



EFFECTS OF MOTIVATION ON PERFORMANCE OF STUDENTS IN MOOC

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Abstract:

The paper is based on the view that a big number of students enrolled in online courses doesn't necessarily finish them and earn certificate. Specialized web sites such as Coursera, EdX and Udacity are getting more members each day, but number of people who attend courses is not getting higher. Question that was asked is what is motivational factor for people to enroll in these courses and what keeps them focused and oriented toward finishing them. The premise is that reason for engagement in online courses comes mainly from external factor i.e. expectations of subject social environment. This paper discusses differences between external and internal motivational factors, with emphasis on self-determination which subjects show in early weeks of attendance these courses, and which declines as the course proceeds toward the end and final exam which leads to receiving certificate.

Key words:

motivation,
online courses,
distance learning studies,
lifelong learning.

INTRODUCTION

Massive open online course is a model for delivering learning content online aimed to unlimited audience, at anyone with interest to take a course. Along with features available in traditional courses organized on universities such as videos, readings, case studies, these online courses offer interactive user forums (fora) that help building a community for students, teaching assistants, and professors. This forum environment, with an option of organizing live discussion sessions in various places where students from same countries are residing, which is only up to them, act as a supplement for the real teaching environment on universities and colleges. This may act as a selective membrane in which only students who are really into course material and area will show interest to take a part in these events, and eventually do so, thus eliminating other people of interrupting their meeting whether they take place online or in so called "real life" i.e. physical environment. In this sense MOOC are trying to eliminate potential communication problem and develop inside and outside circle of students, and that way combine best of two worlds, digital and physical. This has a very huge potential for high quality networking, based on same interests, profession, future career path, but as the most thing people get in touch with, this potential is not realized to its fullest.

In the early days of its establishment MOOCs often emphasized their open access features such as connectivism, open license to course content and similar. At the beginning all courses were promoting reuse of their resources, remaking of the course, and whole idea was touched with some kind of altruistic motivation toward making best courses on subject. As time passed by some newer courses started to forbid most of that stuff, and use closed licenses for their materials, but that still hasn't changed the fact that courses are available for free, at least to some point.

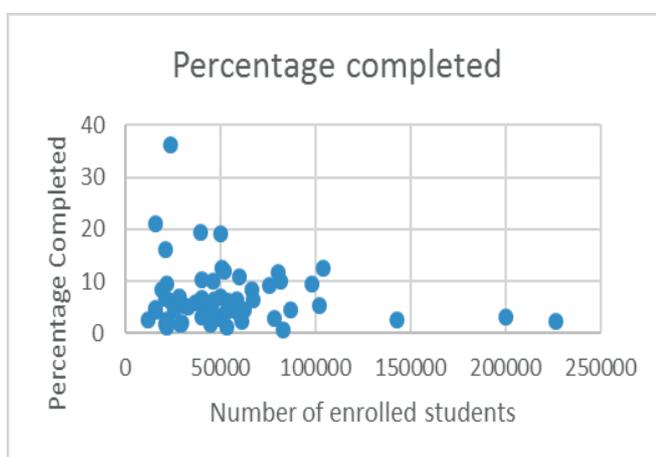
This crossroad in philosophy around MOOC have manifested in two tides one that is embracing connectivist philosophy and the other one that resemble more traditional one. That way in order for better distinguishing the two of them, Downes [1]. proposed the terms cMOOC and xMOOC. Important fact is that by orienting toward connectivism [2]. courses organizers are turning toward adopting social learning theory and putting it in practice. Social learning theory proposes that people learn through contact and concept of connectivity which is saying that people best adopt knowledge when it is presented in a synergistic way of combining learning, work experience, and communication. Know-where, know-how, and know-what are three elements that are crucial for adopting new knowledge.



