

STATUS OF MOOCS AND E-CONTENT DEVELOPMENT: A SOCIAL SCIENCE PERSPECTIVE

¹Dr. S.I. Humayun, ²Aprameya Mohanty

¹Assistant Professor, Centre for South-Asian Studies, Pondicherry University, Puducherry -605014.

²Research Scholar, Centre for South-Asian Studies, Pondicherry University, Puducherry-605014.

Abstract: This paper tries to focus on the status of MOOCs and E-content development. It further elaborates the concept and background of MOOCs and their benefits and limitations. The author also tries to incorporate MOOCs' impact from a social science perspective and a global perspective. The wide use of advanced technology and its enhancement in the academic field. This paper focuses on the recent trends of the researches related to MOOCs and their usage in various disciplines. It also covered e-content development and its role in changing and modern education systems. The benefits of MOOCs and the use of E-content developments are discussed in the paper. Also, the challenges and limitations of their use are discussed. The paper also focuses on the current Indian scenario during the Covid-19 pandemic, which is considered the most crucial time for the development of online learning platforms. It also shows the paradigm shift of various ideologies related to MOOCs. The current trends on online educations and eLearning are discussed in this paper. The perspectives through social science are discussed, which seems important in current times. Initiatives taken by the Indian government and their benefits are also discussed and elaborated. Learning analytics and its role through MOOC are also discussed. Though this paper is supposed to focus on social science, the author has tried to elaborate on all streams and courses. A written summary of the science and technical courses is unavoidable while discussing online learning.

Keywords- MOOCs, massive open online courses, e-content development, eLearning, online eLearning.

1. Introduction

Outdated curriculum, quality of education, teaching quality, educational cost, poor infrastructure is always part of the Indian educational system. Though India is blessed with some world-class institutes and Universities, both good in quality of education and infrastructure. Formal education in India is still considered poor or boring. The current pandemic hit period forces the regular educational system to change its teaching path and welcome online teaching. As we all know, nothing is constant in society, and change is the only way of life. In the case of education, also the same rule applies. Gradually the new generations are more interested in the new way of teaching without bothering about the regular classroom teaching. Online courses and online classes are considered very popular nowadays. Though in earlier times, online classes seem like only for professional courses now in this Covid-19 pandemic period, it is available for general courses also. It is more mandatory for school and college/ university students. Online education is considered a new distinct form of distance education nowadays. It is also referred to as eLearning. The educational platform has gone through tremendous changes in the last decades. The educational pattern becomes flexible and less time-consuming, and interesting. All thanks to modern technology. The Digital era has a greater impact on teaching. Several educational software has been developed through digitalization. Social media and other online platforms had brought many changes in the educational pattern. These online platforms contribute differently to learning and teaching method. Internet is considered the most important key to create a parallel system for education. It helps the learners learn by themselves through a social network.

MOOCs are the latest addition to the online education field. MOOCs or massive open online courses are set on three main points: web 2.0 and open access. MOOCs have changed the outside view of online education. It became very vast, including every discipline. It is believed that a MOOC can develop institutional, NGO-related knowledge and the corporate sector.it is based on an innovative approach. MOOCs can be delivered and followed through personal computers and smartphones with an internet connection. Mobi MOOC (Mobile learning MOOC) was introduced in 2011. Mobi MOOC seems to be

