

The Dynamics of Successful Teams in a Massive Open Online Course

Majd Alomar

Department of Curriculum and Instruction  
College of Education  
Kansas State University

**Abstract**

This paper explores the dynamics of teamwork in Dr. Chuck Eesly's course Technology Entrepreneurship, a Massive Open Online Course (MOOC). The purpose of the study is to discover patterns and characteristics of the students in teams that complete the course. Many studies have revealed that a very small percentage of students complete Massive Open Online Courses. This study aims to advise future MOOC students determined to complete a MOOC on how to successfully choose their team members by studying the dynamics of successful teams. A qualitative research method was utilized in the study. Data were collected from observing the MOOC platform and interviews with successful team members and leaders.

## **Introduction**

Massive Open Online Courseware is an online phenomenon that has been gaining popularity over the past two years. MOOCs incorporate the connectivity of social networking, the facilitation of an acknowledged expert in a certain field of study, and a collection of free accessible online resources. The number of participants in a MOOC range from several hundred to thousands of students who self-organize their engagement and participation by their learning goals, prior knowledge, and participation and common interests (McAuley, Stewart, Siemens & Cormier, 2010).

MOOCs share some aspects of traditional courses such as predefined timelines and weekly topics; also, they are facilitated by a knowledgeable expert (McAuley, Stewart, Siemens & Cormier, 2010). However, MOOCs in general are free for everyone and require only Internet access. Though they do not carry formal accreditation, experts are expecting MOOCs to be provided for university credit in the near future (Pappano, 2012).

A survey conducted on a MOOC provided by MIT's Dr. Agarwal revealed interesting results. It discovered that 63 percent of students who completed Dr. Agarwal's course as well as a similar course on campus found that the MOOC was better comparatively, 36 percent found them comparable, and only 1 percent found it worse (Pappano, 2012). Relatedly, the U.S. Department of Education found in a recent study that students learning online performed, on average, better than those learning the same material through traditional face-to-face settings (Means, Toyama, Murphy, Bakia, & Jones, 2010).

## **Literature Review**

In the time of rising education costs and decreasing budgets and government funding, MOOCs have the potential to generate changes in both higher education and online education. Advanced online platforms such as Coursera, edX, and Udacity are already attracting millions of students from all over the world. What makes MOOCs so successful is their social aspect. Students negotiate with their peers, work on collaborative projects, and meet others who share their interests and skills. To do this, students might use the MOOC's central social platform, or they may use social media sites such as Facebook and Twitter. Some create their own blogs and develop and maintain ties through these courses. According to McAuley et al. (2010), "the network negotiated is just as important as the topic covered, if not more so. Participation in a MOOC is emergent, fragmented, diffuse, and diverse" (p. 11)

### **Team-based Learning**

Team-based learning encourages students to collaborate and work in groups to achieve the same goals (Brindley, Walti, & Blaschke, 2009). In a collaborative learning environment, students work together to construct their knowledge by incorporating new information and skills into a learning community. Collaboration is described as a “process of shared creation: two or more individuals with complementary skills interacting to create a shared understanding that none had previously processed or could have come to on their own. Collaboration creates a shared meaning about a process, a product, or event” (Schrage, 1990, p. 40). Team-based learning is thought to enhance students’ skills on problem solving and their social interaction and communication; additionally, it fosters a positive attitude toward learning and critical thinking (Law, 2011).

### **Project-based learning**

Project Based Learning (PBL) is an instruction model that is related to Inquiry Based Learning and was developed by Piaget and Vygotsky. PBL is a combination of cognitive and social constructivist theories and focuses on collaborative learning. It teaches students “soft skills” as well as specific content and subject skills. Generally, PBL teaches students five skills: real-life problem solving, efficient problem solving, independent learning, self-monitoring, and teamwork. It encourages life-long learning and does not test the skill; rather, it assists in developing the skill.

### **Purpose of this Study**

Students who enroll in MOOCs are often very diverse. They come from all around the world with different languages, backgrounds, age differences, and levels of education. Hundreds and thousands of students enroll in these courses. The completion rate for MOOCs in general is usually less than 7 percent; as for MOOCs that involve peer assessment (which is the main method of assessment in Technology Entrepreneurship), it is estimated to be 4.8 percent, which is a far lower completion rate than the automatically-graded MOOCs (Parr, 2013). Due to the low retention rate, it is essential for MOOC students to understand how to choose their team members and how to build successful teams. This study will discover how successful groups are formed in a MOOC, and it will help me understand how to choose and form teams in the future, as well as help those who take MOOCs for professional development.

The following research question guided this study: What are the strategies, characteristics and dynamics of a successful team in a Massive Open Online Course?

