

Survey on Understanding the implications of MOOCs in Engineering Education

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ABSTRACT:

The trend of Education is changing day by day. In the trend of Traditional way of education, distance learning came into existence in the form of Correspondence courses in the 1890s-1920s, later radio and television broadcast of courses and early forms of e-learning. At present digital age of learning is the happening with the increase in online and distance education through open learning opportunities and the development of MOOCs. Massive open online courses (MOOCs) are one of the most prominent trends in higher education in recent years. With time and place flexibility, MOOCs gathers scholars and 'like-minded fellow learners around the globe'. Many of the reflections about MOOCs are based on economic perspectives (scalability, productivity, being "free") and technology perspectives (such as forums, peer-to-peer learning support, automatic grading). The massive and open nature of MOOCs places the control of learning at the discretion of the learner. Therefore, it is essential to understand learner behavior. This paper examines and explores the learners' behavior relevant to MOOCs and subjective considerations inherent in learning. A number of psychological challenges specific to the development and use of MOOCs such as the motivational, emotional and intellectual commitment of MOOC learners, and the skills profile that effective MOOC learners require are discussed. Therefore, a literature review on MOOCs characteristics, timeline of its development and a blend of practical issues with the experiences of faculty on MOOCs education are presented. Two interesting questions to ask based on these developments are: (1) knowledge of MOOCs and (2) who is attending MOOCs currently. This paper represents an effort (1) to create the understanding of MOOCs from the prospective of students and faculty, and (2) to articulate the pros and cons with MOOCs.

Keywords: MOOCs, cMOOCs, xMOOCs, Quality, Survey, Impact, Students, Faculty.

Introduction:

Higher education has been around the world for centuries and today because of cost it is facing a huge dilemma among students with an enormous debt burden. First MOOCs was emanated from Open educational resources. By definition, MOOCs take place online. They could be affiliated with a university, but not necessarily.

These days, Most of the prestigious universities offer a large number of students the opportunity to study high quality courses online often at no cost. They are ideal for independent study and users can select courses from any institution offering them. MOOCs do not always lead to formal qualifications. There is no entry requirement. MOOCs Video-based, they offer interaction either through peer review and group collaboration or automated feedback through objective, online assessments (including quizzes and exams). While most courses are free, some are fee-paying. Videos are normally short and much activity takes place on online discussion groups and forums.

MOOCs can be classified as cMOOCs and xMOOCs depending on their pedagogies. Accordingly to the research of Kennedy J(2012), Connectivists MOOCs are based on social, distributed and content is networked. cMOOCs don't run with a centralized core of content, in the sense they are distributed. Kop 2011, studies on MOOCs states that CMOOCs relates to social learning theories such as social constructivism. (Rodriguez, 2012) approach towards MOOCs studies states that xMOOCs are traditionally categorised as cognitive –behaviourist and formal post secondary education. The cMOOCs and xMOOCs models attract different audiences, use different learning approaches, and employ different teaching methods.

The Government of India has decided to start 350 online courses through SWAYAM (Budget 2017-18). The online sources such as Coursera, Edx and SWAYAM, UGC, and other educational authorities are trying to create a solid systematic structure for the validation and recognition of accomplishment of the courses that are providing cooperation by these institutions.

The present paper characterise the demand and denials which

addresses the probability and improbability of the MOOC movement, as perceived by a random sample of experienced Open Distance Learning educators working in the area.

Impact and quality of MOOCs on engineering education:

Kizilcec et al, 2013 studies explains that the ability to track and classify learners has enabled based on their patterns and engage individuals to interact with MOOCs features. In Engineering education MOOCs helps the students to learn new technologies, which are not a part of course. These courses enhance their skills which are required to grab an opportunity in the real world.

Thus, the quality of online courses is often described and differentiates between how a course is designed and how it is taught. A well-designed online course is generally recognized as a hallmark of online course quality, While a bad instructor can arguably find a way to ruin a well-designed online course (e.g., by being non-responsive). With this in mind, in the following section, we briefly summarize literature about online course quality and MOOCs to establish a way to discuss the quality of MOOCs.

Those who previously have taught online articulate that there is no significant difference between online courses and traditional face-to face courses, despite many people, in their research analysed question whether students learn as much as online as they do face – face (Jaschik& Lederman, 2014). Bernard et al., 2004; Meyer, 2002, 2004; Phipps & Merisotis, 1999 studies explain the “comparison studies” taking the feedback from students of face-face courses and online courses. Bejerano, 2008; Edmundson, 2012; Kroll, 2013 believe that education is inherently a face-to-face process.

