

How can Teaching Practices of Higher Education be improved by ICT? An Ongoing MOE Comparative Research Project of Japan

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Abstract: The purpose of this short paper is to introduce an on-going research project in Japan for improving teaching practice through the use of ICT. The authors are from higher education unit of the MOE supported research project in 2009-2011. The current situation of Japanese higher education is first introduced, which will be followed by our investigation plan focused on introductory orientation effort for the newly entered students. We would like to report our results from the first year review as to how teaching practice at higher education can be connected with more advanced teaching practices in elementary and secondary education, as well as the roles of ICT for the improvement of higher education teaching.

Introduction

In 2003, when Economist Intelligence Unit Limited and IBM Corporation announced that Japan was the 23rd in the world in “e-Learning Readiness Ranking” (https://www-304.ibm.com/jct03001c/services/learning/solutions/pdfs/eiu_e-learning_readiness_rankings.pdf), it was of great shock to those who were in the field of e-Learning in Japan. We knew at that time, that Japan was not a leading country, but nobody was realized it could be judged as low as the 23rd. In the same Ranking, South Korea was the top of Asia (rank 5), followed by Singapore (rank 6), Taiwan (rank 16), and Hong Kong (rank 19). Malaysia was ranked the 25th, just after Japan. More recently, The Networked Readiness Index 2008-2009 of World Economic Forum (Dutta & Mia, 2009) reported that behind 4th-ranked Singapore, five other Asia and Pacific region’s economies place in the top 20 as follows: Korea (11th), Hong Kong (12th), Taiwan (13th), Australia (14th), and Japan (17th). This report provides an interesting observation regarding why Japan has not been catching up with the rest of the Asian countries:

Japan boasts undeniable prowess at leveraging ICT and innovating, as reflected by the level of business readiness (11th) and usage (4th), individual usage (13th), and the number of per capita utility patents (3rd). However, ICT readiness remains impaired by several regulatory, administrative, and infrastructural shortcomings. Furthermore, the rating of government readiness (25th) and usage (34th) has plummeted, the result of a sharp fall in the measures of prioritization, promotion, and procurement of ICT. (p.19; underlines added by the author)

On the other hand, teaching practices and culture of teachers in Japanese schools has been attracted much international attention. Lesson study is of particular interest among teacher educators (e.g., Fernandez, 2002; Lewis, et al, 2006). High rankings of Japanese students in various international comparison studies (e.g., TIMSS2003 and PISA) have also been a major source of the interest so that many international scholars have tried to find a way to “import” the secret of Japanese education. Contrary to these attentions, many Japanese researchers and administrators are concerned why Japanese are not performing well enough, as compared to the past. In depth investigation should be in order to reveal the current situation of Japanese education, especially as it is related to Information and Communication Technology (ICT).

Ministry of Education, Culture, Sports, Science and Technology Japan (MOE) of Japan approved a group of 16 researchers representing the Japan Society for Educational Technology to conduct a thorough investigation of teaching practices in elementary, secondary, and higher education. The project is being conducted under the title of *Integrated Study of Revision and Development of Teaching Methods in Primary, Secondary, and Higher Education*, with Grant-in-Aid for Scientific Research (S), 2009-2011, headed by Prof. Yoshizaki of Nihon Women's University. The aim of the project to reveal characteristics of teaching practices of Japanese elementary, secondary, and higher education. Site visits of domestic and overseas schools will be carried out so that viewpoints and clues will be discovered to revise and develop teaching methods.

The project team consists of 5 subgroups (or Units): (1) Overall Supervisor Group, (2) Elementary School Group, (3) Junior-high School Group, (4) Senior-high School Group, and (5) College and University Group. The authors of this paper are in the 5th Unit that covers higher education. The project has set comparison framework as shown in Figure 1: Elements in teaching, comparative studies, and layers of school categories. Each group is currently undergoing school visits and reviews of related literature, with the framework in mind.