### **Research Methods**

The researcher has chosen to perform the study on a MOOC platform offered by Stanford University. Dr. Amin Saberi and his PhD student Farnaz Ronaghi created a project called Venture Lab to offer Stanford courses for free to the public. Venture Lab has officially re-branded and re-launched as NovoEd. Not only does it offer courses online for free, but it also offers a platform that focuses on collaboration and project-based and team-based learning. So far the platform consists of 31 courses available to the general public as well as some private courses available only to Stanford students. The NovoEd platform in general is the focus of this study. Technology Entrepreneurship, a course that is available to the public, is observed in more detail.

The 37,000 students (from 150 countries) initially enrolled in this course offered some information about themselves: their country, language, background, skills, etc. The platform provides information about the students and teams on the course, including assignment submissions, latest activity, team name, team rank, team members, and endorsements, which are testimonials from other students who have collaborated on a project on the platform. Using this information I searched for high-achieving teams that worked together to complete the course.

I selected four teams that have completed the Technology Entrepreneurship course. Five students from these teams were interviewed. Four of them were team leaders, and one student was a team member. They were all high-achieving students who have completed the online course, and some have participated in other successful teams in other MOOCs. Table 1 (below) outlines additional information about the participants.

**Table 1: Participant Information**

Team #	Pseudonym	Job Title	Role in team	Gender	Major	Country	Participated in Interview
1	Bob	Lecturer	Team leader	Male	Marketing	Pakistan	Yes
1	Clare	IT Student	Active member	Female	Information Technology	India	Yes
2	Kyle	Entrepreneur	Team leader	Male	Computer Science	United States	Yes
2	Jack	Web Designer	Active member	Male	Computer Science	United States	No
3	Mark	Software Engineer	Team leader	Male	Computer Science	Pakistan	Yes
3	Mary	Teenager	Active member	Female	High School	China	No
4	Joseph	Graduate Student	Team leader	Male	Mechatronics Engineering	Pakistan	Yes

Inquiry about their willingness to participate in this study was sent to the students through the platform messaging service as well as email, and some students were contacted on Facebook and LinkedIn. The interviews were semi-structured. Three of the interviews were conducted virtually via Zoom, one was by email, and one interview was done using the Skype chatting service. The Zoom interviews lasted approximately one hour and were all video recorded. The Skype interview also lasted approximately one hour and included many follow-up questions.

The interview questions were:

Q1: How did you find out about this course?

Q2: What were your reasons or incentives for taking the course?

Q3: How did you choose your team members? What was your strategy?

Q4: There are many teams that drop out, but your team was successful; what are the tips or advice that you can give other teams to be successful?

Q5: How many people were in your team at the start? How many finished?

Q6: How many MOOCs have you taken? How many have you finished? How many MOOCs have you taken that involve teamwork and how many of them have you finished?

Q8: What was positive or negative about the course?

Q9: What was positive or negative about your team?

Q10: What are some things that you wish the team would have done better?

A qualitative research method was utilized in this study. Qualitative data are “detailed descriptions of situations, events, people, interactions, and observed behaviors; direct quotations from people about their experiences, attitudes, beliefs, and thoughts; and excerpts or entire passages from documents, correspondence, records, and case histories” (Merriam & Simpson, 1995). It focuses on the “significance, meaning, impact, individual or collective interpretation of events” (Wragg, 2012, p. 9). To obtain a better understanding of the events and happenings in the course and to give a more accurate description, two different qualitative data collection methods were used for this study: observation and interviews.

The research question was answered by systematically searching and organizing the interview transcripts, observation fieldnotes, and other materials gathered. A thematic analysis was conducted to code and analyze the data. The purpose of this analytical method was to synthesize data as a whole and to decide how much data supported emerging themes (Bogdan and Biklen, 2007).

### **Findings**

All participants’ responses to interviews and fieldnotes gathered to study their behavior were categorized into three characteristics: 1) competence; 2) experience and skill; and 3) determination and intrinsic motivation. All of the interview participants demonstrated passion for knowledge and high ambition, and they all set high standards for themselves and their teams. None of the students was taking the course for credit.

A pattern emerged with Bob, Mark, and Joseph that was not apparent amongst the others in the study. Firstly, they were all team leaders and all from Pakistan. They all displayed a unique passion for collaborative learning and an immense interest in MOOCs. Their motivation for enrolling in Technology Entrepreneurship was curiosity and interest, as well as a desire to work and learn in a collaborative environment. They had each completed more than 6 MOOCs, with Bob and Joseph even mentoring 2 MOOCs on NovoEd. Interestingly, they were very driven by the social aspects of this course. Mark states, “I like to work with people; I don’t like to work on my own.” He further explained that he had signed up for many Coursera courses but did not complete any of them: “I didn’t like them because I felt like I’m on my own taking lectures and I don’t like that way of learning.”