very popular as most of the population have smartphones with an internet connection, making online learning easy. MOOCs generally have a semi-autonomous learning environment, which is distributed through the cloud. Open educational resources were produced and researched & shared by participants, which helped open learning. It helps to turn the participants from being consumers to being producers. It helps with the learner's creativity. The origin of MOOCs also reveals the involvement in academics. MOOCs have taken various routes; some relate to policies; some relate to marketing strategies. Nowadays, the educational curriculums and education patterns are going through several changes that help MOOCs make a difference. There is a new term invented called MOOCs social movement. The democratization of education policy is used here. All the learning analytics, visualization tools are measured through MOOCs. Social media is considered an important part of MOOCs. Social media apps, websites are part of tremendous revolutionary changes in the academic field. Generally, MOOCs are viewed as a challenge in the teaching field. The considerable big challenges in MOOCs are automated tests, voluntary student participation, etc. As MOOCs are globally popular, they are more business-friendly. Though most of the provided courses are affordable or free, many courses demand learning fees to complete the courses. Most participants are job holders, and these courses claimed to help them get a promotion in their job with their completion of courses. Some surveys show the business model differences within MOOCs. Some areas are more active compared to others. MOOC business developed in the more active areas, where there are higher participants. The business objectives and goals differ from area to area and become more complex. The impact of MOOCs on educational institutions is considered a piece of great news. But the problem is MOOCs can't guarantee the quality of education. The online instructors can't able to create a common/regular classroom atmosphere. And the participants don't get individual attention like a classroom. Sometimes the instructor clears doubt in discussion sessions. The leading sites providing certified courses are Coursera, Edx, NPTEL, etc. These sites provide courses globally and have a large number of participants. Coursera is having the highest number of participants in the world and Edx in second. In India, NPTEL is considered to have the highest number of participants.

E-Content development generally refers to educational reforms. In developing countries, which want to progress economically through education. The educational content generally deals with educational exploitation, which is slowly emerging in India. Poverty, illiteracy, population explosion, poor educational system, etc., are the reason behind this. The old educational model seems to cover a tiny portion of the vast Indian society. Only the privileged ones were able to afford it and get educated. Poor and socially backward people did not get a chance to be educated. There were numerous reasons, blind beliefs, and exploitation of power behind this unfortunate system. Gradually many educational reforms took place, and the government also tried to aware people about the value of education through so many initiatives and newly introduced policies, which help the mass to understand the importance of education. Before the internet era, knowledge-seeking is equal to every aspect of physical presence, be it in the classroom, tuition or coaching classes, library visits, etc. Now there has been a great transformation in teaching methods and gaining knowledge with the help of modern technology. The technology can provide grants and access to electronic content based on participants' interests. They can access anything, sitting in one place. The role of social media is also important in this context.

Certainly, the current Covid-19 pandemic hit period has brought drastic changes in the educational platform. Many school/college/ university curriculums have changed due to this. The traditional way of teaching has been stopped, and new ways are introduced. Many new online courses are introduced, and students' learning experiences have changed through this period, and teachers' way of teaching has also changed. Moreover, this period became very helpful for the younger generations to learn things in a new and more sophisticated way. New courses are emerging throughout the period. Nowadays, online learnings are even open for kids. White hat jr has emerged as a kid-friendly app that teaches coding to kids. Day by day, the educational system is changing, and our priorities are also changing.

2. Background

MOOCs became very popular globally and in India in the last decades. MOOCs is the brainchild of Bryan Alexander and Dave Cormier. But George Siemens and Stephan Downes are considered as the pioneer of MOOCs (2008). In 2008, MOOCs' term was coined to introduce an online course offered by the University of Manitoba (Canada). MOOCs stands for Massive Online Open Courses. Massive in MOOCs refers to the number of participants or students. Open refers to the sources, changes, of course, curriculum, registration, etc. Stanford University started MOOCs in 2012. Since then, MOOCs have come a long way. Data shows that MOOCs provide more than 9000 courses with the collaboration of more than 800 Universities globally. Coursera and Edx have most of the global participants. Platforms like Coursera and Udacity are very low on research. But Edx used to conduct researches of their own as it has collaborated with MIT and Harvard University. MOOCs seem to be the 4th stage of online education.

Stage 1 refers to learning through LAN, where the faculty or instructor prepares notes and academic presentations and produces them through online. Here the students will be able to access the information through the same network. This is considered as an old approach of the 1980s and 90s.

Stage 2 refers to the Virtual Learning Environment (VLE). Online discussion forums, Learning Management System (LMS) are introduced under this stage. Only students who have registered before can able to access this.

Stage 3, LMS plays an essential role in the learning process. The content area is reduced in this stage. Quiz and grade book tools are considered necessary in this stage.

Stage 4 refers to MOOCs. Many students' activities occur without LMS, such as social media activities (on Twitter, Facebook, YouTube, LinkedIn) and other websites that aggregate the information. The learners almost supply the contents to themselves here. All the information is shared through emails as links for the learners.