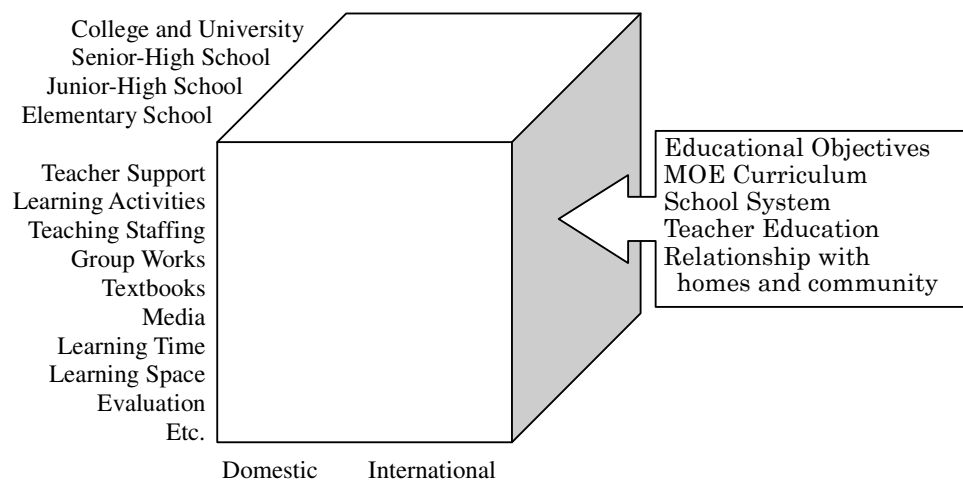


Figure 1: Research Framework for Comparative Research Project

Current Situation of Higher Education in Japan

Japan has about 750 universities and colleges, 580 of which are private. Many have been suffering from smaller number of applicants due to decline of 18 year-old population, with 1.25 children is born in 2008 per a couple. As the result of smaller numbers of applicants each year, 69.1 % of private universities could not fulfill their capacity enrollment for FY 2009, as reported by The Promotion and mutual aid corporation for Private Schools of Japan. With the prospect of the upset of demand-supply relationship in 2009, which means all high school graduate wishing to move on to college can enter a university or college, much attention has been given as to how to attract high school graduates by providing a better quality education.

MOE was under the strict control for enforcing standard curriculum for all higher education institutes and for establishing a new university or a new faculty (program) within an existing university. However, the policy was changed in 1991 and 2003, when MOE deregulated the restriction of curriculum and capacity of student enrollment. Since then, each individual institute would be able to take a responsibility of creating unique educational programs at its own risk. Although MOE still enforces rigorous procedure for approving expansion/establishment of new university or program, it is more or less shifted whether or not a university maintains to be attractive for high school graduates depends on the effort of the institute.

While MOE became less restrictive in the construction of higher education programs, the new approach in maintaining the quality are now enforced from operational perspectives. In 2007, MOE set a new standard enforcing external review process of all higher education institutions every seven years. Organizational system in faculty development has also been adopted as a requirement for all undergraduate programs starting in FY 2008. Therefore, more and more interests have been aroused among higher education institutes for advancing the quality of educational practices.

So, teaching in higher education is becoming a more difficult job. According to a survey by Japan Universities Association for Computer Education in 2008, with responses of 21,797 fulltime faculty from 334 private universities, 56.3% answered the most difficult aspect of teaching is the lack of basic knowledge of the students. The second was the lack of motivation of the students (37.2%). On the other hand, a small scale survey of freshmen (412 answered) by a private company (Just Systems, Inc.) revealed the most unsatisfactory element in their university life was the unexpected quality of lectures (21.1%). The major reasons for their lack of satisfaction were “not interested content” (42.7%) and “one-way lecture style” (32.5%).

