

MOOCs and a Greater Synthesis at Kyoto University

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Abstract. This report reviews my work and research conducted as a Visiting Professor at the International Research Unit of Advanced Future Studies. During this visit, I spoke at length with Prof. Masatoshi Murase regarding his research and teachings involving his five major principles that might relate to essential, recursive aspects of life. I also spent quite a bit of time reviewing Kyoto University's MOOCs, their studios, and their approach to MOOC-making. The result of my analysis was that Kyoto University appears to have spent tremendous sums in developing an excellent MOOC-making facility, with very little to show for it by comparison with the investments being made by other world-class universities. Future collaboration possibilities with Kyoto University are also outlined.

Keywords: (within 5 words) MOOC, education, focused, diffuse, learning

Personal Note

I wish to express my gratitude to Professor Masatoshi Murase and the International Research Unit of Advanced Future Studies for their kind support during my visiting professorship. It has been a tremendous pleasure to learn of the great work of the Unit, and of Kyoto University as a whole.

1. Scientific Activities

My research as a Visiting Professor at the International Research Unit of Advanced Future Studies was conducted from June 1 through June 28th, 2017 in collaboration with Professor Masatoshi Murase. During this month, I had the opportunity to have many fruitful discussions with Prof. Murase about the scope of his own work in broadening interdisciplinary research. There are ties between his work and my work in education. Specifically, Prof. Murase's work involving expansion and contraction have an interesting correlation with focused and "diffuse" modes of learning, which may ultimately relate to the somewhat different functioning of the left and right hemispheres of the brain. (Gazzaniga, 2005; McGilchrist, 2010) Prof. Murase's methodology involving his five major principles that might relate to essential, recursive aspects of life is intriguing. I found that Prof. Murase's efforts towards broadening the intellectual sweep of individual research through providing broad insights into the work of other researchers to be very stimulating.

2. Technical and Education-Related Activities

2.1. General Context

My own research and education efforts center around the fundamentals of learning, and about how to upgrade online learning that is done at a massive scale. (See eg Oakley, 2014; Oakley, 2017; Oakley, *et al.*, 2016) My background in this area is that I have created, together with Terrence Sejnowski, the Francis Crick Professor at the Salk Institute, the world's largest and most popular MOOC (massive open online course), with nearly two million students. This MOOC, titled *Learning How to Learn*, (<https://www.coursera.org/learn/learning-how-to-learn/>) is taught through the University of California, San Diego. I have also created or am in the process of creating several other MOOCs through McMaster University (Hamilton, Ontario, Canada).

2.2. MOOC-making at Kyoto University

On Jun 14th, 2017, I gave a talk about the future of MOOC-making for the Graduate School of Informatics in Kyoto University in conjunction with the International Research Unit of Advanced Future Studies. This talk provided insight for the greater Kyoto University community into how MOOCs can be made that are not just the bland fare that is typical in today's MOOC-making world, but which are instead popular and "sticky" courses that grow by virtue of excellent word-of-mouth. Although representatives from the MOOC-making group at Kyoto University did not attend my talk, after the talk was finished, I had the opportunity to go over and see Kyoto University's MOOC-making facilities, where I was given a description of the MOOC-making activities at Kyoto University.

Kyoto University currently has six active MOOCs. I noted that during the description of Kyoto University's MOOC-making enterprise, there was no discussion of the number of students enrolled in Kyoto's MOOCs, which calls to question the viability of these MOOCs in expanding Kyoto University's international outreach in a way that is competitive with other universities of international stature. Kyoto University has obviously poured a good amount of money investing in their MOOC studio, but it seems they are not realizing the type of gain they should be getting from this investment.

Realistically, in my opinion, Kyoto University faces a challenge if they continue to create MOOCs that are along the same "me too" lines as the largely science-oriented MOOCs made at other world-class universities, such as Harvard, Stanford, Yale, and Princeton. This is because the accents of instructors at typical US, Canadian, UK, or Australian universities are easier for many learners to understand than the accents of typical Japanese-based speakers of English. Therefore, when faced with a choice of a typical science-oriented MOOC from Stanford, say, versus one from Kyoto University, learners will tend to select the science MOOC with the easier-to-understand accent. In other words, Kyoto University's MOOCs will be selected against when they are competing in the arena of typical science-based MOOCs. In business terms, Kyoto University is choosing to compete in the "red ocean"—that is, the highly competitive areas where it is very difficult to stand out, rather than the blue ocean of truly novel content. (Kim and Mauborgne, 2014)

