

# Analysis on Massive Open Online Courses (MOOC): Opportunities and Challenges towards 21st Century Online Education

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## ABSTRACT

*Online education is getting in to everybody life in one way or the other. People in today's fast moving world want to tap the job market at the earliest stage itself rather waiting to complete their higher studies and then get into job market; this in one way have created a boom for online education providers to build courses online that enable the working class segment to do their studies online and complete the course during their free time. Question now asked in job market is how competent you are; they are not much interested in the way you acquired it by online course, degree from a college/university; what matters is how you have mastered the competency and can use the same in your job role. MOOCs are the educational catchword of online education with a difference; since leading university are conducting the courses through online and it enable to reach to masses. This research paper will discuss about the MOOCs in a wider context of how it will have an influence on higher education system and followed by a detail analyze on the opportunities and challenges that MOOCs is facing it presently and the how the future is going to be? Model of MOOC and its implication on Higher Education System will be explored. And also MOOCs education providers can they maintain quality of materials. Is MOOCs is a myths and will it explode in long run or it will have a tsunami effect on the traditional universities that they need to relook their strategies to suite the future trends in higher education. Finally the outcome of the research will also give an idea for the students to know what can be expected from the MOOCs providers and whether their certificates are authenticated in the job market and do MOOCs has recognition or not.*

**Keywords:** Massive Open Online Course, Higher Education, Higher Education System, Higher Education Institutes, Higher Education Authority

## 1. INTRODUCTION

MOOC is taught over the web by leading university staffs and research students, to a large number of students as free course. A MOOC is an online course aimed at large-scale interactive participation and open access via the web. In addition to traditional course materials such as videos, readings, and problem sets, MOOCs provide interactive user forums that help build a community for the students, professors, and teaching assistants (TAs). MOOCs are a recent development in distance education (Lewin, Tamar, 2013) MOOC is further a new approach in distance learning concepts with a difference. Some university want to introduce the MOOC concepts in some form or rather so that they can have their courses run online. Many leading universities have planning or already rushed to offer MOOC that are backed by top corporates and foundations that fund the programme. The Interesting fact is Council on Education in America is moving forward in certifying few of the MOOC courses as equivalent to university credits for some modules, so that the students can utilize the credit point as exemption when they get into the university full time degree programmes. Several institutions are already on the process of how to grant equivalent recognition for MOOCs and few want to use and try in teaching. This research will analyze the opportunities and challenges that MOOCs is facing it presently and how the future is going to be? Model of MOOC and its implication on Higher Education System will be explored.

### 1.1 Research Objective

1. To analyzes the opportunities and challenges that MOOCs is facing it presently and the how the future is going to be?
  - a. To critically evaluate / review the MOOC's qualifications (MOOC's certificates in the market) compare to other education providers
2. To review the Implication on Higher Education System of India and Singapore over the MOOC Model will be explored
3. To explore / recommend the future shape of education models from the findings along with my opinion and recommendation

### 1.2 Research Hypotheses

Research hypotheses are the precise testable estimates made by the independent and dependent variables in the study. It is basically help in a research process by defining at an initial stage of description to be tested. Since the study will be based on India and Singapore's implication of MOOCs, The author will base the questionnaires to the University professors, students and corporate clients. Due to time constraints the sample of interviewees will be taken from India's major cities (Chennai, Bangalore and Delhi) only as well the whole of Singapore. Assuming the standard deviation of the sample data

collected from the survey; appropriate statistics will be drawn and analyzed for the study.

### **1.3 Research Issue**

Over the years internet has played a tremendous role in providing information to the people around the world in just a click of a button. In present generation world, people are so busy with their work and stress out life style that they don't get enough time to do their full time college or university to upgrade their skills and knowledge due to fear of losing their present full time job. Introduction of MOOC by top rated university has created a huge volume of peoples to pursue their learning at their own pace of time through online learning, since it is provided by some free of cost as well. Considering the spread of MOOCs as a fast learning medium, it also involves some risk about its credibility and its recognition of its certificates by the employers. Since the assessments can't be monitored whether it is the work done by the person who registered in the course or someone else did it for him/her. Other aspect of concern is its quality of courses and the instruction of delivery is different from the normal education system of content-based approaches. In one way the intention of MOOCs is a charitable one funded by top leading corporates and university to provide education to people at free of cost but on the other hand it may go in to as business intention later. Whether the approach is going to be charitable or business intention; the issues and challenge for having a sustainable model for MOOC is the key concern.

### **1.4 Research Questions**

1. Evaluate the future of MOOCs and its challenges, its implication with regular academic learning approach.
2. Comparative analysis to find and review the MOOCs certificate credentials with other education providers
3. An review on the MOOCs present and future models will be analyzed
4. Finally a review will be done based on the findings of the survey

### **1.5 Research Contribution**

The hype and myths around MOOCs has raised many concerns and criticisms in educational system around the world. This research will highlight the issues relating to sustainability (business models), quality of delivery of the course and its creditability in the corporate world. This research will give a tremendous input and act as a guideline to those who want to pursue their education through MOOC's. Second part of it will focus on the implication of MOOCs in Singapore and Indian Higher education system where there is not much research work is undertaken will be touched on this side lines as well. The key importance of this research will enable to know where MOOCs is leading and what its future is and what we need to know about it will be provided in a nut shell along with facts and recommendations.

