Timotius Sitorus

Professor Suver

CSE 300

29 March 2016

MOOCs: A Survey of the Students

Massive Online Open Courses, or MOOCs, are courses where students participate through materials dispersed through the web. Materials often consist of video lectures, readings, problem sets, and online quizzes and tests. Many MOOCs also provide interactive forums or discussion groups to help students. Due to their increasing popularity and ease of access, most MOOCs are aimed at large-scale participation. Some notable distributors of MOOCs are Coursera, Khan Academy, Udacity, and EdX with universities such as choosing to directly distributing their own courses as MOOCs. Although the design of MOOCs parallel that of the tradition college course, and are most often created by universities, most typically do not offer credit awarded to students. However, there has been an increasing trend in MOOC companies to offer certification. Many advocates of MOOCs point to their ease of access and increasing number of courses and students as a sign of a revolution with the education sector. The dream that people from any background, even third world countries, can gain access to the quality education from top universities have propelled support for MOOCs tremendously. The following literature review is an examination the characteristics of the students to whom MOOCs have appealed to thus far.

Although MOOCs have been widely available across the globe, the level of participation are extremely skewed towards certain countries. DeBoer, Stump, Seaton and Breslow conducted a study regarding the diversity in MOOC students' background (DeBoer et al. 2013). They

conducted this research by surveying students of "6.002x: Circuits and Electronics", the first massive open online course offered by MITx (which later became EdX). The researchers found that although students logged on to the site from nearly every country in the world, only twelve countries, most of which are large western countries, individually account for greater than 2% or all participants. Most other countries have less than one hundred participants each. In addition, the researchers found that the majority of participants were highly educated with 36.63% having Bachelor's degree and 27.87% having a Master's or Professional Degree. Christensen, Steinmetz, Alcorn, Bennett, Woods, and Emanuel further supports this with their own research (Christensen et al. 2013). Through an online survey of students enrolled in at least on of the University of Pennsylvania's 32 MOOCs offered on the Coursera, they found that a staggering 83% of MOOC students they surveyed had a post secondary degree, with 79.4% of students having a Bachelor's or higher. In addition, Christensen et al. found that the students tend to be young, male and employed with over 40% being are under 30, 56.9% identifying as males, and 63.4% being currently employed or self-employed. The study also found that these statistics skew even further for BRICS countries (Brazil, Russia, India, China, and South Africa) and other developing countries, which in particular goes against the original concept of open education that was raised by MOOCs. Although these statistics might prove to be indicative of a large lack of diversity in regards to the students participating in MOOCs, there is may be some bias introduced due to which MOOCs were chosen for study, as DeBoer et al. focused on a highly technical MOOC and Christensen et al. chose only MOOCs by University of Pennsylvania.

The general interests of the students attracted to MOOCs also seem to converge. Studies have indicated that for many students, computer science courses have become the major subject being taught via MOOCs. The HarvardX Research Committee and the Office of Digital Learning

at MIT had collaborated to release a series of reports describing the first year of open online courses launched on edX, the non-profit MOOC platform founded by the two universities (Ho et al. 2015). By creating a network of sequential registrations of classes by students on EdX, the researchers found that computer science courses have become hubs to and from not only other CS courses but courses in other curricular areas. This may prove indicative of not only the impact that MOOC have had on computer science education, but also may provide a correlation between the growth of MOOCs and the increasing interest of the public in Computer Science. Either way, it's easy to see that the large majority of MOOC students have interest in Computer Science.

Lastly, motivation for enrollment in a MOOC among students have mostly come down to two distinct reasons. Christensen et al. found that nearly half of MOOC students report their reason for enrolling in a course as "curiosity, just for fun" while 43.9% report enrolling to "gain skills to do my job better". This result can sway depending on the course itself. For example, 74.6% of students specified that they took courses such as poetry, Greek mythology, or world music out of curiosity. Conversely 54.1% report taking social science courses to help with their careers (Christensen et al. 2013). This large percentage of people who take MOOCs from sheer curiosity is indicative of a trend within MOOC students. One of the primary concerns of critics of MOOCs are the low overall completion rated. Reich however argued that these rates are typically evaluated without accounting for student intentions. In his study Reich surveyed and log data from nine HarvardX courses to try and correlate completion rates to the students' intentions when participating in the course. What he found was that among the survey respondent, 22% of students who intended to complete the course, actually earns a certificate which is incredibly high when compared to 2 to 10% total rate of completion (Reich 2014). He

attributes this higher retention rate to students “shopping” around potential courses trying to find those that fit their curiosities. Koller, Ng, Do and Chen also found this to be true in their research (Koller et al. 2013). Instead of completion, Koller et al focused on lecture to lecture retention rates. They concluded that although there is a low retention rate in MOOCs, it is actually not a problem. They argue that the ease of non-completion in MOOCs can be viewed can be viewed as an opportunity for risk-free exploration. The student can explore different topics that they find intriguing and pick the ones that are a good match for their interests and skills, which ends up being the reason why there seems to be a majority of students that enroll in courses out of curiosity.

Massive Online Open Courses are quickly becoming the largest upheaval in education in modern times. Especially with the rapid expansion of the large MOOC distributors and the increasing number of partnerships between MOOC distributors and universities, MOOCs are increasingly becoming more prevalent in education. That being said, despite the promise of Open Education to everyone regardless of background, its safe to conclude that the majority of MOOC students are well-educated men, from western countries, are most likely interested in Computer Science, and are most likely taking classes because they’re curious. However, these findings may be the cause of the current focus that MOOCs and the studies shown have towards STEM (Science, Technology, Engineering, and Mathematics) related fields and western college students. Therefore, in order to fully scout the types of students that actively participate in MOOCs, further studies could be done with a focus in either how MOOCs have effect students in third world countries or the effects of MOOCs on non-STEM related fields, both of which may affect the current findings that was shown.

Works Cited

Christensen, Gayle, Andrew Steinmetz, Brandon Alcorn, Amy Bennet, Deirdre Woods, and Ezekiel J. Emanuel. "The MOOC Phenomenon: Who Takes Massive Open Online Courses and Why?" *Social Science Research Network*. N.p., 18 Apr. 2014. Web. 8 Mar. 2016.

DeBoer, Jennifer, Glenda S. Stump, Daniel Seaton, and Lori Breslow. "Diversity in MOOC students' backgrounds and behaviors in relationship to performance in 6.002x." *Proceedings of the Sixth Learning International Networks Consortium Conference*. Vol. 4. 2013.

Ho, Andrew Dean, Isaac Chuang, Justin Reich, Cody Austun Coleman, Jacob Whitehill, Curtis G. Northcutt, Joseph Jay Williams, John D. Hansen, Glenn Lopez, and Rebecca Petersen. "HarvardX and MITx: Two Years of Open Online Courses Fall 2012-Summer 2014." *SSRN Electronic Journal SSRN Journal* (n.d.): n. pag. Web.

Kady, Hitaf R., and Jennifer A., PhD Vadeboncoeur. "Massive Open Online Courses (MOOC)." Salem Press Encyclopedia (2013): Research Starters. Web. 8 Mar. 2016

Koller, Daphne, Andrew Ng, Chuong Do, and Zhenghao Chen. "Retention and Intention in Massive Open Online Courses: In Depth." *Retention and Intention in Massive Open Online Courses: In Depth*. Educause Review, 3 June 2013. Web. 9 Mar. 2016.

Reich, Justin. "MOOC Completion and Retention in the Context of Student Intent." *MOOC Completion and Retention in the Context of Student Intent*. Educause Review, 8 Dec. 2014. Web. 9 Mar. 2016.