DEMOGRAPHIC CHARACTERISTIC AND COMPLETION RATES

The most important factor when new thing is put into the market is will it be adopted by wide area of population. Clearly massive open online courses have passed this test. For getting better view of massive part of them we have to first define it in number of students that enroll in these courses. So far number of students enrolled per course is usually from 20.000 to 230.000, but in most cases it's bellow 100.000 as shown in Graphic 1. Obviously entering online course like the ones offered on mooc websites may be very similar in a manner of available material and learning possibilities as entering elective class on university, but nevertheless experience is not the same. Question arises what is happening with students that enroll in these courses, and why they are not finishing them. Intuitive systems such are ones on mooc websites are making easy access for courses for anyone interested in them. With that in mind they are relatively easy to join for people with diversity demographic characteristics, from an early age to an elderly retired persons.

For example, data analysis conducted by Tucker Balch [3]. on course "Computational Investing, Part 1" that was available on Coursera in 2013, shows minimum age of students who have completed course to be 17 years old, on the other side the oldest passing member was 74 years old, and mean was 35 years old. This course have passing rate of enrolled students 4.5 %, thus making it good example of one typical course that is oriented toward specific area in terms of attendance and completion rate. Other than demographic characteristic of 4.5% people that passed test we may compare it to the other 95.5% of their colleagues that haven't passed it. Of students who did not complete the course minimum age was 16 years old, maximum 88 years old, and mean 34 years old. Early completion rates were typically lower than 10%, with a huge participation drop starting after the first week. In the course Bioelectricity in 2012 at Duke University, 12,725 students enrolled [4]., but only 7,761 ever watched a video, 3,658 attempted a quiz, 345 attempted the final exam, and 313 passed, earning a certificate.



Graphic 1. Relation between percentage completed and assessment type based on analysis of random 45 courses on Coursera in 2013.

Factor that is probably mostly seen as expected is sex, majority of students are male, 94% of the ones that have completed course (89% of those that didn't), but there is developing potential aimed toward female population, because courses like this are available for attending in a free time, and that may be perfect for housewife, pregnant woman, or similar. Other than that distinguishing may be a factor to look upon to. Unemployment rates are getting higher, and that may be quite motivating for people to try to look to different themselves on market. Courses like this, from prestigious universities may be great way for something like that.

Global picture currently show that there are more than 20 million of people registered and involved in some of the most popular mooc communities. Among them one of the most popular is above mentioned Coursera, because of the most members, and very broad network of universities included in educational process. In term of that it may be reasonable to say that more than 6.5 million people registered on their website represent statistically significant part, and that assumptions made in consideration of that are applicable to whole mooc world.

People are what people are taught to be, so nationalities and countries from where are they coming and attending courses can say a lot about population in that area. What was expected is that the most enrollment is coming from United States of America, every 4th student is coming from there. Following countries are India 8%, United Kingdom 4.5% and so on. Considering online environment we always have to keep in mind that these numbers change even on weekly basis, and that we may expect more and more people from developing countries because the popularization of these courses is taking place now in them, and that the high pick phase in USA have passed and they show stable growth now. Thing that is important to mention is that Chinese government policies [5]. are prohibiting to some degree open access to open courses on these websites because of limited control they have over them. In that term it may be wise to say that if that by any chance they give complete access to the most popular course websites they would take a leading role in nationality segment. Good example of these restrictive policies have been seen in "Asia's first MOOC" organized by Hong Kong University of Science and Technology which only attended 17000 students, and many of them even weren't from Asia (they were from Brazil, Mexico, etc.).

Analysis of Chronicle of Higher Education research [6]. shows median scores: 33.000 students per course, 2.600 passing (7.87%), 1 professor and 1 teaching assistant on course. On the course it shows that most professors prefer automated grading over peer grading, that 97% of professors prepare original videos for courses, 75% use open educational resources, but in 9% of the classes professors required physical textbook and in 5% they have required an e-book. Grading by peer review has had mixed results. In one example, three fellow students grade one assignment for each assignment that they submit [7]. The grading key or rubric tends to focus the grading, but discourages more creative writing



BEHAVIOR OF ENROLLED STUDENTS

In order to better understand needs and motivational factors of students, it's practical to identify them by groups in terms of their actions on courses they have attended. Study that was conducted by Stanford University's Learning Analytic group [8]. recognized four types of students: sampling learners, ones who are watching lectures from time to time; disengaged learners who quickly quitted the course; completers, they are viewing most lectures and take part in most assessments; auditors, they have watched videos, but avoided taking quizzes and/or exams. The study identified the following percentages in each group.