As for e-Learning in higher education in Japan, we have much more to go than we have accomplished. According to *Annual Reports of ICT in Higher Education 2008* (NIME, 2008), over a half (51.1%) of Japanese universities answered that they are using e-Learning. The growth over five years of the ratio of introduction of e-Learning is as shown in Figure 2. It is still low, compared with other advance countries. However, when asked if e-Learning is for awarding credits, the situation becomes worse. The ratio of universities awarding credits by e-Learning was 20.7% only. Even if the universities planning for awarding credits (4.4%) are added, only a quarter of the universities are for e-Learning as a means of official channel of their program.

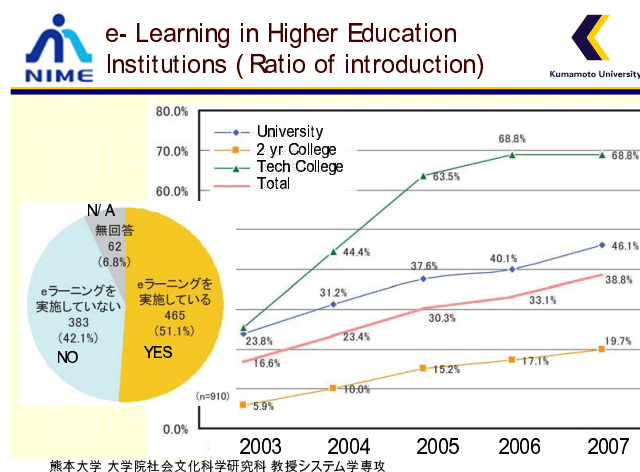


Figure 2: Ration of Universities introduced e-Learning (NIME, 2008)

Research Agenda for the Higher Education Unit

The higher education subgroup of the MOE approved research project consists of three researchers, listed as authors of this paper, each from different institute. To fulfill the purpose of the research project, we decided to focus our initial effort to investigate introductory orientation effort among universities, from the viewpoints of active learning and learning commons. Many of the universities are claimed to have less prepared students, because of weaker competition for entrance examination. Thus it has been a major problem as to how to provide a bridging training to make the new comers ready to learn from existing curriculum. Traditional approach within higher education must be reconsidered to accommodate changes in characteristics of coming freshmen to make their first exposure more active and interactive.

We see a great need in this area for utilizing ICT to make the effort more effective and flexible. For example, based on the University of Tokyo's goal of an ideal liberal education, the Komaba Active Learning Studio, or KALS (<http://www.kals.c.u-tokyo.ac.jp/english/index.html>), was created as a model classroom on the university's Komaba campus. Equipped with state-of-the-art information technology, KALS offers classes tailored to many types of active learning, including discussions, group work, and presentations. Future University (FUN)-Hakodate (<http://www.fun.ac.jp/>) was created as a learning organization to break the mold of traditional knowledge acquisition model of higher education. The entire university was designed with the principles of learning without walls in open spaces, no course barriers by project-based learning, no personal barriers by cooperative learning and team teaching, no language/communication barriers by emphasis on communication skills, and no age/learning style barriers to accommodate diversity of learners. Students are regarded as the center of learning and as apprentice researchers, while portfolio was regarded as the central means to measure their achievement.

We are currently involved in multiple means to investigate this issue. The methodology includes (1) Literature reviews of related articles, (2) Site visits and interviews with faculty and students, and (3) creating a framework for the structure of comparative study with international and primary/secondary education.

Concluding Remarks

We expect that there are commonalities and differences between Higher and Primary/Secondary Education. Responsive divisions are different within MOE. No teacher licenses are needed to teach at higher education institutions. More emphasis has been placed in research record than good teaching. However, one can look at the situation of Japan, normally viewed as hardship for the faculty, as an opportunity to seek and implement better teaching with a help of ICT. It is our hope that we can find a way to contribute for the improvement of teaching in higher education, in Japan and in other countries with similar environmental situations, through the outcome of our research. We are looking forward to sharing our project to learn from each other, which we hope give us stimuli to advance our research project.

References

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