A Review on Indian Scenario for MOOCs, Open Online Courses & Virtual Education System

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Abstract: Massive open online courses (MOOCs) significantly change the teaching and learning by the use of technology enhancement the quality education in all centuries. It is the batter way of teaching as compared to traditional or conventional way of teaching. The MOOCs have very unique characteristic that make it useful for learners it is based on the ICT model in higher education. The MOOCs have same as Moodle of open-source learning management system (LMS) that allows users to build and offer online courses. This uses two Pedagogy one is quality outcome sand experiences for students and second is deliver a high quality learning experience. It was built for traditional online classrooms rather than MOOCs, which attract large number of students. It helps to generate quality education by transfer of knowledge across geographical boundaries in less time. SWAYAM TV Chanel is a platform functional by the Ministry of Human Resource Development of Government of India for online learning courses on the MOOCs pattern. The number of academic publications around MOOCs has grown rapidly in the last few years.

Keywords: MOOCs, ICT, SWAYAM, LMS, E-content, open educational resources (OER) movement.

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I. Introduction

MOOCs stand for massive open online courses. Massive open online courses (MOOCs) provide a way of structuring students' online learning experience. Online courses are 'massive' because they sometimes have thousands of students; they are 'open' because they are free; they are 'online' because the course is delivered by the Internet. They are open because they are free of cost. They have various formats, but most involve listening to online lectures, completing tasks, reading articles and completing self-assessments. Importantly, most have online forums that provide students with the opportunity to engage with fellow students and teachers from around the world. They are becoming increasingly popular because they are inexpensive to run and provide access for students from all countries to the same level of education.

A recent systematic review of MOOCs identified 17 quantitative studies on this style of learning[1]. Most of the 17 studies were case studies and the review did not include the only randomized controlled trial we have identified. There are, however, a lot of publications written about the underlying learning theories of MOOCs and online education.

Educational academics have expanded the older behaviorism, cognitivist and constructivism theories of learning to include theories of connectivism[2]. 'Connectivism provides insight into learning skills and tasks needed for learners to flourish in a digital era.[2]' Connectivism captures an important aspect of MOOCs – the sense of community that they create and the opportunity that they provide for participants to engage online in order to learn from each other. While MOOCs are increasingly popular, it is not known whether they are any better than leaving students to work at their own pace through online educational material.[1]

When the MOOC phenomenon start in 2012, it have three main characteristics[3] it provided courses[2], with a beginning and an end, that makes distinct from other educational resources like Khan Academy where you pick and choose among lessons. The majority of MOOC courses are vary on university-level subject matter from university faculty and resource person, though that is gradually changing, as we will see points below.

- It is totally online, rather than blended or crosses like some online learning programs that university students take.

- This course is open in two important reasons. They have free, and they have no admissions requirements. The learner doesn't have to be a student at the university offering the MOOC, so anyone can access through internet and start.

- The course is free and open for anyone to enter will attract massive interest. A class may include between

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10 to 50, or may also include hundreds to thousands of students, but they are always too large for an individual interaction to each student with the teacher. Therefore, they rely on students supporting one another or on the student being very independent and self-motivated.

The above characterization of MOOCs, Udacity[3] was always an odd fit. A Udacity course may attract a large number of learners[3], but, because the classes were self-paced, students didn't work together in a cohort like on Coursera[8] and edX[3]. They never consider in the same way. But given that most people nevertheless have referred to Udacity as a MOOC, we'll continue to look at them together along with Coursera[8] and edX[3] for now.

The review is complemented by a collection of available open source learning education platform on the web. Before writing review we examined a wide range of initiatives and research around the world. This review written with the help of high quality learning outcomes provided by a Panel of Experts on Learning in there literature.

II. History and Development

The MOOCs first introduces from the open educational resources (OER) movement[4]. Open educational resources (OER) are freely accessible, openly licensed documents, openly useful for teaching, learning, and research purposes. It is the important and easy way in distance education/open and distance learning domain as a consequence of the openness movement. There are no universal formats for usage of OER files. The term MOOC was coined in 2008 by Dave Cormier of the University of Prince Edward Island5. It consist of 25 tuition-paying students in Extended Education at the University of Manitoba, where the participant over 2200 online students from the general public who paid nothing[5, 25].