Quality of MOOCs is reviewed by different development process centred standards (Shattuck, Zimmerman, & Adair, 2014). According to Bernard et al., 2004; Lockee, Moore, & Burton, 2001; Meyer, 2004; Phipps & Merisotis, 1999; research, is that researchers cannot control extraneous variables that may impact students achievement.

METHODOLOGY:

This paper will use a questionnaire to develop the quality of MOOCs and help to recognise the impact of MOOCs on students in higher education.

In order to investigate the awareness and challenges faced by students and faculty with the MOOCs, a number of 100 Participants were used a mixed set of methods, qualitative and quantitative (questionnaires, focus group interviews, observation, content analysis). The pilot – sample included:

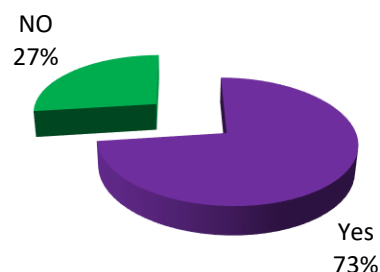
- 67 students from the Faculty of different department in the college of both bachelor's degree and master's studies, no matter the year nor specialization.

- 43 faculty members from the same institution, aged between 26 and 57 years old.

The Fig1: describes how familiar are students and faculty members with MOOCs. 73% of the participants declared that they have much knowledge MOOCs. Only 17% participants marked that they have awareness on MOOCs and benefits.

But on the other side, we questioned if they are interested in whether to take the course are taking the course already, shown good response.

Knowledge of Mooc before ???



Attending Some MOOC??

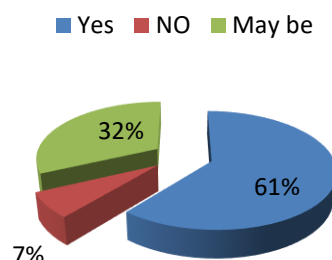


Fig1: Knowledge on MOOCs

Almost 61% of the participants answered that they are taking the online in their respective specializations. 32% marked may be they will attend some courses in future. 7% to participants showed no interest in taking this taking the online courses.

To explore this study the investigations are conducted on these categories also:

1. Program feasibility
2. Learning materials
3. Student involvement and interaction
4. Course technology
5. Students support
6. Accessibility

Almost more than 100 teachers at different level university degree in Education were involved in the research, on a voluntary basis and all of them participated actively in the task and filled in the evaluation questionnaire being piloted. The rubric for higher education is considered because of the increased initiatives about offering college credit for MOOC completion (Adair et al., 2014).

With these analysis most of the faculty agreed that feasibility of the program plays a vital role in MOOCs progress. The technology used to present the content and the students support is very necessary to have a successful online study. With this peer to peer analysis it is clearly reviewed that all

resources and materials used in the course should be appropriately cited, as the instructional materials present a variety of perspectives on the course content. This analysis directly or indirectly reflects to the student's interaction and involvement towards that course. The Learning activities provide opportunities for interaction that support active learning.

These days Students can readily access the technologies required in the course. The online course contents should have latest technology based Course tools which support student engagement and guide the student to become an active learner. However, the navigation throughout the online components of the course should be logical, consistent, and efficient.

The institution's accessibility policies and services have great impact on student to articulate the course instructions. Most of the faculty answered that the institution's academic support services and resources can help students succeed in the course.

In this analysis students will be given opportunity to understand and suggest any other features they feel important to have successful for MOOCs.

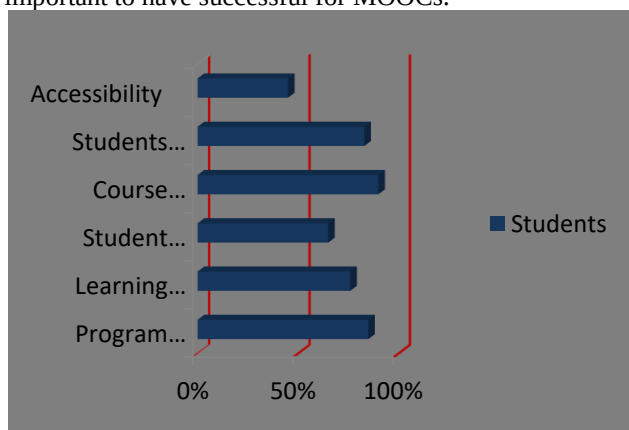


Fig: 2 Students review on online courses

Although there are many advantages and disadvantages, the most important differences of MOOCs are discussed and addressed in this paper. In the tutorial presentation of MOOCs, Malan, D.J 2013 the features of online delivery method are addressed.

