



Paradoxes between Personalisation and Massification

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Abstract

New initiatives such as MOOCs (Massive Open Online Courses) have been attracting tremendous media attention in the last couple of years. MOOCs are those online courses in which thousands of learners regardless of their geographical locations and institutional affiliations register without any fees (so far) and complete the courses within a pre-determined period of time with a possibility of certification. It is not a completely new idea, but it has attracted lots of attention recently because many so-called elite universities in the U.S. have started offering them. It is well known that MOOCs have two forms: cMOOCs and xMOOCs. The first MOOC was offered by George Siemens and Stephen Downes in Canada and it was cMOOCs. cMOOCs are those that base their pedagogy on the philosophy of connectivism while xMOOCs are more behaviouristic (Daniel, 2012). In a sense, original cMOOCs are very innovative in their practices and implementation of the new pedagogy while xMOOCs are the replica of outdated computer-assisted instruction. Those MOOCs that are hyped in media up to now are mostly xMOOCs that rely primarily on "information transmission, computer-marked assignments and peer assessment" (Bates, 2012). It is interesting to recognize that pedagogical paradigms have shifted from behaviourist to cognitivist, and then to constructivist throughout the history of e-learning, the pendulum has now been swinging back to the early days of behaviourism. Despite the promise of personalisation and customisation of learning with the use of new technologies, the technologies have actually been started to be utilized for massification of learning. In this paper, the apparently paradoxical promises new technologies seem to offer; namely personalisation and massification, are discussed and the possibilities of their interplay are explored.

1. Introduction

Since the introduction of e-learning, it has been touted that the technology should be used to personalize learning so that learners of diverse backgrounds, prior knowledge, learning styles, learning preferences, skills and competencies, work/life conditions, etc. can learn in the most effective way according to their needs. However, the implementation of personalized learning environments has still not been actualized in practice as indicted by Pange and Lekka [1]. Furthermore, decades after the introduction of computers and the Internet, educational institutions seem going in the direction which may be considered moving back to the old days of mass education.

Massive Open Online Courses (MOOCs) have been attracting tremendous attention not only from educational technologists, but also from general stakeholders in higher education institutions worldwide. They have been touted as a way to transform higher education and expand access [2]. According to McAuley, Stewart, Siemens, & Cormier [2], "a MOOC integrates the connectivity of social networking, the facilitation of an acknowledged expert in a field of study, and a collection of freely accessible online resources," and "builds on the active engagement of several hundred to several thousand 'students' who self-organize their participation according to learning goals, prior knowledge and skills, and common interests." The term, MOOC, was coined by Dave Cormier in 2008 [3].

Due to the popularity of the early MOOC experimentation, big players came in to start MOOCs often times in partnership with educational technology companies such as Blackboard, for free to anybody who wishes to enrol in. The examples of those big MOOCs are: Coursera, started by Stanford University, the University of Michigan, the University of Pennsylvania and Princeton University as founding members with a total of 62 other universities including 22 universities outside the U.S.; Udacity, by Stanford University; and edX, by Harvard University and MIT. Though early MOOCs were run by voluntary individuals for their research and experimental purposes and did not give any formal accreditation, the recent MOOCs mentioned above offer some sort of certificates for course completion. Another difference between the early MOOCs and recent big MOOCs is that recent ones tend to adhere to conventional pedagogies rather than experimental pedagogies such as connectivism. A blog post by Sui Fai John Mak on June 26, 2012, also distinguishes these two types of MOOCs as



old MOOCs and new MOOCs. Mak also has said that the old MOOCs take constructivist approach while new MOOCs take instructivist-behaviourist approach.

2. Business Models of MOOCs

The sustainability and viability of business models of those MOOCs initiatives are still uncertain. All of those initiatives so far offer the courses for free to all the registrants. In terms of its funding, Coursera and Udacity have gotten its funding from venture capital firms, and edX got its funding from its parent universities, Harvard and MIT, both of which have deep pockets in comparison to other universities.

Coursera touts itself as being designed based on sound pedagogical foundations on its website, and lists five principles: “the efficacy of online learning,” “the importance of retrieval and testing for learning,” “mastery learning,” “peer assessments,” and “active learning in the classroom.” In terms of peer assessments, Coursera does it by utilizing the method of crowd-sourcing.