As MOOCs have evolved in two different types: the first one those that show off the connectivist philosophy and second one those that resemble more traditional courses. To distinguish the two, Stephen Downes proposed the terms "c-MOOC" and "x-MOOC"[6]. c-MOOCs[6] principles is connectivist pedagogy indicating that material should be aggregated , remix able, re- purpose Like ETV program and e-content, and feeding forward. c-MOOC instructional design approaches try to get connect students to each other to answer queries and/or collaborate on joint projects. x-MOOCs is more traditional course structure[6]. It have clearly previous settled syllabus of recorded lectures and self-test problems. They employ elements of the original MOOC, but are, in effect, branded IT platforms that offer content distribution partnerships to institutions.

Comparison between Traditional Teaching Approach with MOOC's.

Traditional teaching is purely face to face teaching system. Assuming that MOOCs have not yet got the attention they perhaps deserve, one would wonder what is wrong with MOOCs. Although the plus points of MOOCs were quite obvious from their first appearance back in the year 2008, on the other hand, they have also received extensive critique. However, how can we still doubt about MOOCs when the number of unique registered learners increased from 3.6 million in the year 2012 to more than 9.7 million in 2013?

Obviously truth is that there is nothing wrong with MOOCs. Defining MOOCs, by default raises some points to consider. Online classes are more cost efficient because they does not require any commuting, allowing you to save your vehicle expenses. Online courses are also great for individuals in the military or who travel usually. The distance learning format also allows students to pursue education from any location[20, 21].

There are, however, some disadvantages of online education. These include limited direct contact with colleagues and college professors, and fewer opportunities to join college's activities and extracurricular activities. You also have to have a reliable tablets or computers and strong internet connection.

For those looking to get more of the face to face classroom experience, a traditional education might be the better fit. Those people whose looking for a more malleable option, online education is great for them. Another option is to use online resources to supplement and enhance your traditional education. Many online courses have a diverse selection of courses, including a wide variety of college-credit courses. These courses can help you prepare for learn professional development skills, exams and even rises your degree progress with college bonus point, while still allowing you the freedom to participate in extracurricular activities or chat in-person with professors and classmates.

In brief we can say MOOCs have following advantages:

• E-Learning can adapt different learning styles and facilitate learning through a variety of activities.

• Computers skills and Develops knowledge of the Internet that will help learners throughout their lives and careers.

• Successfully completing online or computer-based courses self-confidence builds self-knowledge and encourages students to take responsibility for their learning.

• Reduces conveyance time and conveyance costs for off-campus students.

• Students may have the option to select learning notes that meets their level of interest and knowledge.

• Students can study anywhere they have access to a computer and Internet connection.

• Course work can be scheduled around family and work.

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• Flexibility to join discussions in the bulletin board threaded discussion areas at any hour, or visit with classmates and instructors remotely in chat rooms.

• Instructors and students both report E-Learning foster more interaction among students and instructors than in large lecture courses.

Limitation with MOOCs

While massive open online courses have significant potential for educating large numbers of students in a variety of settings there have also been a number of problematic issues identified for this educational option. Understanding and reacting appropriately, to these issues is critical to the successful implementation of these courses, whether they are offered in relatively small settings or through large-scale systems with thousands of participants[12].

Sustainability

According to Global Industry Analysts (2010), the global e-learning market will reach $107 billion by 2015. However, it is not widely clear how the MOOC approach to online education will[11] be commercial. Most MOOC start-ups do not appear to have clear business models and are following the common approach of start-ups by building worrying and fast about[11] revenue streams later[11,14].