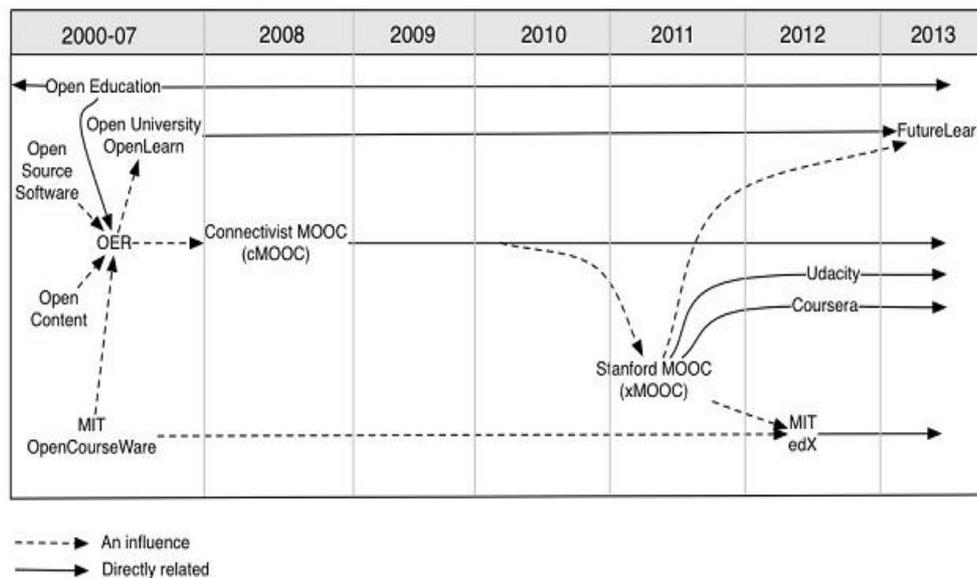
## **2. LITERATURE REVIEW**

Author has described a short history of MOOCs since the term emerged in 2007. Although Stanford's president talks breathlessly about a 'digital tsunami threatening to sweep aside conventional university education' (Boxall, 2012), John Mitchell, the vice-provost responsible for online learning, rather echoes the MIT approach: 'I think everyone agrees there's something very exciting going on here. So how do we as a university participate in that? What can we learn about teaching and learning through experimenting with different forms of technology? So I think we're going to treat this as an intellectual question and an academic investigation in some sense' (Weissmann, 2012). Elsewhere he observed: 'we really want to see what works. We've started out in one direction with Coursera – which is a great company and its great working with them – but it's not clear that the current mode of producing courses is where we're going to end up in five years' (Lewin, 2012a). Following on from the development of Open Education Resources and the Open Education movement (Yuan, et al., 2008), the term MOOCs was first introduced in 2008 by Dave Cormier to describe Siemens and Downes' "Connectivism and Connective Knowledge" course. Early in 2012 Stanford University offered a free, chunked course on Artificial Intelligence online and about 160,000 people signed up. One of the faculty members involved, Sebastian Thrun, went on to found Udacity, a commercial start-up that helps other universities to offer xMOOCs (Meyer, 2012). Key theme of MOOCs was to provide education free and to reach out to as many students as possible by give them free admission to university equal education through online teaching; and should not have any constraint with regards to demographic or economic. Wiley (2012) pointed out 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 general public will perceive 'free' is good enough and no one will care about 'open'. This raises questions about the licensing and permissions of current MOOC provision and how it relates to the creative commons licenses promoted by the Open Educational Resource (OER) community (Wiley, 2012). Other talk is on the difference between the cMOOC and xMOOC always people some time confuse with the two with MOOC what it is actually. In cMOOC setting the applicants in the course enrolled in the course will take both role of a teachers and students, by engaging and sharing their knowledge through constant interchange and interaction using technology whereas On the other hand, the instructional model (xMOOCs) is essentially an extension of the pedagogical models practiced within the institutions themselves, which is arguably dominated by the "drill and grill" instructional methods with video presentations, short quizzes and testing. (Li Yuan and

Stephen Powell, 2013). xMOOCs is still based on the instructivist approach – which is based on behavioral/cognitivist learning theory, where the learners master the content, probably with the transfer of knowledge from one person or a number of persons (the professor(s)) or the machines (robot or virtual teacher), or information source to that of the learner. (Mak, 2012) NUS is the first Singapore higher education institution and one of 62 university partners to join Coursera from February 2013, and one of How many universities from Asia, adding 2 new courses to Coursera’s over 300-item course list. The two NUS-Coursera MOOCs are expected to begin in January 2014. The online learning trend is growing steadily in Singapore, with more than 20,000 people having signed up for free courses offered by top foreign universities like Stanford and Harvard. (The Straits Times, 2013).

**2.1 Critical Analysis of MOOCs**

Check out the **Figure 1** that gives a clear picture of how MOOCs evolution has started which is illustrated by Peters in 2008.



**Figure 1: MOOCs and Open Education Timeline**

[Source: <http://www.shirky.com/weblog/2012/11/napster-udacity-and-the-academy/>]

Key MOOCs Players in the Market & their Present Status are broadly Table 1 in a comparison chart in a nut shell that gives an impression whether the MOOCs player where do they fall under the charitable nature or business model as discussed earlier.

**Table 1: Comparison of key aspects of MOOCs Providers or Open Education Initiatives**

Initiatives	For profit	Free to access	Certification fee	Institutional credits
eDX	x	✓	✓	x
Coursera	✓	✓	✓	x ✓
Udacity	✓	✓	✓	x ✓
Udemy	✓	x ✓	✓	x ✓
P2PU	x	✓	x	x

Key

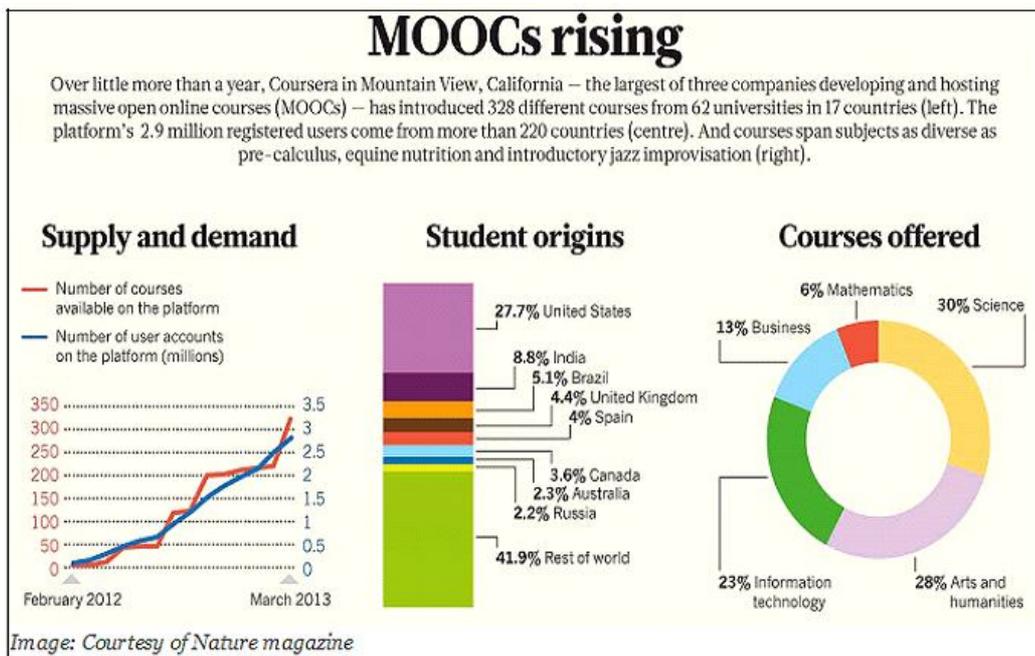
- x Not a feature
- ✓ Feature present
- x ✓ Features partially present

On analyzing the three major players and found a critical analysis on their potential business model of operations as shown in the **Table 2**.