The design of MOOCs is based on software-related platforms. This allows registering a vast number of participants, who can benefit from online courses with digital streaming of virtual classes and online shared materials. Video lectures are a part of learning in MOOCs. Series of videos provided to the learners through online classes. Recorded video lectures are more on-demand for online classes. The length of the video lecture may also be extended or decreased based on the responses from participants. The videos start from 15 minutes in length to 50 minutes. The length of the video lecture also depends on the span of the course. If the course is about five or more weeks' period, then it shows shorter videos. Videos lectures are mostly recorded before and saved, and later shared in front of the students. Desk-top/laptop recordings, smartphone recordings, and high-resolution cameras are included and welcomed here. All they want is clarity and quality. Most of the tests are conducted by computer. In MOOCs, the participants sit for tests throughout their courses. Some tests are conducted for certificates, and some are conducted after the completion of the course. All the assignments are submitted online and within the deadline. Generally, courses like mathematics and computer science tests are based on automated questions, while social science and humanities courses tests are conducted online. Some online courses form small groups of participants to work together on their courses and participate in assignments and group discussions. However, sometimes this pattern is considered a problem because most of the participants are from different backgrounds and cannot operate thoroughly. In MOOCs, participants can download all the shared materials, slides, links online.

The platform is always open for questions and discussions, comments on the course content. Online group discussions are part of the course schedule as group discussion is in high demand in all technical and general courses. Participants can be very much able to get desired results from this. All the materials are available online, which is very much helpful for participants. Many MOOCs recognized their high scorer or toppers of the courses. Participants used to sit down for yearend or course completion tests. The certificates don't help the participants as they were not recognized in colleges or universities. Only some certificates regarding technical learnings are accepted in the workplace. The public information about MOOCs is mostly about learning analytics, which is always not available. This needs to be changed and improvised. The designed contents need to be automated for individuals. The direct interaction among the participants and instructor is a rare sight. The assessments are mainly used for feedback from participants. The instructor is only able to respond to the comments or questions shared by the participants. MOOCs started from learning and discussion over social media. MOOCs include a combination of social media activity (tweets, Facebook posts), blog posts, and online discussion forums. The instructor generally initiates MOOCs to which interested participants contribute. The use of standard technology is generally not present in MOOCs.

In the context of E-Content development, the MHRD of India has introduced so many initiatives. NPTEL is an emerging initiative by MHRD, India's E-Content development program. NPTEL is offering free online content of engineering, science, and humanities courses. IITs and IISC are collaboratively initiated NPTEL. This is considered as the highest subscribed site in India. The main objective is to provide a quality education through video lectures. This is also providing teacher training programs and trying to make a clear view of the importance of electronic content in teaching. LBD (Learning -By-Doing) program for technical education is initiated by this. IGNOU is providing more than 200 online courses in social science/ science and other technical education. Earlier, IGNOU provided distance education for which participants need to attend classes once a week and write a year-and-course completion exam and get a valid certificate in all higher institutions and workplaces. But later, the online teaching initiative made it so easy to get more students and share information, and distribution materials are elementary. National Mission on Education has formed virtual labs for learning workshops to develop knowledge about infrastructure lab facilities. The major objectives of E-Content development are to examine the current challenges and consequences projected at E-Content development and how to generate more E-Content.

Open Educational Resources are high-quality educational materials organized as courses. Through E-Content development, the materials are now digitalized and available online. The internet has played an essential role in organizing these resources for the public. The open learning process seems to be helpful for the mass. The best advantage of it is access to anything from one place, without moving anywhere. There are several initiatives in India like eGyankosh, National Digital Repository for learning and storing resources. NCERT is considered as the leader in the field of 'Open Courseware.' NCERT provides online school books in multi-languages. The UNESCOSAILS is an international e-learning portal that raises awareness of information literacy in the South Asian region. Open Learn University gives most of the free access to contents, materials. This is also a conducive platform for visually-challenged users, as they can listen to the contents without any difficulties.

In the last 3-4 years, the new popular term we find is Digital India, which is an excellent push for these new emerging trends. Low-cost data create many internet users (both in rural and urban areas). In 2019, the rural internet users outnumbered the urban internet users. According to data, 227 million users in the rural area and 205 million users in the urban area. A study found that 58% of the rural internet user age group falls in 16-29, which means the rural youth are very keen to connect through the internet. Though internet density is high in India, still 70% rural population lacks internet access. It is believed that India's

66% population is rural, so internet density is only considered 25% of the rural population. So it is said that more internet access in the rural area will boost India's online education platform.