Some common approaches to generate revenue are considered by some start-ups and Coursera working in partnership with HEI[8], including charging students a fee for[11] certificates of participation, completion or even transcripts; providing premium services such as recruiting tools that link employers with students whose have shown[11] the ability in a given area and philanthropic donations from individuals and companies. However, it is a significant challenge for partner universities to generate earnings in these ways. In established business models, universities have control of the customer value proposition in that they provide any recognition of set tuition fees and learning. For MOOCs, most participating institutions have decided that they will not offer credits as part of traditional awards for these courses, probably as a result of concerns[11] about the downside risks and quality of the Courses posed to their branding. It would be also against the initial ideals of MOOCs if universities started to charge[11] tuition fees for their courses work. Therefore, many institutions participating in MOOCs consider the courses they offer to be a marketing activity and branding at present.

Pedagogy

There are following concerns regarding pedagogy for MOOCs:

1 Do MOOCs follow a sound pedagogy and organizational approach to online learning that will lead to quality outcome sand experiences for students?

2 What new pedagogies and organizational mechanisms might be required if MOOC are to deliver a high quality learning experience?

MOOCs have been criticized for adopting a knowledge sharing platform model in essence, they are assume to be technology-enriched traditional teacher-centered instruction. Such systems offers an individualized experience in that they allow students to get a alternative way through offer automated feedback[14] and material. However, they do not provide a social learning experience or one of being dealt with personally. Coursera leaves the design of the courses up to the each institution within broad guidelines[8]. However, it is likely that few institutions have enough staff with significant working knowledge of online pedagogy included in the development of these courses. By contrast, MOOCs provide great opportunities for non-traditional forms of teaching approaches and learner-centered pedagogy where students learn from one another. Online communities and forums answers to problems, creating networks that distribute learning in ways that seldom occur in traditional classrooms in universities. For example Institutions, like Edinburgh and MIT University are using MOOCs as an experimental venture to participate in emerging pedagogical models, using peer assessment techniques and exploiting peer support.

Quality and Completion Rates

In most cases, compared to other online courses, MOOCs rarely include the central role of the instructor or teacher and lack structure. They are largely own-directed learning, which is a very different experience to formal education. The openness of MOOCs provides a population that is self selected to be passionate and engaged about this approach to getting knowledge. MOOCs demand a certain level of digital literacy from the participants, which has raised concerns on inclusivity and equality of access[14].

Typically, there tends to be little formal quality assurance for MOOCs. It has been advised that one approach could be for them to be evaluated by learners and educators, leading to league tables that rank the courses by the good quality of the offering. In this way, it is possible that courses from institutions and individuals that rate poorly will survive by improving course quality in response to poor ratings or will either disappear due to lack of demand. Arguably, for MOOCs, the most significant form of quality assurance and enhancement comes from the informal evaluations of the enthusiasts and reflections that put on the courses and comments from participants using social media sites.

Credit and Assessment

Most MOOCs use quizzes as their main instrument of assessment – short multiple optional questions with

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automated answers for feedback. Some may offer other types of assessment that require open responses, but with limited resources it is not possible for thousands of essay assignment tasks to be marked by one lecturer. Some MOOCs rely heavily on peer assessment and engagement to support the individual student's learning process. Coursera, for example, add submission of essay style answers, graded through peer assessment, to balance the scale with the available resource. Some concerns are expressed around cheating and plagiarism with online education, particularly where courses are eligible for academic credits[16].

On the one hand, MOOCs' scale may magnify the issue; on the other hand, the majority of MOOCs do not offer academic credit points so there may be fewer concerns in this respect. Measures taken by MOOCs to avoid the issue include Coursera teaming up with Pearson test centers to provide in person examinations[3,8].
MOOCs always give to participants many opportunities to earn badges or get certificate of completion. In some cases, they may even be able to gain credits towards a degree qualification. However, it has been mostly observed that most learners using MOOCs are people who already have a degree. In this case, whether the course carries credit seems not more important compared to whether they have evidence through certification that they have participated in a program of learning and that they can present to an employer as evidence of professional development[15, 16].

Few MOOC Platforms for Education

At the starting in 2012, few organizations like Udacity[3], edX[3] and Coursera[8] — started to dominate conversations about MOOCs. These organizations have the a lots of catalogs of courses and they are where most students interested in MOOCs still start their experience. Those have kept changing and growing as they figure out new ways to attract students. For example, all have made significant changes to their business models. So much so that one of them arguably can't be described as a MOOC anymore.