**Table 2:** Overview of Potential Business Model

edX	Coursera	UDACITY
<ul style="list-style-type: none"> <li>• Certification</li> </ul>	<ul style="list-style-type: none"> <li>• Certification</li> <li>• Secure assessments</li> <li>• Employee recruitment</li> <li>• Applicant screening</li> <li>• Human tutoring or assignment marking</li> <li>• Enterprises pay to run their own training courses</li> <li>• Sponsorships</li> <li>• Tuition fees</li> </ul>	<ul style="list-style-type: none"> <li>• Certification</li> <li>• Employers pay for recruit talent student</li> <li>• Students résumés and job match services</li> <li>• Sponsored high-tech skills courses</li> </ul>

The theory of disruptive innovation (Bower and Christensen, 1995) offers an explanation as to why some innovations disrupt existing markets at the expense of incumbent players (Harvard Business Review, pp.41–53). Here author will research on how MOOCs going to have an impact on higher education institutions that poses a threat to their existing models of providing of degree courses will be widely explored through conducting survey in India and Singapore as stated. The rise of MOOCs is getting too popular among the students from different countries worldwide and it is seen as future visible trends in HE today. MOOCs are being developed to make education more open and accessible at a considerably lower cost. However, significant questions and hurdles remain as to how MOOCs will shape the industry. Ovum anticipates that the MOOC phenomenon will evolve over the medium term to serve less as a standalone initiative and more as a catalyst for broader change in the industry, including such elements as how courses are consumed, how education is financed, and how learning is accredited (Navneet Johal, 2013). Final conclusion emergence of MOOCs is creating a storm and that is making ways for additional institutes to venture in to as HEI and for the private sector organizations wanted to utilize this opportunity and take it has their advantage in creating and adding more improvements in online learning. There are many university started their process of how to get into the MOOCs trend and they are rushing to it before it is too late. All the fields of study is getting popular in to MOOCs learning curve whether it is engineering and technology or science courses that are forefront of the offering, but now humanities, management and arts course are also getting more popular. See the **Figure 2** that gives an idea of how MOOCs is rising to a record number within a short period of time. From the statistics it shows India is in the second position with 8.8% in lead next to US. It shows a large acceptance of MOOCs in India by many students.



**Figure 2:** MOOCs Rising

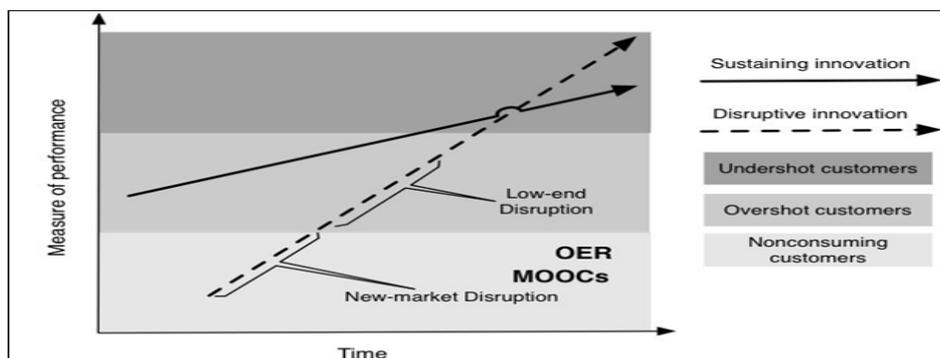
[Source: <http://www.scientificamerican.com/article/massive-open-online-courses-transform-higher-education-and-science/>]

Concept of open education is getting more popular and more education institutes want to join the race across the world. Giving knowledge to everyone at free of cost is the idea which attracts learners but on the other hand it is seen as a panic button for the publishing houses as well the education institutions whose idea is to sell their courses as product. OER concept has come up as a virus in the society making everything accessible through volume of databases, more virtual university is coming up with this idea. Passing rate of students in MOOCs are not too satisfactory level, Meyer (2012) reported that the dropout rates of MOOCs offered by Stanford, MIT and UC Berkley were 80-95%. For example, only 7% of the 50,000 students who took the Coursera-UC Berkeley course in Software Engineering completed. If the aim is to give the opportunity of access to free and high-quality courses from elite universities and professors, then high dropout rates may not be a primary concern (Gee, 2012). It was a need to find out why there were too many dropout students in MOOCs courses to find that out a study was undertaken by “Stanford University's Learning Analytics group” there main target of students they classified into different groups for their study. Look out the details in **Table 3**.

**Table 3:** Data by percentage (Stanford Report, 2013)

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

Next critical analysis when we look into its sustainability and disruptive innovation see **Figure 3**; Christensen pointed out that established market leaders are often extremely good at exploiting sustaining innovations in order to achieve the short-term company growth but it is new companies that emerge to exploit disruptive innovations (Christensen, 2003).



**Figure 3:** Sustaining Innovation, Disruptive Innovation and MOOCs [Source: Christensen, C., M. (2003). *The innovator's solution: creating and sustaining successful growth*. Harvard Business Press.]

Now the factor to look into it is how the HEIs are going to cope with the emerging MOOCs culture and its disruptive innovation. Education trend is moving towards technology and social media and gaining more attention from the learning community. Disruptive innovation is going to redesign the future education markets and it is moving its focus from top educational institutes to new start-ups that can bring a huge difference. In everybody mind the question raise is whether MOOCs is the next buss word in online education and how far it is going to change the HEI and affects its student's enrollments in any way. Now the key is how the policy makers are think in long term future of MOOCs and HEI that are traditional in approach is going to cater to the different set of segment of students around the globe and whether it is a good approach or a bad move for all the top university to get into MOOCs model and loose its brand name of traditional university status by offering course through MOOCs; it is billion dollar question to be answered and lot of debate is on in this topic and still a war of words are flowing in between the educational experts about the growth of MOOCs popularity whether to adopt it in what it is now or have some pedagogy approach added to it and streamline the process of delivery and monitoring of assessment and certification is a key area of concerns for many.