Course	Auditing	Completing	Disengaging	Sampling
High school	6%	27%	28%	39%
Undergraduate	6%	8%	12%	74%
Graduate	9%	5%	6%	80%

Table 1. Types of students according to their engagement on MOOCs

This study obviously shows tendency of people to take only occasional part in these courses, and only in terms of they would like to do or see. It shows that although people want to be engaged in this type of educational activities, they don't want to take a part in every available activity, as it was planned by professor and/or instructor. Reasons for that may vary from student to student but educated guess would be that people don't like to be told what to do in their free time, and in particular, they don't want to be told to do anything they would see as a boring stuff. That means that everyone see idea of lifelong learning and education as a great one, with a big plus in terms of picking subject someone wants to take a part in on his own free will, and this sounds great on paper. In reality almost no one wants to give themselves in 100%; people like to spend their free time with their loved ones, friends, and time they spend alone in learning environment would be most likely considered as a wasted one. The other thing is that people forget what they used to be, they were pupils, they were students, and most likely they enjoyed time spent in school and university because of people they hanged out with, not because of the knowledge that exist and is available in these institutions. This is a reason why people remember these periods of their life as their best one.

/	Quizzes	Videos	Reading	Communicating
Group A	76%	86%	38%	68%
Group B	17%	50%	83%	79%

Table 2. Expectation of engaging MOOCs based on interviews in Belgrade

As time is passing by they would like to evoke these emotions, and to take a chance to learn something they have missed in their young years. In a survey conducted among people in Belgrade, results that have been obtained and shown in Table 2. approve this claim. Key question that have to be asked in order for people to become qualified for the rest was "Are you digital literate?". It was mandatory in order to select qualified candidates, the ones moocs are oriented toward to. The ones that said yes were asked question if they would like to learn more about subject of their interest via online course. Based on their answers one that answered yes were divided in two groups, based on their age. Group A was conducted with people younger than 30 years, Group B was conducted with people older than 30 years. They have been given choice to say what they would like to do on online seminar: quizzes, watching videos, reading material, communicating with people. Results that have been obtained show tendency of older people to join such courses in order to communicate with people, and that they are afraid of quizzes, most likely because quizzes can put them in inadequate position of founding their own ignorance on topic they are supposed to know. Beside that it's obvious that older people prefer reading to watching video lectures. On the other side younger people are more eager to test themselves through quizzes, and they are more oriented toward watching videos then reading.

If we logically compare results from these two researches given in these two tables, we may make conclusion that younger people are more focused on finishing online courses, reason for that would most likely be to make difference among other people their age, on the other side, older people will be more likely toward watching and not acting in online events. Other reason that have to be taken into consideration when organizing online course have to be time and effort needed to be put into work, and that what one will take from the course is mostly to his or hers self-motivation, and it's normal that older people although they are interested in these courses will eventually end up not following whole course and gain certificate.

MOTIVATIONAL FACTORS AS PART OF ENGAGING MOOCS

So what are the reasons for people to enroll in MOOCs? Nothing would happen without motivation, in order to enroll they need to be motivated at least to make one click on webpage. Story behind enrollment is oriented toward people desires, so if we think into details there are no two motivation that are exactly the same, like there are no two people with exactly the same life stories. If we try to make a general motives of mooc student it would look similar to this [9].:

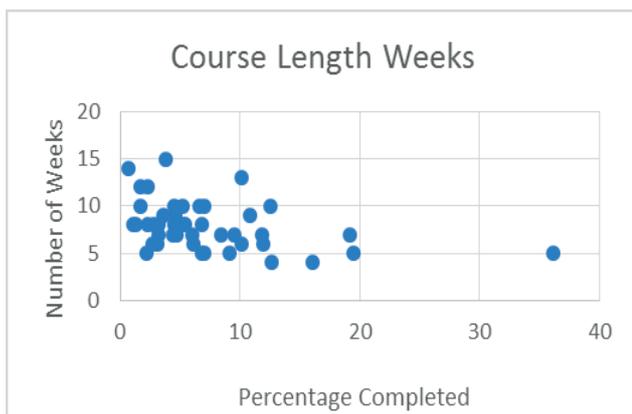
- ◆ to learn something on a topic that is in their interest zone
- ◆ to learn something from an expert from recognized and famous institution
- ◆ to receive certificate from some area



- ♦ to make a professional network
- ♦ out of curiosity for something new.