And not only do they have many classes, they have different types of classes than they first did two years ago, as well as new kinds of credentials that you can earn as well.

What do all these changes mean for you, the student? In this post we'll examine the major differences between these platforms and sum up their pros and cons. There are some platforms whose provide Platforms for Education.

(a) Class2Go

MOOCs courses have been around for a few years as collaborative techie learning events, but this is the year everyone wants in. Elite universities are partnering with Coursera at a furious pace[8]. It now offers courses from 33

and more of the biggest names in postsecondary education, including Princeton, Brown, Columbia and Duke. Stanford unveiled Class2Go[3, 8] with two courses and Google unleashed a MOOC-building online tool.

(b) edX

edX[3] is a most popular platform that offers open-source education for MOOCs. It is an open-source platform offered by edX[3,8,9].org. It is the same platform that universities such as Harvard and MIT use to offer courses to 100,000 students. It was launch as open source in March 2013[8]. The goal of this tool is to learn something new, get a job, get in shape, wordpress, and allowing participant to expanding the functionality etc. edX[3] is a Django application; it is responsible for robust course-management platform and flexible. It also has the Future scope of organization include aspect of learners or users.

(c) Course Sites by Blackboard

Course Sites by Blackboard[8,9] is an exceptionally robust platform. It has most of the features that Moodle has, including extensive Studying tools, reporting features and SCORM[9] compliance. It is also cloud-based. You can set up a course in minutes and never have to worry about maintenance or upgrades. The service is free for up to first five live courses, and Blackboard has given no indication that this will change. The trade-off seems to be that your courses are branded with the Blackboard logo, and your students should register with Blackboard in order to participating to a course.

Course Sites is a good option for individuals for example, a teacher who wants to transmigrate part of a curriculum to an online format or organizations looking to[10] start experimenting with online courses without having to install anything. The five-course maximum and the incapacity to brand your course place limitations on how this platform can be applied[9]. But with the costs highest number of features and the lowest maintenance, Course Sites is a good option.

(d) Udemy

In The beginning Udemy[9,10] specially design for private MOOCIt is like YouTube MOOC. The people have design or build own course on the Udemy platform and offer it to use open source by free or some fee.

Udemy can use this mapping for individual or a group for build basic and professional course one to one, one too many, many to one and many too many. The platform like videographer, designers, CorelDraw, editing and any other specialist who want offer him/her knowledge from an online course. Udemy have 2,000,000 registered[9,10] learners. When any individual build a course on Udemy, are able to reach this pool of potential learners.

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(e) Versal

Versal[8,9,10] is an intriguing new platform. Its major strengths are a sleek, intuitive user interface and a robust drag-and-drop functionality. A student or user can sign up for free and then build a course that includes science materials, mathematical expressions, image drill-downs and many more widgets, all without any coding knowledge[8]. Users can also embed own courses on other websites[8], such as personal forums and blogs. Versal can't fairly be called a MOOC platform, because it lacks certain MOOC elements[8,9]. In particular, there is currently no any forum for sharing and discussion functionality. Instead, it can be thought of as a strong tutorial platform.

(f) Moodle

Moodle[8,9] is also an open-source learning management system (LMS) that allows users to build and offer online courses[8] like Versal platform. It was built for traditional online classrooms rather than MOOCs, which attract a large number of students. It tends to be easier to confider and install than other online platforms, and there are hosted or one-click install options available.

Moodle is suited for many organizations that want a full-featured, customizable LMS9. The platform offers more learning things than edX[3] in terms of educational tools, analytics and SCORM compliance[9]. The trade-off is that the MOOCs platform is over 10 years old. The number of configuration options can be daunting, and system performance suffers with larger numbers of students[8].