### 3. RESEARCH DESIGN AND METHODOLOGY

#### 3.1 Research Philosophy Paradigm

This research is mainly applied with two research philosophy paradigm, positivist research and phenomenological research (Dermot Moran, 2000). Phenomenology is to study on subjective lived experiences (Lacey, 1996). David

Woodruff Smith (2005) described phenomenological research as a method that to understand an individual's personal consciousness, perception, feeling and intentions by analyzing reality, appearance, element and feel of the objects. This research tries to understand the "why" and "which" factors affect in Students, Academicians, and Corporates to adapt to MOOCs by phenomenological research. Furthermore, this research tries use positivism philosophical view to study; it is built on natural sciences, scientific conducts of data resulting from consumer's sensory knowledge whereas positivist research we first do a statistics and later examining these facts of statistical data and the hypothesis of result (August Comte, 1798) to know influence of "what" influences made the Students, Academicians, Corporates to choose MOOCs.

### 3.2 Methodology

Methodology combines a philosophy theory with the suitable research methods and links a philosophical viewpoint into actual and appropriate research strategies to increase the validity of research (Cresswell, 2007). According to the philosophical research paradigm, although there are many types of research methodology applied for identifying the consumer selection behavior research, they all divided into two general levels--quantitative or qualitative research. Given that this study will be descriptive research as well, applying both qualitative and quantitative research methods will be used. Author will be using quantitative research method to find out the possible realization of MOOCs and future Students, Academicians, Corporates behavior on a broader scale survey. The research findings are statistic number, data, percentage, and number of subjects that are used for comparative purposes, which is to find a relationship between empirical phenomenon and quantitative expression, also it is known as empirical methods that come from philosophical positivism and objectivism.

### 3.3 Research Design

Before getting to know what research design is all about, one must know what type of research he/she is going to undertake; whether it is going to be descriptive or explanatory research. People think that descriptive means more theoretical nature of study; but this gives the greater advantage of knowing "why" a good description can be more vital for further explanatory nature of research. To gather facts about the peoples mind set descriptive mechanism is good way. Like when we ask questions why people fight with each other and the crime rate is increased in the cities for the past few years, this means the explanatory view of what is taking place and why it is taken place. So in a researcher mind it is always important to know how he/she frames the questions and prepare the survey form, questionnaires' etc. related to the area of research he/she is undertaken. Since the study will be based on India and Singapore implication of MOOCs, Author has collected the data's by giving the questionnaires to the University professors, students and corporate clients. Sample size will be 200 in total, i.e., 100 from India (Chennai, Bangalore and Delhi been selected) and 100 from Singapore. The respondent's targeted numbers are (Professors 20, Students 60 and Corporate 20 people from different colleges/companies from India and Singapore respectively). Due to the time constraint and limited resources Author will only focus on India and Singapore for this survey. Key intention for this research is to find out the accurate view of the respondents what they think about MOOC and its trends of implication on their lives and the society. Author have used both the approach of open & closed ended questions to test the respondent's views and to gain the output of what they think about MOOCs through both approaches by which Author have collected quantitative and qualitative data. Data will be collected through different sources as it can be collected and make it flexible for the respondents to give their opinion, if needed Author will use email as the source as well if Author could not get their time to fill the survey forms. The questionnaire is prepared in such a way to find their opinions to know the customer satisfaction of MOOCs courses and their thoughts about the credential of its future growth and its recognition in the Higher education. There can be different ways were the customer might give their inputs which may be good or bad against the MOOCs concepts, Author's aim is put down in three different section as shown in **Table 4** in terms of questionnaires' when Author was preparing at the later stage.

**Table 4:** Section of Questionnaires

Unit	Content
The purpose of this Survey	Description of Overall aim
Consumers information	Demographic data
The goals of customer satisfaction	Quality of service provided, certificate recognition and its acceptability by Employers
Benefits and Knowledge	Level of Education gained from joining MOOC courses

### **3.4 Data Collection and Analysis Method**

#### **3.4.1 Primary Data Collection: Questionnaire**

The research will use a mixed questionnaire to collect the primary data, the open-ended questions and close-ended questions are all included. The open-ended question is adapt to qualitative research question, because if the respondent is allowed to answer without any limitations in the open-ended question, it can offer more accurate and detailed personal thoughts and feelings for gathering the information for MOOCs challenges and its future what the respondents think about it and the researcher will also gain an expanded result in a short time.

#### **3.4.2 Secondary Data Source**

In this research, secondary data is used in research process, and it'll verify different hypothesizes from the primary data. The secondary data are taken from official website of university that is opted to MOOCs, and the rest from Journals, Articles and Educational Expert in online education and their opinions etc. Therefore secondary data are obtained quickly and at a cheap price based on different needs for measuring respondent's opinion. It will be taken care that the validity and its reliability of secondary data's are at most accurate as far as possible and will be taken from highly reliable sources.

#### **3.4.3 Sampling**

The questionnaires have been circulated in different ways to the respondents in this study. Distribution of the questionnaires have be done on case by case basis depend upon the situation and the respondents wiliness to respond accordingly. For example university professor, Author meet them in person and got their feedbacks, but some time due to their busy schedule it may not be possible to get their timing. So emails were used as a medium of information gathering at that point of time. Respondents were students, professors, and corporates. As mentioned author have also conducted face to face interview with the respondents if they are willing to spare time to do the same. As mentioned earlier due to time constraints and availability of limited resources the sample size taken was 200 in total, i.e., 100 from India and 100 from Singapore (Professors 20, Students 60 and Corporate 20 people from different colleges/companies) have been undertaken. A detail questionnaire for the survey is done and the findings consolidated and illustrated in the Table 5.

#### **3.4.4 Validity/Reliability of Data**

Validity is the term given to the degree to which a study "accurately reflects or assesses the specific concept that the researcher is attempting to measure" (Howard et al., 2005). While reliability is concerned with the accuracy of the actual measuring instrument or procedure, validity is concerned with the study's success at measuring what the researchers set out to measure. Validity means 'the extent to which a measure, indicator or method of data collection possesses the quality of being sound or true as far as can be judged in the social sciences generally, the relationship between indicators and measures and the underlying concepts they are taken to measure is often contested' (Jary & Jary, 1995: 714). From the beginning it is taken into account that the data gathered from the survey through respondents are reliable in nature so Author personally went and gave the questionnaires' to the respondents in hand and collected it from them directly and interacted with them directly in person so that the data are reliable and valid; it can be used to come to a conclusion that is what Author was attempting to measure in his research and his objective of the research is met. Author have collected the feedback from different set of respondents Professor, corporate and students from India and Singapore; this gave a wide variety of view expressed from them; In other words, would similar results be obtained if another group containing different respondents or a different set of data points were used? In this survey it was obtained by gathering data from two different countries with different respondents group. It was also taken care that the identities of the respondents are kept confidential and their details are not relived to any third person; and the research data collected is totally for academic study purpose only.