3. Analytical Discussion

India's online education market is believed to reach \$1.96 billion by 2021. Earlier in 2016, it was \$246 million. As the pandemic hit India hard, now it's believed that we will attain or overcome our net worth soon. India's internet penetration is 50%. By 2021, the number of internet users will be 735 million. That will increase online educational platforms. The Government of India has taken several initiatives under the 'Digital India' and 'Skill India' programs. As the government is already backing up digitalization, infrastructure for online education is rapidly growing. The government takes so many initiatives as YUKTI, SWAYAM Prabha, eBasta, and e-VIDYA.

Varieties of online courses considered are available in India. They were starting from U.G., P.G. levels. It is comparatively more affordable. Demography is always considered as an essential aspect of India. 46% of the Indian population comes between 15-40 age groups. This makes the best target population for online education. As we all know, online educational formats are more preferred by the younger generations. In 2018, UGC actively supported the online education models, allowing several institutes to offer online courses. In 2019, UGC allowed more institutions to carry on with more online courses. It also introduced certificate programs within a standard framework. The UGC backup ensures the quality of these programs. It also encourages the younger generation to enroll in those courses. As these courses followed UGC guidelines and regulations, these become equivalent to their counterparts.

After this pandemic, the guidelines were more reinforced, and all educational institutions needed to continue online teaching. This was the safest way in the current scenario, maintaining social distance. From that day onwards, a lot of institutes are trying to improve the online model of teaching. This became a substitute for regular classroom teaching. MOOCs provide the flexibility to choose online courses almost at an affordable rate or for free.

Generally, most Indian students enroll in courses to gather more knowledge or skills for their job or obtain a new job. Limited investment and large varieties of courses attract the Indian youths. Though generally, we consider it as more professional based. MHRD launched a new campaign called "Bharat Padhe Online" (India Study Online) in April 2020, just after the Covid-19 cases increased in India. YUKTI portal was launched to help the institution record research, educational stuff, and other initiative programs related to Covid-19 and students' well-being. SWAYAM Prabha has expanded over 32 educational channels via DTH. The bolster educational program had added 12 new channels which run without internet. TCS just offered a virtual learning platform to many educational institutes for free. This initiative had helped the teachers and students learn and teach in a secure interactive Covid-19 free environment. eBasta provides access to eBooks. This is part of the Digital India initiatives. Top 100 Universities are allowed to provide online courses through the 'Pradhan Mantri e-VIDYA initiative.' Many industries became affected by the Covid-19 pandemic. EdTech industries are getting benefitted from online learning, which created nearly 3000 jobs. India became ideal for EdTech industries with 935 Universities to compile the resources. If we see the Covid-19 hit period, online teaching and online learning became the savior of the moment. However, only professionals preferred this online learning in earlier times; the present scenario forced the general courses to follow the same.

Before this pandemic hit period, also MOOCs is very popular globally. The business policy and educational policy both had done excellent marketing. It is believed that between 2017 & 2022, the U.S. market will have grown to \$6.22 billion. And this is much expected to touch \$336.98 billion by 2026. Most of the investment took place in the US, India, China, South Korea.

As online education always follows trends, the use of technology makes online learning evolutionary. Though there are several ways to assess the effectiveness of a course offered for learning through MOOC, the following are key parameters used to evaluate the quality of the same.

1. Demonstration:

Depending upon the nature of the course, the demonstration plays a pivotal role in MOOCs' structure. The demonstration's objective should be inclined towards applying the ideas to extract new information in different situations rather than merely presenting them information about what to do for a particular situation. Firstly, the effectiveness of a course is enhanced when the demonstration is consistent with the type of knowledge or skill. Secondly, when learners are shown examples of both poor and good practices; and thirdly when learners are guided to relate general information or an organizing structure to specific knowledge or skill instances.