In my opinion, Kyoto University does not appear to be capitalizing on one of its greatest strengths—the worldwide interest in Japan and Japanese culture. Kyoto University, in other words, is discounting its potentially greatest source of strength in MOOC-making. It's clear that people worldwide could have a substantive interest in MOOCs covering the following topics:

- Zen Buddhism
- Manga (This content could benefit from drawing in ideas from classic hero literature, eg Joseph Campbell's *The Hero with a Thousand Faces* and *The Power of Myth*)
- Japanese gardening
- Great Japanese movies/directors
- Great Japanese literature/writers
- Great Japanese musicians

- Japanese history
- Japanese language

If an instructor were to have a Japanese accent when teaching any of the above topics, it would be expected by learners, and hence not a liability. A strong showing by Kyoto University of MOOCs related to Japan would inevitably draw interest worldwide to Kyoto University's other MOOCs, building the potential for larger audiences involving more science-oriented and other MOOCs that might showcase the research-related expertise of academics at Kyoto University.

It is worth pointing out that many universities worldwide are generally oriented in their "in person" classes towards the typical "in-person" student demographic of 18- to 24-year-olds. When it comes to MOOC-making, however, it is a better idea to orient the teaching towards 18- to 85-year-olds, which is the real underlying demographic of MOOC audiences. At present, Japan has a "MOOC-taking" percentage of the population that is much, much smaller than that seen in most other industrialized countries. Kyoto University could be taking the lead in growing the percentage of individuals that are taking MOOCs, and thus in helping to provide outstanding opportunities for improving career training for those who are currently in mid-career, as well as in providing outstanding opportunities for older individuals to "up" their mental game by remaining intellectually stimulated.

On a side note, it should be noted that high production values do not necessarily correlate with the viability or popularity of a MOOC. One prestigious US institution, for example, invested \$2 million USD in producing 8 MOOCs, only to find that over the course of several years, only some 300 hundred students took the MOOCs. Despite the high-quality videotaping equipment available in the Kyoto University MOOC-making studio, there is little sign that the MOOCs being made by Kyoto University follow best-practices in MOOC-making, with careful attention to exciting video-editing processes. (See Oakley, *et al.*, 2016).

Moreover, Kyoto University, unlike the University of Tokyo, uses edX as their single MOOC provider, which has much less visibility than Coursera. This means that Kyoto University's MOOCs have much less chance of being seen by large numbers of students than the University of Tokyo's MOOCs. There is much less "bang for the buck," as we North Americans say, in relation to the amount of money and effort that Kyoto University's MOOCs.

3. Presentations in affiliation with the International Research Unit of Advanced Future Studies

While at the International Research Unit of Advanced Future Studies, I had the opportunity to share in five different presentations:

- **Wednesday, June 14, 2017:** "MOOCs Are Like Dating, Classes Are Like Marriage: Lessons from Teaching the World's Largest MOOC" Graduate School of Informatics in Kyoto University and the International Research Unit of Advanced Future Studies.
- **Saturday, June 17, 2017:** "Learning How We Know," Mie Symposium 2017 Program, Mie Prefecture.
- **Friday, June 23rd, 2017:** Presentation and discussion in Prof. Murase's class regarding the essentials of human nature.
- **Saturday, June 24th, 2017:** Review of work during my visit to Kyoto University, Panasonic Hall, Yukawa Institute for Theoretical Physics
- **Wednesday, Jun 28th, 2017:** "MOOCs Make It Happen: Learning How to Learn," University of Tokyo, in Tokyo, in conjunction with and the International Research Unit of Advanced Future Studies. Prior to the presentation, I spoke at great length with the University of Tokyo's MOOC-making team about how to improve their MOOCs and get wider distribution. We talked about future collaborative opportunities with some of the online universities in Japan. The University of Tokyo's MOOC-making team, it should be noted, is quite advanced

and very open, receptive, sharing, and communicative involving improved approaches to MOOC-making.

These presentations provided an opportunity for me to share about areas that might be of potential future use to Kyoto University. They also provided a good opportunity for me to learn of some of the interesting work that is going on in Japan regarding various aspects of learning.

4. Future collaboration possibilities with Kyoto University

It could be very worthwhile for Kyoto University to hold an international symposium or conference on MOOC-making. It might be fruitful to explore a collaboration on such a venture.

I have benefited greatly from Professor Murase's generosity in providing mechanisms for discussions and interactions involving experts from many different disciplines. It would be beneficial for my own work to continue these insightful discussions.

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