## **4.FINDINGS AND ANALYSIS**

A questionnaire survey was done for this study to collect the data. In depth analysis on the survey was carried out; the inputs gathered are consolidated and projected in a graph for easier understanding along with the explanation and findings. Empirical evidence (also empirical data, sense experience, empirical knowledge, or the a posteriori) is a source of knowledge acquired by means of observation or experimentation (Houghton Mifflin, 2000). A questionnaire is a means of eliciting the feelings, beliefs, experiences, perceptions, or attitudes of some sample of individuals. As a data collecting instrument, it could be structured or unstructured. The questionnaire is most frequently a very concise, pre-planned set of questions designed to yield specific information to meet a particular need for research information about a pertinent topic. The research information is attained from respondents normally from a related interest area. The dictionary definition gives a clearer definition: A questionnaire is a written or printed form used in gathering information on some subject or subjects consisting of a list of questions to be submitted to one or more persons (James P. Key, 1997). Sekaran, suggests that questionnaires are an efficient data collection mechanism provided the researcher knows exactly what is required and how to measure the variables of interest. Questionnaires can be administered personally, mailed to the respondents or even electronically distributed depending on the situation (Sekaran, 2010). In this research Author have used all the tools able to his disposal and made a maximum effort to make this survey the best one. Refer the Table 5 which shows a consolidated result from the survey in a nut shell and it gives us a clear indication of what the respondents have given as their feedback.

**Table 5:** Survey results from two countries (India and Singapore) – Respondents Opinion on MOOCs - Analysis on MOOC: Opportunities and Challenges towards 21st Century Online Education – A Survey

Research Questions	Survey Results	
	India	Singapore
1. What is your gender	Male: 65 Female: 35	Male: 60 Female: 40
2. Which age group you belong too	18-29 : 55 30-49 : 20 50-64 : 20 65 and above : 5	18-29 : 45 30-49 : 23 50-64 : 22 65 and above : 10
3. Which Country you belong too	Respondents Number : 100	Respondents Number : 100
4. Your education background that you have completed	Less than High School : 1 High School : 10 Diploma / Higher Diploma : 15 Degree : 34 Master's Degree : 30 Doctoral Degree : 10	Less than High School : 10 High School : 19 Diploma / Higher Diploma : 44 Degree : 14 Master's Degree : 9 Doctoral Degree : 4
5. What is your profession?	Executive / Manager : 10 Government/ Military : 7 Teacher/ Professor : 6 Professional/ Technical : 17 Businessmen : 5 A student: 33 Unemployed : 15 Retired : 3 A homemaker : 4 Others : 0	Executive / Manager : 6 Government/ Military : 5 Teacher/ Professor : 4 Professional/ Technical : 26 Businessmen : 3 A student : 37 Unemployed : 11 Retired : 2 A homemaker : 6 Others : 0
6. Are you aware of MOOCs?	Somewhat Aware off: 45 Well Aware off: 30 Don't Know: 25	Somewhat Aware off: 55 Well A ware off: 33 Don't Know: 12
7. Are you a student of any MOOCs course?	Yes: 23 No : 37 Planning to take up later : 40	Yes: 34 No : 20 Planning to take up later: 46

Research Questions	Survey Results	
	India	Singapore
8. What is the key reason for doing MOOCs Course?	Free and Affordable : 35 No prerequisite required : 15 Flexible Timing : 23 Update knowledge : 15      Others : 12	Free and Affordable : 30 No prerequisite required : 25 Flexible Timing : 22 Update knowledge : 10      Others : 13
9. Please rate your experience in MOOCs learning process a) Ease of accessing the Course information	Among the worst : 0 Below Average : 0 Average : 3 Above Average : 7 Among the Best : 13 Don't Know : 77	Among the worst : 0 Below Average : 0 Average : 6 Above Average : 10 Among the Best : 18 Don't Know : 66
b) Availability of student support service / help line if any query	Among the worst : 0 Below Average : 2 Average : 6 Above Average : 7 Among the Best : 8 Don't Know : 77	Among the worst : 1 Below Average : 4 Average : 9 Above Average : 14 Among the Best : 6 Don't Know : 66
c) Ease of doing the course on the schedule time slot provided	Among the worst : 0 Below Average : 3 Average : 3 Above Average : 9 Among the Best : 8 Don't Know : 77	Among the worst : 0 Below Average : 2 Average : 6 Above Average : 10 Among the Best : 16 Don't Know : 66
d) Quality of the course materials provided	Excellent : 4 Good : 15 Fair : 2 Poor : 2      No Opinion : 77	Excellent : 7 Good : 25 Fair : 2 Poor : 0      No Opinion : 66
e). Quality of the online tutor	Excellent : 2 Good : 17 Fair : 4 Poor : 0      No Opinion : 77	Excellent : 5 Good : 25 Fair : 4 Poor : 0      No Opinion : 66

Research Questions	Survey Results	
	India	Singapore
10. Is there any learning/research is going on in MOOCs compare to the regular academic/university education system?	Yes: 65 No: 10 No Comments : 25	Yes: 71 No: 12 No Comments : 17
11. Whether the assessment mode of MOOCs conducted by the providers are authentic on accessing the student's credentials	Is authentic : 14 Somewhat authentic : 40 Not authentic : 30 No Comments : 16	Is authentic: 24 Somewhat authentic : 42 Not authentic : 10 No Comments : 24
12. Is the certifications issued by the MOOCs providers are valid in the job market?	Strongly Agree : 5 Agree : 20 Somewhat Agree : 24 Disagree : 40 No Comments : 11	Strongly Agree : 3 Agree : 24 Somewhat Agree : 21 Disagree : 38 No Comments : 14
13. Do you feel the certifications issued by the MOOCs providers are equalvent to traditional university certification and that can lead to exemption of few modules in mainstream degree programmes conducted by traditional University?	Strongly Agree : 2 Agree : 15 Somewhat Agree : 30 Disagree : 30 No Comments : 23	Strongly Agree : 4 Agree : 16 Somewhat Agree : 33 Disagree : 38 No Comments : 9
14. Course materials are available freely online in MOOCs model of education provided by the providers? Do you agree they adhere to copyright laws?	Strongly Agree : 5 Agree : 15 Somewhat Agree : 40 Disagree : 20 No Comments : 20	Strongly Agree : 4 Agree : 16 Somewhat Agree : 33 Disagree : 33 No Comments : 14
15. Do you prefer MOOCs over Traditional university learning process?	Yes: 18 No: 32 Prefer both : 43 No Comments : 7	Yes: 21 No: 35 Prefer both : 35 No Comments : 9