Udacity, a Silicon Valley start-up, so far offers much smaller number of courses than Coursea; Coursea currently (as of March 2013) lists 92 new courses including some social science and humanity courses while Udacity does only 22 focusing mostly on computer science and mathematics courses. However, Udacity seems to offer what Coursea does not; in-person testing at one of 4,500 testing centres in more than 170 countries which Pearson VUE owns, and for-credit courses in collaboration with San Jose State University. edX just began offering some of its courses in January 2013 at two Massachusetts community colleges, in a blended format.

When the concept is still new and its publicity value is high, it can attract funding; however, it's doubtful to continue attracting it when the novelty factor wears off. MOOCs may be a reincarnated form of the Open CourseWare (OCW), the initiative started by MIT in 2002, which later spread many established universities around the world. The difference is that while OCW just has made courses made primarily for classroom teaching public, MOOCs are designed for online learning and also the recent MOOCs provide some certification to the learners who complete the entire course. Many initiatives of OCW at various universities have faced difficulties in sustaining their operations as they failed to secure funding.

The result of the survey conducted by *The Chronicle of Higher Education* in February, 2013 is quite astonishing, though. *The Chronicle* attempted to reach every instructor who has taught or plans to teach a MOOC, and got 103 responses out of 184 reached. Seventy-nine per cent of them thought MOOCs were worth the hype although 72% thought the students who succeed in the MOOC deserve formal credit. At least, those who have taught a MOOC seem to have reconsidered the value of online education even though many of them were tenured professors who had never taught online. Of course, the result has to be taken with care as only the enthusiasts may have responded to the questionnaire.

[2]

MOOCs can be leveraged to research how people learn by collecting a massive amount of data gathered from those who enrolled to take a course. At minimum, each MOOC platform gives instructors the ability to see data for knowing which methods and materials help students learn. Thanks to the increase of processing power and storage capacity of the computers, nowadays, so-called Big Data can be collected from the users. Now the whole learning experience of a learner can be logged and analysed.

Good evidence is reported as a result of the project led by the WICHE Cooperative for Educational Technologies (WCET) and funded by the Bill & Melinda Gates Foundation. The data were drawn from the students in 16 institutions in the U.S., resulted in 1,700,000 institutionally de-identified student records and 8,100,000 course level records according to its website. The project defined 60 variables informing retention, progression, and completion of their students [4]. The researchers of the project called it “Predictive Analytics Reporting Framework (PAR).” This project is a rare example of inter-institutional cooperation to share competitive information of the students. In February, 2013, the PAR project released full data definitions for the more than 60 institutional, transcript and student-level data collected from its 16 institutional partners. They are published using a Creative Commons license (attribution, non-commercial, share-alike) to encourage distribution among the research community.

Another notable initiative in U.S. related to student data definitions is Common Education Data Standards (CEDS). CEDS is a U.S. national collaborative effort to develop voluntary, common data standards for a key set of educational data elements to streamline the exchange, comparison, and understanding of data within and across different educational stages (early learning through postsecondary and workforce). Adoption of CEDS is voluntary and CEDS itself does not collect any



data. In January 2013, the CEDS version 3 was released and PAR is also attempting align itself with CEDS.

3. A New Model of Higher Education

As discussed, MOOCs may expand access to higher education by massification of online courses. However, I believe they represent only one part of the new model of higher education, which is a result of unbundling of higher education services. Many participants (teachers and students included) in MOOCs mentioned the need for some sort of supports to make the learning more effective to an individual. MOOCs are not the entire picture of this new model of higher education. Organizations and people involved in the new model of higher education are indicated in Figure 1. Contents providers, tutorial supports and facilitators, and assessment and accreditations can all be provided by separate organizations with a shared database of students. Contents providers are more likely to be the established universities or organizations who hire the academia from the established universities on a contract bases as they have already established their credibility in offering academic contents.

What is critical in this model is shared database of students. The shared database of learners allows personalization of the learning environment catering to the learner's needs and requirements, data mining for researchers to investigate how people learn, and quality assurance or quality enhancement for institutions to provide better contents, tutorial supports, and assessment strategies. It is also a learner-centred personalized model as learners can choose contents/tutorial supports/assessment according to their needs and preferences.