- a) Motivation: Ames, 1992 determines motivation as a goal oriented behaviour of a learner and it is a part of persons objectives and beliefs about what is important or not. The study of Brophy, 2004; Slavin, 1987, states that the motivation is conceptualized as an internal source which enhances, maintains, or mediates cognitive development. Brophy (2004) found that 'motivation to learn' as the inclination to find relevant academic activities and obtain the intended benefits from them. Schunk et al. 2008 prediction on "Motivation on Education" outlook motivation as a personality trait; however, depending on time or context this approach ignores the fact that learners can be motivated. Taking the references of many past research studies and peer to peer review by many faculty members of our organization,

motivation towards the online study is very necessary. In this investigation 85% participants mentioned that motivation is the important objective to opt for online course successfully.

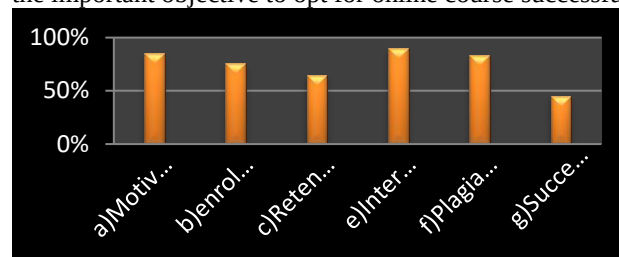


Figure 3: Faculty review on MOOCs

- b) Enormous enrolment: This survey determines student's involvement and enquiries on MOOCs is drastically increasingly day by day. Especially in our country India, the global class room is made reality which is making students to opt for MOOC. For those who have a thirst for premium, western education, MOOCs make perfect sense. If you can't make it to the Ivies, why not bring Ivy-level learning to you and that too for minimal cost or some free.
- c) Retention & Interaction: In this analysis the user perception of MOOC features are predominantly figured, rather than individual learner characteristics. Similar to Marks et al. (2005) the different categories of experiences are collected: experiences with the course instructor; experiences with other learners on the course; and experience with the design features of the course; as together these cover the broad scope of how individual MOOCs will differ from one another. 65% of participants mentioned that MOOCs content has a major effect on Perceived Effectiveness and subsequently on retention and interaction. The impact on learners retention represents a limiting factor for the viability of very large scale MOOCs (Kate ,Ghada 2016).
- d) Plagiarism and cheating: Regardless of where or how students are learning Stress, tiredness and pressure to perform are all common factors for the plagiarism. Particularly, rapid growth in massive open online courses (Moocs) creates the problem of cheating which is making academics forcibly to search for new ways to ensure honesty and protect academic integrity.
- e) Success rate: Drop-out rates are high – up to 90%. Rates are marginally lower for paid-for courses. A reasonable degree of computer literacy is needed. Many MOOC users are graduates seeking to top up their skills and competences. MOOCs do not feed into a degree or other qualification but are self-contained. Only few students complete the courses. Content from a MOOC offered by a university outside your home country may not match cultural and other conditions with which you are familiar.

CONCLUSION

This study will explore the clear understanding of MOOCs by students, problems or advantages faced by students during the online delivery. The students and faculty view of the MOOCs program will be summarised with a hope that benefit the relevant organises to improve our understanding on the requirement and demands of online learning. A clear statement of the level of interaction that will be provided by the course tutors is essential, along with clear guidance on good etiquette on the discussion areas. Now the expectations of cheating in MOOC developers begin to focus on improving the quality and rigor of assessment (rather than consider them an afterthought) and MOOCs begin to gain some external value (either as an alternative to expensive college credits.

MOOCs represents open access, global, free, video-based instructional content, problem sets and forums released through an online platform to high volume of participants aiming to take a course or to be educated. With time and place flexibility, MOOCs gathers scholars and learners around the world. MOOCs is the latest trend in the field of distance education which seems to go on for some time which indicate a significant need of more detailed research studies on it.

We can conclude that variability and interactivity plays an important concept in MOOCs. More number of students can be motivated towards MOOCs higher quality of learning if new technology teaching styles are adapted by the MOOCs providers.

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