Both Bob and Mark expressed that when they started taking MOOCs, they led their teams. However after their first couple of courses they started to join other teams and contributed

as team members instead of taking charge and managing the team. All of these team leaders expressed their appreciation for the diversity within the course. Mark states, “It’s like living in a global village.” They all collaborated with a very diverse range of team members throughout the course.

Kyle, the leader of Team 2, signed up for the course because he was aspiring to expand his IT consultancy business. This course gave him the knowledge in Business and Entrepreneurship that he believed would help him succeed in his career. He met his team member Jack on the platform and they both contributed greatly to the project. Their team started with six students and four finished. Kyle, the team leader, states, “I sent an email to my team members after the first set of no-show meetings and lack of cooperation and got a follow-up email from every member stating that they were in and on the team for the long haul and they would be present at the next meeting but two of them did not show.” “One of them was auditing the course,” Kyle said. When asked when this happened, he said, “about halfway through the course.” The two members who did not attend the next meeting were then dropped from the team due to their lack of cooperation. Kyle has contributed the most to the course projects and was satisfied with Jack’s contribution: “I knew there was at least one other person with me on this course. He was as he said he was in it for the long haul.” He was not pleased, however, with the other students’ commitment to the course.

In Team 3, 15 people were on the team at the beginning and only 8 finished the course. Mark explains that starting with a large team is a clever plan to decrease the workload for the students on the team, and his plan appears to work as many members on his team complete the MOOC. However, Mark expressed, having a team that is too large is not always recommended because it makes it very difficult to come up with a good time for meetings. The difference in time zones makes it nearly impossible for everyone to attend a meeting. His team decided to record their virtual meetings for the members that could not attend so they could watch them later. The students who were not able to attend still contributed to the projects.

### **Strategies for Choosing Team Members**

Kyle’s strategy for choosing members was to make a list of active students who have the skillset that he was looking for and invite them to join the team. He looked for students who live in the United States and not abroad. The reason for this is to manage the time zones; as he explains, “I did not want to have someone waking up at the middle of the night to attend a



meeting.”

Bob, Mark, and Joseph’s strategy was to make the team as diverse as possible. “I had five different countries on my team,” Mark exclaimed. “The international exposure of working with these people was very beneficial.” “Also we get different points of views when we’re working with people from different countries.”

Another important factor in choosing team members according to Mark and Bob is age. Interestingly, they have contrasting views as to the right age of the participants on the team. Bob expressed that most of the students who drop out are young people. He clarifies that “senior members,” or members that are older in age, are more likely to succeed and complete the course. Mark’s experience was very different. The student who contributed the most to his projects was Mary, a high school student in her mid teens. He explained, “She had video editing skills that nobody else had. She had done some work on animation and did some animation work for us. She had a lot of time on her hands so she was very active in the course.” Mark collaborated with her on many projects on other MOOCs. He reveals that there were many teenagers on the courses that he had taken.

### **Implications for K-12 Students**

MOOCs seem to be making a difference in the amount and quality of education that the younger generation will gain. It is already happening. The opportunities that MOOCs provide for high school students are highlighted by Mary’s experience on NovoEd. Mark describes this experience:

For example, Mary participated in Crack it, a competition organized by an advertising society in Pakistan. So I know Mary from NovoEd and I asked her are you interested in participating in this competition and she participated with me in Crack it. I was here in Karachi and she was working with me in her home in Hong Kong.

Even if they do not win in the competition, the amount of knowledge and information that this high school student is exposed to and the opportunities that are opened up for her are truly empowering. Mark discusses another project that the two of them were working on together:

She was working with me on a business plan for a mobile app. The only way that she could contribute to the business plan was because of the other courses that she took on NovoEd, ‘Decision Thinking’ and ‘Crash Course on Creativity’. These courses prepared

her to contribute to the business plan and participate in these competitions where most of the people who were participating were graduates. Some of these teenagers are taking MOOCs very seriously and they are adding a lot to it.

### **Mentors**

The only team that had mentors for their team was Team 3. Mark reveals that they have contributed very little to their work because mentors themselves are very busy people. He explains his impression of mentors and students' contributions: "From my observation everyone is active on the first week of the course. You can't judge how good your team is from the first week. But once the first week has passed once you submit your first assignment. Afterwards people start becoming inactive and after the third week you're on your own."

### **Certification**

Many people enroll in MOOCs for certifications they offer. However, there are conflicting views on the value of these certificates. The certificate for Crash Course on Creativity, another Stanford MOOC, was observed and the following was imprinted on it:

Please note: Some online courses may draw on material from courses taught on campus but they are not equivalent to on-campus courses. This statement does not affirm that this student was enrolled as a student at Stanford University in any way. It does not confer a Stanford University grade, course credit, or degree; and it does not verify the identity of the student.