Research Questions	Survey Results	
	India	Singapore
16. Is Online education is taking its lead in to day's mainstream education system	Strongly Agree : 11 Agree : 8 Somewhat Agree : 28 Disagree : 38 No Comments : 15	Strongly Agree : 3 Agree : 10 Somewhat Agree : 21 Disagree : 43 No Comments : 23
17. Is MOOCs is hype or a reality for the future online education system?	Yes: 30 No : 41 No Comments : 29	Yes: 25 No : 45 No Comments : 30
18. Will MOOCs destroy academia?	Strongly Agree : 3 Agree : 10 Somewhat Agree : 21 Disagree : 52 No Comments : 14	Strongly Agree : 4 Agree : 7 Somewhat Agree : 19 Disagree : 55 No Comments : 15
19. Do Higher Education system need to improve to be competitive with the fast moving trend of MOOCs to stay competitive?	Strongly Agree : 11 Agree : 18 Somewhat Agree : 28 Disagree : 30 No Comments : 13	Strongly Agree : 13 Agree : 13 Somewhat Agree : 36 Disagree : 23 No Comments : 15
20. Will MOOCs model of study will leave the role of academic staff in the university job less in a course of time.	Strongly Agree : 1 Agree : 5 Somewhat Agree : 10 Disagree : 74 No Comments : 10	Strongly Agree : 2 Agree : 3 Somewhat Agree : 21 Disagree : 66 No Comments : 8

## 5. REFLECTIONS ON THE RESULTS

This section will comment and reflect further upon the obtained results. Compare the findings to similar studies with a brief discussion of the current phenomenon on the issues of MOOCs and its future. Lot of talk is ongoing with respect to MOOCs and its future when compare with the traditional academic way of teaching. From the feedback it is clear that 65% from India and 71% from Singapore have favored and said the research in MOOCs is going on and lot of research is published and still it is moving on. Whatever the hype and popularity MOOCs get in to; still when compare to the traditional academic approach is considered to be the best way of education to most of the students worldwide. HEA

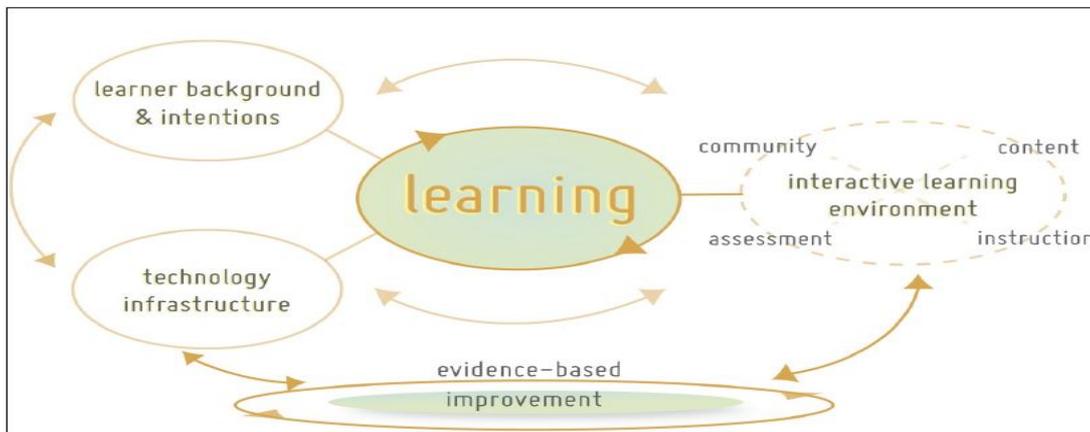
publishes first research into learning and teaching of MOOCs Research shows the place and visibility of the teacher is still important in today's HE (The guardian, 2013) The great news is that employers are starting to take learning in MOOCs seriously. MOOC credentials can't always substitute for the formal credentials necessary for a job, but many hiring managers are starting to see them as comparable to continuing education credentials. The important thing is the skills you've learned. As hiring executive Risa Pecoraro told the Boston Globe last spring, MOOCs are "a strong positive, assuming that [candidates] can prove through our interview process that the course has been effective." Because the emphasis here is on skills, MOOCs are given more weight if you can back up what you learned with a demonstration, such as a digital portfolio or an example of a project you completed for the class. (MOOCs on Your Resume, 2014). From the survey results it seems only 5% from India and 3% from Singapore respondents strongly agree that certificate issued by the MOOCs providers are accepted in the job market. Whereas 40% from India and 38% from Singapore still disagree with the opinion and they feel MOOCs certificates are not recognized in the job market and still hiring managers require proper academic qualification from a recognized university or colleges. MOOCs can't currently take the place of formal credentials in most fields, but they are starting to become an alternative credential with real weight in the job market. As more people start to put them on their resumes, hiring managers will start to have a better idea of the types of knowledge and skills MOOC students bring to the table. You worked hard to earn those certificates—don't be afraid to show off what you learned. (MOOCs on Your Resume, 2014). Everybody when joining any MOOCs providers course what come to their mind is whether the certificate is valid or not and whether they can use this for getting any exemption in the traditional university for their further studies. Through the survey results it was found that 2% from India and 4% from Singapore strongly agree that the respondent can get exemption from the regular university courses. Agree with 15% from India and 16% from Singapore respondents favor and somewhat agree got 30% for India and 33% for Singapore Overall the trend is in favor of it; but still few respondents feel to disagree with the validation and authentication when it comes to get exemption from regular university courses using MOOCs certificate. Most of the MOOCs providers are basically leading university of the world and they have come up with certificate verification mechanisms that will help both the students as well the hiring managers to verify the certificate and authenticate whether the person who did the course through online got the required skills as what it is stated in the certificate received from the MOOCs. Concept called "Verified certificate" is used in MOOCs where by paying a fee to the providers will verify and authenticate that the person who did the course is the same person who completed the course work by having his photo id, video conferencing etc. Lot of debate goes around the course materials that are been used by the MOOCs providers and how far their materials adhere to copyright law; since almost all their materials are available free online it become difficult to track and maintain as well how far they protect their materials from copyright laws is a big question to be answered. From the survey overall the respondents feel that around 50% MOOCs providers do follow the copyright law and ensure that their materials are safe and on the disagree side only 20% from India and 33% from Singapore respondents feel to disagree about it and 20% from India and 14% Singapore respondents have responded by giving no comments option. Notably, copyright ownership rights and copyright usage rights for the same material can be held by different parties. That is often the case with MOOC course materials, given that MOOCs often are a compilation of multiple contributors' works. There is no problem if everyone involved understands how the rights are assigned. "Copyrights can be co-owned. They can be shared. None of this creates problems except when not clearly understood up front." —Madelyn F. Wessel (EDUCAUSE, 2013). Getting permission for the third party online course materials is not an easy task. Here comes the key difference when teaching face-to-face and teaching through online truly displays itself in copyright law. Not just the style of teaching is different, but also the usage of its materials or resources should also be different. What is allowed in classroom teaching like showing a film for instructional purposes may not be allowed in online environment. At this point every Educator must think hard about what they want to use, whether it is really need to be used; or they can look out for some other alternatives to be used. When asked about the view of what respondents think about MOOCs over traditional university learning process? Response was quite interesting to note; 18% from India and 21% from Singapore prefer MOOCs over the traditional university learning process; whereas 32% from India and 35% from Singapore were not in favor of MOOCs. Options three was prefer both; 43% from India and 35% from Singapore prefer both MOOCs as well traditional university learning process to be there and whoever want to do according to their wish and convenience they can adopt for it rather stick with one option for the learning carrier. A revolution is coming up on its way were a MOOC-based program of education leads to a degree from a traditional / accredited institution Colleges have a problem here: the way in which the core services of education are rendered is changing, but the underlying business model is not. This widening disconnect threatens not only the financial viability of traditional campuses following the "Law of More," but, more fundamentally, their rationale (Jeff Denneen, Tom Dretler, 2012). From the survey it shows that 11% of India's respondents and only 3% of Singapore respondents strongly agree whereas 38% of India's and 43% of Singapore respondents still disagree with the online education taking the lead compare to main stream education. So debate on this topic is always hot and we may get difference of opinions every time we do the survey at different parts of the world.