2. Problem-centeredness:

The other important parameter that significantly boosts the learning experience is the problem-centric approach of a course. The goal of learning should be more towards its applicability in the real world. Learning is promoted when learners acquire skills in the context of real-world problems. Presently, many such theories, such as Problem-based Learning, Expansive Learning, Problem-based Learning, and Expansive Learning, are being designed to learn the best when they are engaged in solving the problems. Simultaneously, building up the same knowledge instead provides them with the required information for their knowledge. Further, the courses' problems should be presented in a progressive manner that includes the least important to the trickiest ones.

3. Activation:

A course's objective can be said to be fulfilled when learners activate existing knowledge and skill as a bridge to develop some new skills. This part largely depends upon where the learner stands in the context of the course. The effectiveness will increase if it includes the learning activities that are familiar to the user; be it its past experience or knowledge that allows it to apply them for the course's learning. If learners have not had relevant experience, then a course should begin by helping learners acquire such experience by providing real-world or simulated examples that they can use as a foundation for their new learning. Further, activation also requires demonstration that stimulates the development of the learners' mental models and schemes that can help them incorporate the new knowledge or skill into their existing, acquired knowledge.

4. Application:

The applicability of a course is as important as the other aspect of the same development. The learners acquire knowledge and ideas through the demonstration and supply of information. But in the end, the objective gets fulfilled when learners apply their newly acquired skills to solve problems. Merrill, in his review, highlighted that the universal agreement among contemporary learning theories that applying new knowledge or skill to real-world tasks is a necessary condition for effective learning. Merrill observes, however, that in many courses, the application does not move much beyond requiring learners to answer multiple-choice questions about the material they are presented with (Merrill, 2013). It can be well deducted that applying knowledge to a specific problem is not sufficient for learning. To overcome this, a course must provide multiple opportunities for learners to apply their new knowledge or skill to a wide range of real-world problems.

5. Integration:

Integration here refers to the amalgamation of all processes through which learners acquire the knowledge and its applicability by providing sufficient scope by discussing and defending their newly acquired skills. Learners gradually have integrated knowledge and skill into their everyday lives when they can demonstrate the change in behavior or modification of their existing mental models and can defend their new knowledge or skill when challenged. Therefore, the effectiveness of a course is enhanced when, firstly, learners are provided with opportunities to reflect on what they have learned to adapt, incorporate and modify their acquired knowledge or skills; and, secondly when learners are required to demonstrate and defend their new knowledge or skill to their contemporary and others.

MOOCs are going through various paradigm shifts. The economic paradigm, democratic paradigm, and European paradigm are precisely the important ones. The economic paradigm deals with business opportunities on educational platforms. Marketing and brand value are the key factors here: Coursera, Edx, Udacity, etc. Democratic paradigm refers to openness as democratic access to human rights such as education. The policymakers differentiate the critical factors through several concerns like ideology, vision, theoretical approach, social perspective, etc. European paradigm refers to the openness against the educational domination of the USA.

Instructional design is often referred to as new models of learning. There are many MOOCs formats available. For example, x MOOC, c MOOC, i MOOC, h MOOC. These formats are used in different educational platforms, followed by the theme. One of the important keys of MOOCs is ethical issues. The MOOC phenomenon in social science is often ignored. Generally, most of the technical courses offered in MOOCs have social science as part of their curriculum. Many social science courses like sociology, political science, etc., are being taught and technical courses. Financial and pedagogical options always have an impact on the teaching quality of MOOCs. The online assessment environment is related to many issues. The emergence of MOOCs is quite an explosion in the academic world. The learning outcome & e-learning platforms have a direct correlation.

Analysis and interpretation of data, data collection, measurement, etc., are always part of the analytics. It seems like learning analytics was playing an essential role in innovation, which is gaining significance. Nowadays, quizzes, learning analytics, coding, logs, etc., are viral and can provide a face value outcome of learning. Learning analytics can play both political and educational roles. Cultural diversity is an integral part of this. There are a lot of experiments going on in terms of learning analytics technology. New business models are also introduced to test its impacts. With the help of technology and education towards a social focus, learning analytics has turned into a research field.