The participants were asked about their views about this, and Mark responded, "when you have a certificate that states that it is from the teacher and not from the university and that they have not confirmed your identity. This certificate is null and void." Mark recommends taking these classes to learn something new but not for the certification.

### **Discussion**

Most of the students who participated in the interview seemed to enjoy their experience with team-based MOOCs. Kyle seemed frustrated by the lack of contribution from some of his team members; however, he expressed a determination to complete as many MOOCs as he needed to achieve his purpose.

All of the team leaders in this study had a systematic plan in place for dealing with inactive team members, and their plans were surprisingly similar. They all recommended removing inactive team members if they did not cooperate or respond to emails. Mark

recommends starting with a large team, around 8 or 9 members, so if the team loses 3-4 members, the workload would still be manageable as there would be at least four active members.

The course is designed to replicate a real life experience that requires collaboration, teamwork, submitting projects in a timely manner, and communicating effectively with a very diverse range of people. One of the things that became instantly apparent while observing the course was the professionalism of the team leaders in the teams that finished the MOOC. The team members' dedication and commitment to the course was also evident. They all appeared to be highly motivated students who were following personal interests and driven by intrinsic motivation. Their management and collaboration skills are exceptional and replicate what is needed to manage a successful project in real life.

Some of the students were working professionals who were interested in a career change and saw this as an opportunity to search for their interest. Many others had graduate degrees in Engineering, Business, Economics and so forth. There was also an interesting trend of "serial MOOC takers." Some students enrolled in every free MOOC available on NovoEd and successfully finished it. These courses are equivalent to senior and graduate level Stanford courses. Although they are not accredited as such, they still require as much work and effort as many campus courses.

### **Strategies and Recommendations**

Some advice and guidelines have been gleaned from the observations and interviews of these successful students' experiences.

- 1- Leading a team involves sustained work and effort in the project. If the student does not have enough time to dedicate to a MOOC, then join a team as a member instead of as a leader.
- 2- Search for the teams that are open and know the team size limit. This is so as not to waste time on contacting teams that have reached the limit and cannot add any more students.
- 3- Search the journals. Usually if a team has many recent journal entries and there are multiple members contributing to the journals then they are likely to be an active team.
- 4- Contact three or four teams; doing so is more likely to get an answer.

- 5- Make sure the workload is manageable. Do not take too many courses and then end up not finishing them.
- 6- Be prepared for every kind of person. Keep in mind that the platform is open and free and although most people are serious and have good intentions, some do not.

The courses are excellent if the student's purpose is to learn something new or meet new people with diverse skills. However, the courses are not accredited and the certification are currently useless.

### **Conclusion**

This study followed four successful MOOC teams and studied their characteristics, dynamics, and strategies for successfully completing a MOOC. MOOCs have enabled people to follow their interests and learn anything and everything from the best universities in the world. The subjects are as diverse as music, story-telling, entrepreneurship, mathematics, Computer Science and many more. The diversity of the students and the social aspects of these courses as well as the quality of education provided are very empowering.

## References

- Bogdan, R.C., & Biklen, S.K. (2007). *Qualitative research for education: An introduction to theory and methods* (5 ed.) Boston: Pearson.
- Brindley, J.E., Walti, C., & Blaschke, L.M. (2009). Creating effective collaborative learning groups in an online environment. *The International Review of Research in Open and Distance Learning*, 10(3), 1–18. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/675/1271>
- Law, Y. (2011). The effects of cooperative learning on enhancing Hong Kong fifth graders' achievement goals, autonomous motivation and reading proficiency. *Journal of Research in Reading*, 34(4), 402–425. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-9817.2010.01445.x/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false>
- McAuley, A., Stewart, B., Siemens, G., & Cormier, D. (2010). *The MOOC model for digital practice*. Retrieved from [http://www.elearnspace.org/Articles/MOOC\\_Final.pdf](http://www.elearnspace.org/Articles/MOOC_Final.pdf)
- Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). *Evaluation of evidence based practices in online learning: A meta-analysis and review of online learning studies*. U.S. Department of Education.
- Merriam, S. B., & Simpson, E. L. (1995). *A guide to research for educators and trainers of adults* (2nd ed.). Malabar, FL: Krieger.
- Pappano, L. (2012). The year of the MOOC. *The New York Times*, 4.
- Parr, C. (2013). Not staying the course. *Times Higher Education*.
- Schrage, M. (1990). *Shared minds: The new technologies of collaboration*. New York: Random House.
- Wragg, E. C. (2012). *An introduction to classroom observation*. New York, NY: Routledge.