Absolutely, online education is already an alternate medium of study for many students and the demand has been growing internationally. We have volunteer efforts underway to translate our materials into the world's most spoken languages to increase the accessibility (Melinda-Gates, 2012). "MOOCs can be a great way to supplement formal higher education as well as to gain cross-functional knowledge. It opens up access to quality content thereby democratizing higher education. Over 3 lakh Indian students have enrolled to MOOCs in the last few months," said Antony Alex, CEO of Rainmaker, test Management Company focused on the legal ecosystem. With an estimated 150 million people in the age group of 18-23 years, the educational sector offers one of the most attractive, yet highly complex market for the private and foreign players, said a recent Deloitte report. Currently, the government spends around 3.8% of its GDP on education. Less than 1% of the \$38 billion of the government spend on education was towards capital expenditure in 2008-09, it said (Times of India, 2013) Nanyang Technological University (NTU), one of the biggest universities in Singapore with 33,500 students, repackaged 'Introduction to Forensic Science' as a free online course for anyone in the world. The popularity of online courses are picking up at a great pace. Even the main stream education provider want to get into the ferry before it is too late to catch up with the rest. From the survey question it was found that 30% from India and 25% from Singapore respondents feel that MOOCs is hype but on the contrary respondents have favor 41% from India and 45% from Singapore say that it is not hype and it's the future for online education system. Roughly 30% from both India and Singapore has adopted for no comments. Imagine the potential of MOOCs! They claimed—universally obtainable college classes taught to millions of learners by cream-of-the-crop professors for free or very low cost. The democratization of elite education! Some even predicted that MOOCs—now boasting more than 10 million students and thousands of classes—would do nothing less than revolutionize higher education, making residential colleges obsolete in the process. But all that rises soon must fall. (Melinda Welsh, 2014). According to the gurus of innovation, the MOOC phenomenon is simply being misunderstood. As Mark Zuckerberg's character said in *The Social Network*: "We don't even know what it is yet." Will MOOCs destroy academia was the question thrown upon to the respondents and mostly respondents disagree on this. 52% from India and 55% from Singapore respondents feel that academic education or the traditional education system can't be taken over by MOOCs whatsoever the trends or popularity builds upon the MOOCs and their easier approach of doing the course will not have any major impact on it. On an average when we see strongly agree, agree and somewhat agree add up together 34% from India and 30% from Singapore feels it may destroy the academia in long run if proper measure is not taken up by the traditional universities model of system. When we look into the passing rate of MOOCs students from different university providers it is very bad compare to the traditional university passing rate. Overall passing rate is hardly 10% only whereas the enrollment for MOOCs or in thousands. [Note: for more courses of MOOCs and passing rate view the <http://www.katyjordan.com/MOOCproject.html>]. So overall academic way of education can't be destroyed overnight nor MOOCs can improve its passing rate drastically in a short period of time. Each ways of education has its advantage as well its disadvantage also, so which way of education system can suit individual; accordingly they need to select their option to pursue their carrier and improve on their skills. Let us look the statistics from the survey; 11% from India and 13% from Singapore strongly agree that HES need to improve to be competitive with the fast moving trend of MOOCs to stay competitive, followed by 18% from India and 13% from Singapore saying agreed; Disagree numbers need to be looked into, 30% from India and 23% from Singapore disagree on this. Competitiveness of the higher education system over the MOOCs was asked to the respondent to suggest what they feel about in person. Respondent general view was that improvement with respect to course material, infrastructure and flexible timing and last but not the least they want the fee should be reduced in the regular stream / academic university courses so that everyone will be benefited a lot. Since mainly due to heavy fee some of the top students can't do the courses in the reputed university due to lack of financial support. Every HES around the world need to improve on a constant basis to be competitive to match the global scenario. Improvement should be on the ground of how they govern and fund higher education, expand access to higher education, create effective accountability standards and set bold goals for achievement. Finally in the survey the last question to conclude with was an interesting one; what will be the position of academic staff working in the university – do they lose their jobs due to MOOCs popularity taking over the regular stream of education system. Survey results shows that only 1% from India and 2% from Singapore strongly agree on the stance; followed by 5% from India and 3% from Singapore has given agree status; and somewhat agree category got 10% from India and 21% from Singapore somewhat agree on it. On an average for India 16% only on the agreeing side and Singapore 27% only on the agreeing side; whereas majority feels disagree with it. India 74% and 66% Singapore respondents disagree that no way the academic staff will lose their job due to MOOCs; since when we see the courses that are conducted by the course providers are basically done by the university staff of their respective colleges only so most of it are part and parcel of the system itself, in turn rather loosing job they enhance their job skills and get extra paid for their services. It's only taken us 112 years to get a national curriculum, I don't think we've got 112 years to work out what we want to provide in the globalized digital education world.... What is a lecture worth if the best lecturer in the world at MIT is online for free for all to access? Senator Conroy's call for more rapid change highlights an urgent need