(g) SWYAM

SWAYAM Platform started by MHRD, Government of India in 2016. Design of this platform is mainly based on three principles of Education Policy, Viz., access, equity and quality[25]. It facilitates hosting of the entire course taught in classroom from 9th class to graduation to be accessed by anyone, anywhere at any time[25]. The SWYAM platform course structure is divided in four parts i.e. Video lecturer specially prepared reading material that can be downloaded/printed, self-assessment tests through tests, quizzes and online discussion forum for clearing the doubts[25]. Courses available on SWYAM platform are free of cost to the learners.

Few Common Problems with Massively Open Online Courses

MOOCs are free, publicly-available classes with high enrollment. With MOOCs, you can enroll in a course at no cost, do as much work as you please, and learn just about anything from computer science to transcendental poetry.

Platforms like edX[3], Coursera, and Udacity bring together colleges and professors that want to contribute to the field of open education[3]. The Atlantic called MOOCs "the single most important experiment in higher education" and there's no doubt that they are changing the way we learn.

However, not everything in the world of open education is going well. As MOOCs have become more popular, their problems have become more pronounced.

(a) No Instructor

One of the largest problems with MOOCs is their impersonal nature. In many cases, thousands of students enroll in a single section with a single instructor. Sometimes the instructor is only a "facilitator" rather than the course creator, and other times the instructor is absent all together[15].

Assignments prepared to be interactive such as group discussions can reinforce the impersonal nature of these large courses. It's hard enough for a class of 30 to get to know each other, forget learning the names of your 500 peers.

For some subjects, particularly those that are science and math, this isn't a major problem. But, arts and humanities course traditionally depend on in-depth discussion and debate. Learners often feel that they are missing something when they study in isolation.

(b) Learner without Feedback

In today's traditional classrooms, the point of instructor feedback isn't just to rank students. Ideally, students are able to catch future mistakes and learn from feedback. Unfortunately, in-depth feedback simply is not possible in most online courses. Many instructors teach unpaid and even the most generous simply aren't capable of correcting hundreds or thousands of papers a week. In some cases, MOOCs provide automatic feedback in the form of quizzes or interactive. However, without a mentor, some students find themselves repeating the same mistakes over and over again[16, 17, 18].

Few make it to the Finish Line

MOOCS: Many will try but few will pass. Those high enrollment numbers may be deceiving. When enrollment is nothing more than a few mouse clicks, getting a class of 1000 can be simple. People find out through social media, blog posts, or internet surfing and enroll in just a couple minutes. But, they soon fall behind or forget to login to the course from the beginning.

In many cases, this isn't a negative. It gives student the chance to try out a subject without risk and allows access to materials for those that may not be willing to make a larger time commitment. However, for some students, the low completion rate means that they just weren't able to stay on top of the work. The self-motivated, work-as-you-please atmosphere doesn't work for everyone. Some students thrive

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in a more structured environment with set deadlines and in-person motivation.

Forget About the Fancy Paper

Now days, there is no way to earn a degree by taking MOOCs. There has been a lot of talk about awarding credit for MOOC completion, but small action has been taken. Although there are some ways to earn college credit, it is best to think about MOOCs as a way to enrich your life or further your education without receiving formal recognition.

Academia is about the Money

Open education organization has offered many plus points to learner. But, some worry about the negative repercussions to teachers. In many cases, professors are developing and teaching MOOCs for free. While professorial pay has never been particularly high, instructors used to be able to count on making supplemental income from additional teaching assignments[17, 18], research, writing and textbook. When teachers become expected to do more for free, one of two things will happen: colleges will need to adjust salaries accordingly or lots of the most talented academics will find work elsewhere. Learners get benefit when they learn from the brightest and best, so this is a concern that will increasingly affect everyone in the academic sphere.

Evolution of MOOCs Teachers and learners

Following on from the development of Open Education Resources and the Open Education movement, the term Massive Open Online Courses (MOOCs) was first introduced in the year 2008 by Dave Cormier to describe Siemens and Downes Connectivism and Connective Knowledge course[5,6]. This online course was initially designed for a group of twenty-five registered, fee paying students to study for credit and at the same time was opened up to registered only learners worldwide. As a result, over 2,300 people participated in the course without paying fees or gaining credit[22]. In 2011, Sebastian Thrun and his colleagues at Stanford[11] University opened access to the course they were studying at the university 'Artificial Intelligence programs' and got the attentions of approx 160,000 learners in more than 190 countries. Since then,

MOOCs have become a standard label for many recent online course initiatives from commercial organizations, individuals and institutions[23,24]. Initially original aim of MOOCs was to open up education and provide free access to university level education for as many learners as possible. In contrast to traditional university online courses, MOOCs have these two key features.