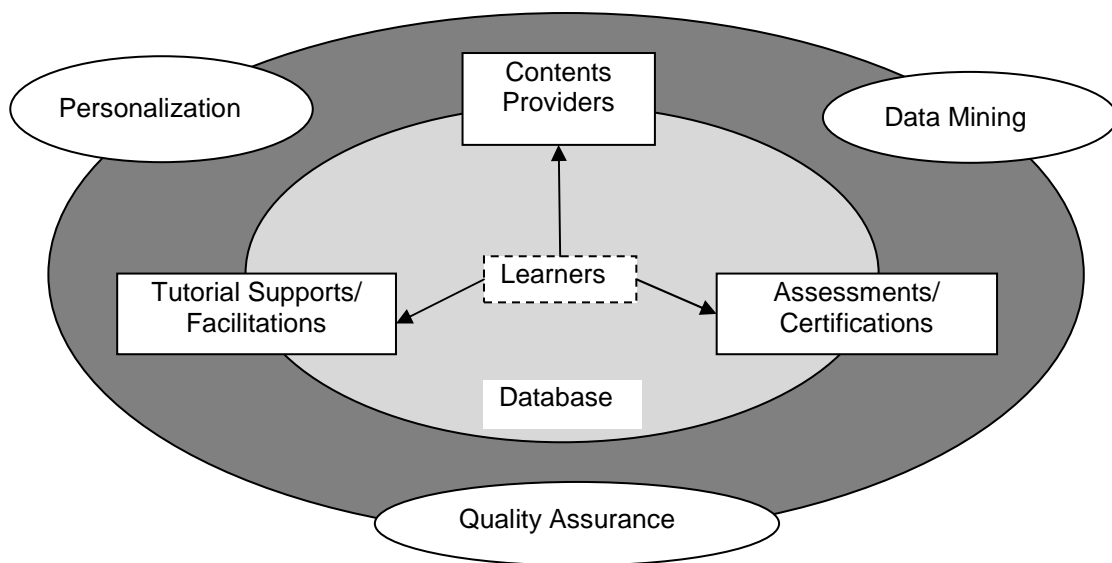


Figure 1. New model of higher education

This new model is a very flexible model as each organization specializes in one area of the whole learning process of students' learning. For a learner, the course design itself and the learning experience itself may not be that new as most online learning programs offer similar resources and activities though the diversity of learners may be somewhat limited. However, the advantage of this model is that the learner can choose contents, tutorial supports, and assessment methods as they like, and the organization can be flexible in offering a range of contents, tutorial supports, and evaluations/accreditations. In other words, learners can take control of where, when, how, what and with whom they learn.

Current MOOCs are largely "contents providers" and provide a bit of "facilitations" in this model. In addition, nowadays some of MOOCs also offer assessments and accreditations. As the number of participants in a course gets larger, the more difficult and challenging it becomes to organize proper facilitation and tutorial supports, not to say assessments and accreditations of learning outcomes. Actually it is argued that more structures and supports are needed to make MOOCs more meaningful



to a large number of participants [5]. As this model of higher education evolves, there will be more organizations and groups who specialize in facilitation/tutorial supports or assessments/accreditations.

4. Conclusion

The current popularity of MOOCs seem to push the pendulum of pedagogical innovation back to the early days of behavioristic mass education while it shows the potential of expanding access of higher education to greater masses regardless geographical locations and national boundaries. This massification of online education appears to go in an opposite direction to personalization that e-learning and use of ICT in education should aim for the purpose of providing more effective individualized learning experiences to learners. However, it is still the early stage of massification of online education. And, the author predicts that eventually the higher education institutions will be categorized and the labor of providing the whole educational experiences to learners will be divided among multiple institutions, each of which focuses on one or more specific areas of higher education provisions as indicated the new model of higher education. The main areas of higher education provisions are: contents providers, tutorial supports/facilitations, and assessment/certifications with the possible help of for-profit companies. With the vast amount of data gathered through learners, personalization will become possible eventually with proper learning analytics and data mining. Furthermore, quality of learning outcomes may be further assured with the evidence of learning. It is still a very complex and challenging task to figure out all the useful variables and data definitions to make an effective use of such data; however, with the advancement of computing powers and the spread of shared interests towards better learning environments for students, will make that happen eventually.

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