This is what it is said and seen from the point of spectator and this is only some part of the motives one have when he is entering courses. Other motives that are not that much seen, and are not popular to say are oriented toward fulfilling expectations of environment, improving chances for employment, and similar. As it's obvious these motives differ from the ones mentioned above, these are hidden agenda motives, very internal in a way how much one cares to other people opinions, and very motivating, because people never want to disappoint the ones they care about. Other bottom said motive is oriented toward better chance for self-preservation, and as such is pretty explanatory by itself. Precise this motive plays star role when it comes to picking class, because people who are motivated by that care a lot how it will look like on their resumes. That is when it comes to picking Ivy League or some other famous university, and/or famous professor from the area one wants to study, because students expect that will look great when they see prospective employer. That way shows us that even among educated people there are ones that are moved and motivated by popularity.

Other side of medal shows us there are a lot of people that are not finishing online courses, and like with everything there exist motives to do so. General found motives for that are lack of time, lack of motivation, lack of pre-gained knowledge, lack of interesting stuff, disappointment with additional things offered in the course. Beside that it's important to keep in mind that we are all humans and take into consideration, one on the first sight not so obvious factor, which is length of the course. People now tend to reach things in short amount of time, and with moocs it's not different.



Graphic 2. Relation between number of weeks of course and percentage completed based on 45 courses on Coursera in 2013.

Whether it's because quantity over quality way of thinking or whether pure lack of interest toward investing more time in a course. If we observe Graphic 1. and 2. closely we may see that the majority of courses which are more likely to be finished are one with auto grading system, and short course length. While we have that on mind we may see a pattern which people who are into certifications follow, and that is, find the easiest and shortest

course in the area you like and finish it. On the other side people that are into area are a little pickier. They tend to follow stuff of their interest, and focus on what is in their heads, and what knowledge they are adopting, and not only how the others will see their efforts.

In order for students not to lose motivation half way on moocs they have to possess true expectations for each activity. Students on these courses may have in front of them presentations and live streams from one of the most acclaimed and respected professors but in the end, they will not have face to face contact with them like they would have on campus environment. They need to adopt commune like environment on forums, and the fact that professors most likely is not going to answer their questions. With that in mind, whole process of time management, organizing, initiating communication and other connected things is only up to student who is taking a class. So if someone unprepared, like most people are, enter the course from best intentions, he or she may end up dumping on the side, because it didn't fulfill their expectations.

CONCLUSION

Important question what people asks themselves is why people praise mooc when a lot of enrollees enter these courses and then just leave them. Well, answer is quite simple, at the end all comes to expectations. While people may receive top quality education for free, and from their homes, it means nothing if they are not motivated to do so. There is an important difference between formal and informal education. Formal education on these institutions carry aspect of belonging, and when people feel that they belong somewhere it's harder for them to leave. On the other side informal education supported by these institutions is open toward wide area of people, but most people come to these courses with unreal expectations. So when they face the truth that they may receive knowledge, but without any personalization and familiarization with people, they start to slow down, and eventually drop out. There are in process methods which will try to make these courses acknowledged on universities, that may raise their praise, and remove their free status, but this may be considered as motivational factor too, because people always value more things that they pay for, than the one they get for free. In these terms future research of this topic have to include influence of newly adopted freemium principle on moocs, and compare it benefits with the free that is currently worldwide available. Beside that what may be important is informing people of what they should expect on these courses in a more aggressive manner, that way they will not feel tricked when they enter them and they will most likely stick with them until the end.

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