- Open access - anyone can participate in an online course for free
- Scalability - courses are prepared to support an indefinite number of learners.

However, these features may be interpreted differently by different MOOC providers; some MOOCs are some are open but not massive and massive but not open. Wiley in year 2012 observed that the ambiguities in the concept of MOOCs may pose a threat to the future development of open educational resources and open courses where the ordinary public will perceive free is good enough and no one will care about open. This generates questions about the licensing and permissions of current MOOC laws and how it relates to the creative commons licenses promoted by the open access educational resources community. The development of MOOCs is rooted within the ideals of openness in education, that lore should be shared freely, and the aspiration to learn should be met without demographic, economic, and geographical constraints. As figure 1 show, since 2000 the concept of openness in education has been exploring very fast, although it has its origins in the early 20th century (Peters, 2008). Massachusetts Institute of Technology (MIT) established Open Course ware in year 2002 and the Open University set up Open Learn in year 2006, representing an ongoing development of the open education movement. Influenced by the early development of MOOCs, various open learning platforms have been stabilized by elite institutions; examples from year 2012 include MIT edX[3], and in the year 2016 MHRD Government of India Launch MOOCs i.e. SWAYAM Platform OU's futures learns. An important key message that emerges is that the evolution of MOOCs is leading to more players in the market as HEI and private organizations seek to take advantage of these innovations in online learning.
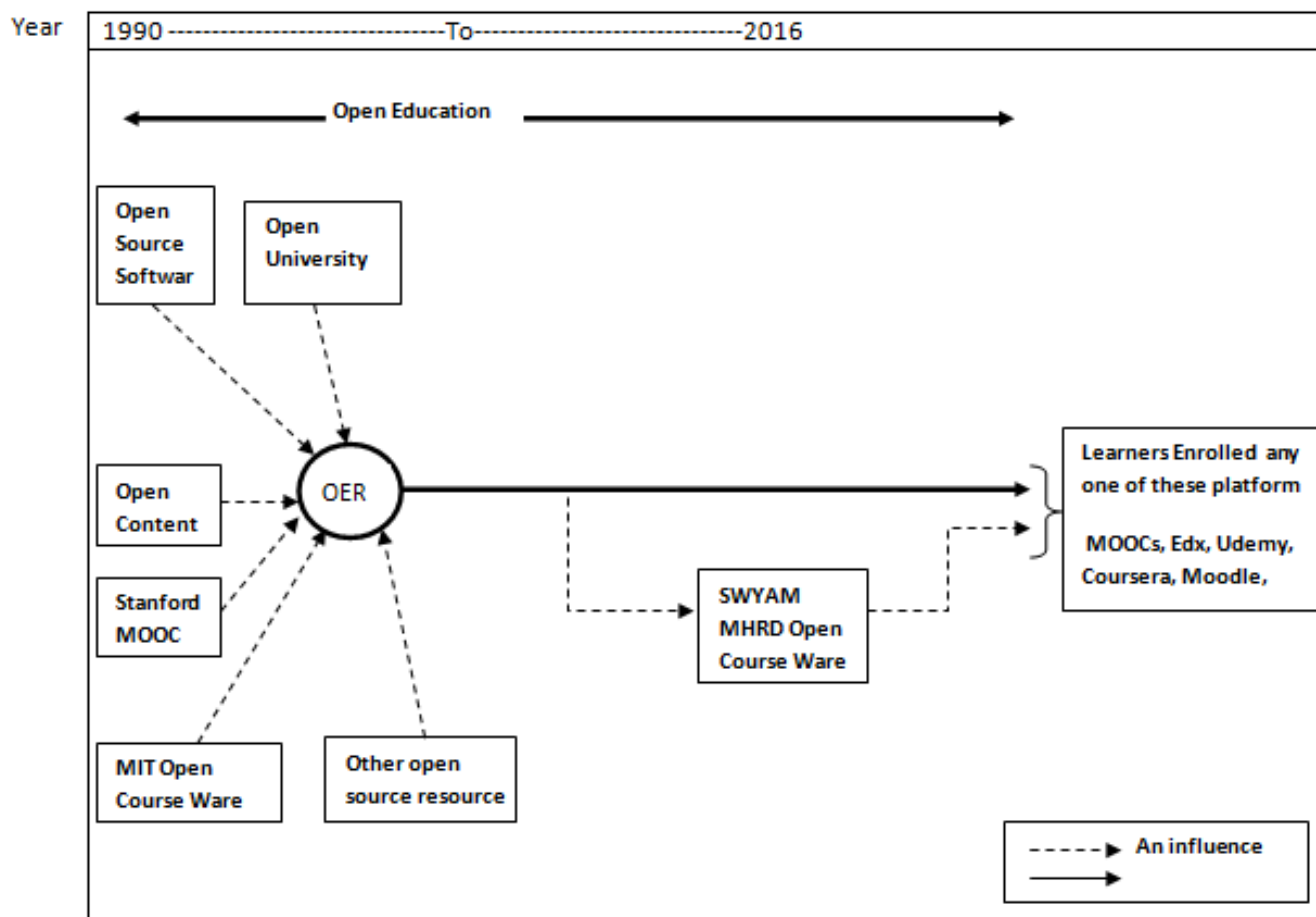
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Figure1. Different platform of MOOCs

