemoto, J., & Suzuki, K. (2004, August). GBS checklist for training application. *Proceedings of the International Symposium and Conference on Educational Media in Schools*, 75 - 82.

Schank, R. C. (1996) Goal-Based Scenarios: Case-Based Reasoning Meet Learning by Learning by doing. In D. Leake (Ed.), *Case-Based Reasoning: Experience, Lessons & Future Directions*. AAAI Press/The MIT Press.

Schank, R. C. (2007). The Story-Centered Curriculum. *eLearn Magazine*, Feature Article 47-1, Association for Computing Machinery [Available online] <http://www.elearnmag.org/subpage.cfm?section=articles&article=47-1>

Suzuki, K. (2009). From Competency List to Curriculum Implementation: A Case Study of Japan's First Online Master's Program for E-Learning Specialists Training. *International Journal on E-Learning*: 8(4), 469-478.

Suzuki, K., Nemoto, J., Oyamada, M., Miyazaki, M., & Shibata, Y. (2009) "Upgrading an online master's degree program based on Story-centered Curriculum (SCC): A case study", *Proceedings of ED-MEDIA 2009*, 591-598.