4. Limitation:

The challenges faced by learning analytics are the field of critical understanding is missing. From the viewpoint of social science perspectives, it has introduced many education models. Subjects like Sociology, Anthropology, Political Science are emerging as popular. The new educational model is still processing through more data. Most social science subjects are research-based on loads of analysis and interpretation of data, making its way into MOOCs. Still, there is a lot of criticism faced for data collection sources, designs, and qualitative approach stands. This needs to be focused. Data scientists and social science experts must cooperate in this education field to make it more user-friendly.

Benefits of MOOCs:

- MOOCs can be free/low cost/affordable cost
- Only an internet connection is required for learning.
- Physical presence is not required.
- No need for a particular degree for enrollment or in the case of learning.
- Video lectures as replacement of classroom teaching.
- Age is not a barrier to learning.
- Multi-lingual platform.
- No strict schedule for learning.
- A lot of options to choose from.

Challenges:

- Digital literacy is a must to enroll through MOOCs.
- Time and effort are needed.
- Self-regulation is required.
- The classroom atmosphere is missing.
- Lack of infrastructure. (No smartphone, no computer)
- Obstacles of language.
- Poor internet quality. (Poor network leads to poor internet quality)
- Absence of same age group/heterogeneous age group.
- Absence of strict schedule.
- Lower competition rate.
- Financial issues (poverty).
- Independent research is low.
- Gender issue. (As most of the participants are male only).

There is a lot to be done in MOOCs learning. The effect of learning from MOOCs can't be ignored. Participants do achieve a lot through courses. The biggest problem faced in MOOCs is the increased dropout ratio. The non-credit courses witness a higher rate of dropout. There is no doubt about MOOCs' popularity and importance, but some minor and major changes need to be made to be more popular and student-friendly.

5. CONCLUSION:

The online education market hopefully has a promising and positive outlook in India. Many people still believe that online education is not a proper substitute for traditional learning or classroom teaching. It will take some more time for considerable growth. Soon, virtual classrooms will be more popular than regular classrooms. It is believed that a hybrid model will develop, which will gain more attention and preference. These specific changes in education, which emerged in the current scenario, may become stable. As long as Covid-19 pandemic effects are felt, the online learning business will grow strong. It may replace the old classroom teaching and become mainstream.

REFERENCES:

1. Deward , I. (2011). Explore a new learning frontier: MOOCs. *Learning Solutions Magazine*. Retrieved from <http://www.learningsolutionsmag.com/articles/721/explore-a-new-learning-frontier-moocs/print>
2. Jordan, K. (2013). MOOC completion rates: The data. Retrieved from <http://www.katyjordan.com/MOOCproject.html>
3. Kop, R., Frontier, H. (2010). New dimensions to self-directed learning in an open networked learning environment. *International Journal of Self-Directed Learning*. 7(2)
4. Maharaj, K. (2012). Using information expertise to enhance massive open online courses public services Quarterly, 8(4), 359-368.
5. Martin, F.G. (2012). Will massive open online courses change how we teach? *Communications of the ACM*, 55(8), 26-28. Retrieved from <http://dl.acm.org/citation.cfm?id=2240246>
6. Masters, K. (2011). A brief guide to understanding MOOCs. *The Internet Journal of Medical Education*, (12).
7. Milligan, C., Margaryan, A., & Littlejohn, A. (2013). Patterns of engagement in massive open online courses. *Journal of Online Learning with Technology (Special Issue on MOOCs)-Under Review*.
8. Roberts, G. (2012). Open Line Project (Final Report). Oxford Brooks University. Retrieved from <http://www.heacademy.ac.uk/assets/documents/ocr/brooks final report 10 1012.pdf>
9. Shema, H., Bar-llan , J., & Thelwall, M. (2012). Research blogs and the discussion of scholarly information. *PLoS ONE*, (75).
10. Siemens, G. (2005). Connectivism -A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3-10.
11. UGC (2012). Guidelines for e-content Development 2007-2012.
12. Vardi, M.Y. (2012). Will MOOC destroy academia? *Communications of the ACM* 55(11). Retrieved from <http://dl.acm.org/citation.cfm?id=2366317>
13. Weller, M. (2007). Learning objects, learning design, and adoption through succession *Journal of Computing in Higher Education*. 19(1), 26-47.
14. Zimmer, M. (2010). “But the data is already public”: On the ethics of research in Facebook. *Ethics and Information Technology*, 12(4), 313-325.