III. Future of MOOCs

MOOCs were initially designed as a tool to educate the masses and provide general access to academia's towers. It is an admirable goal, but as MOOCs were launched and some students were actually finishing the courses, some academic leaders were beginning to rejecting the idea of the disruptive MOOC. While the academics may have doubted the future of MOOCs, many schools are still experimenting and using MOOCs to their benefit[5] widely.

Organizations like Coursera[8] and Udacity[3] started the MOOC sensation, but now more universities are also using MOOCs alongside traditional classroom courses[3]. Georgia Tech has partnered with AT&T and Udacity to offer the first accredited Master's program in Computer Science that will be taught exclusively through the MOOC patterns[3]. The degree will cost students significantly less at $7,000 than if they were to take courses through the traditional residential program.

Along with Georgia Tech's MOOC integration, other institutions have begun MOOC starts as well. MIT and Harvard teamed up to create edX[3], a shared MOOC platform for universities to offer a wide-range of courses for free. Organizations like Coursera published courses for credit by Johns Hopkins University and the University of Maryland College[8]. Many universities are not only offering MOOCs, but they are learning about teaching from them. With a lots number of students taking one course, large amounts of data can be derived from what teaching methods work and what does not.

A study by Babson Survey Group got that nearly half of organizations and institutions that invest in MOOCs do so for outreach and marketing. Branding and recruit purposes are just another way in which MOOCs are now vindicating themselves to be a valuable platform and tool for universities. However, few university professors are not accepting MOOCs joining the college campus experience. San Jose University professors wrote a letter to a Harvard professor showing why they are refusing to teach the MOOC, he developed for edX[3]. MHRD MOOCs by SWYAM[25] platform is help to generate the quality education and enhance him/her bright career in interested area. In Indian university faculty are accepting or not accepting MOOCs joining the college campus, is future study issue. Among other reasons, the San Jose professors stated that Professors who care about public education should not produce products that will replace professors,

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dismantle departments, and provide a diminished education for students in public universities.

In the same vein, a MOOC professor Duneier, recently told the Chronicle of Higher Education[11] that he would no longer teach his MOOC class out of fear that such courses would dissipate funding for public education.

As universities figure out what to do with the technology of MOOCs, 2016 will continue to see different applications of online courses. It is dissipate that schools are using them in more ways than one and they will continue to go through changes as the technology is realized.

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