for academics to get involved in the online learning discussion now. For academics, the advent of MOOCs may be the beginning of a perfect storm where technology will provide a means to centralize courseware and provide for automated assessment for undergraduate courses. Of course, we can't know for certain but time may well prove that academics joining MOOCs now could be the first lemmings off the cliff (Senator Conroy's, 2013)

**5.1 MOOCs Models with Higher Education System**

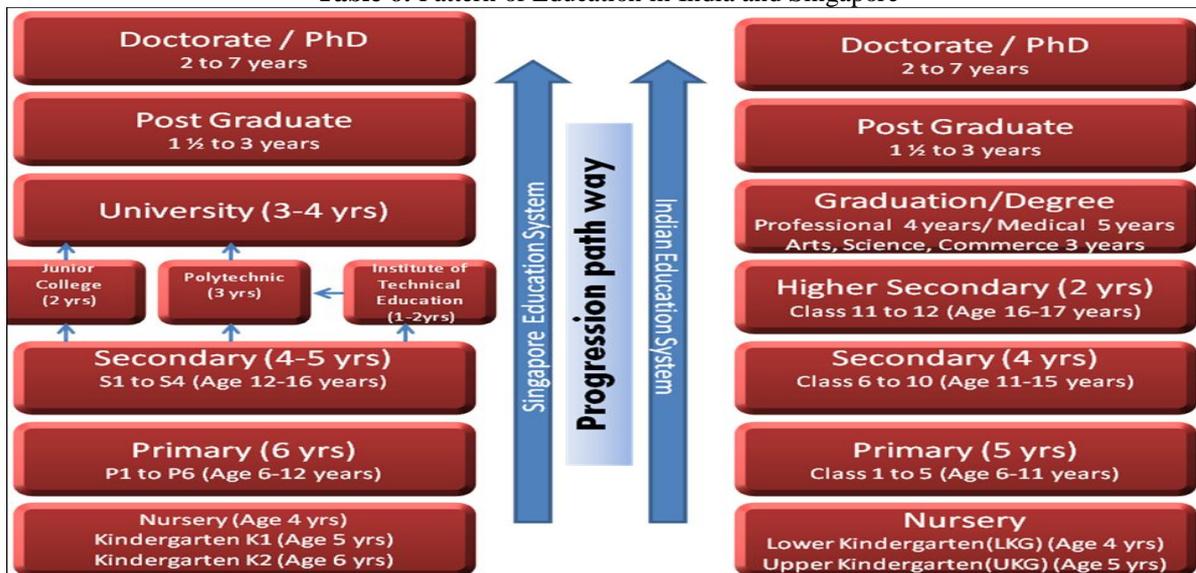
MOOCs providers are up coming and many leading providers are coming with their own framework to justify their way of approach and implementing them in the process to capture their own market share. As MOOCs proliferate and continue to influence higher education, it is increasingly pressing to define frameworks for their design and evaluation. Let's us take the one designed by Stanford Graduate School of Education; As suggested in **Figure 4**, their framework for design and evaluation envisions a MOOC as four distinct dimensions across which intelligence is distributed. While the interactive learning environment is at the core of the learning experience, learning by individual participants and of the group as a whole results from a synergistic interplay between each of these dimensions. Faculty, instructional designers, technologists, data scientists, and learning scientists together bring the expertise to shape the environment for optimal learning. Our framework also serves to guide these conversations (Shuchi Grover, Paul Franz, Emily Schneider, Roy Pea, Stanford Graduate School of Education, Stanford, CA)



**Figure 4:** Framework for Design & Evaluation of MOOCs [Source: [http://lytics.stanford.edu/wordpress/wp-content/uploads/2013/04/Framework-for-Design-Evaluation-of-MOOCs-Grover-Franz-Schneider-Pea\\_final.pdf](http://lytics.stanford.edu/wordpress/wp-content/uploads/2013/04/Framework-for-Design-Evaluation-of-MOOCs-Grover-Franz-Schneider-Pea_final.pdf)]

When Author saw the HES of India and Singapore it is totally a different level of entry for each level of the students when they want to pursue their learning through traditional main stream education system. Author has taken an article published by him earlier in IRACST- International Journal of Research in Management & Technology (IJRMT), the table that illustrates the pattern of education followed in India and Singapore. See **Table 6** for details.

**Table 6:** Pattern of Education in India and Singapore



[Source: <http://www.ircast.org/ijrmt/papers/Vol2no12012/18vol2no1.pdf>]

Education framework followed by each country academic main stream is different from one another and their policy and procedure followed in learning style, assessment methods, certificate validation and recognition of their degree and job market for its validation is different from one university to another; and each follow its own framework depends on their own criteria. Author doesn't want to illustrate in details about the same; since it is out of this research objectives; so Author have just shown the framework of MOOCs and the relevance as well the Higher education system of India and Singapore through a broad overview. It is not practically possible to say that all the universities and college may vanish as a result of new technologies, but clearly some will. If HEI embrace the status quo, they will no longer be in control of their own fate. To survive, they must change their existing business models rather than sticking with the traditional way of process.

## **6. CONCLUSIONS AND RECOMMENDATIONS**

MOOCs are still in the experimental phase, and one big part of this has been recognizing that even though MOOCs can be used to reach hundreds of thousands of students all at once, that doesn't mean they are a one-size-fits-all option that works the same for everyone. Recent efforts, like the DOCC (Distributed Open Collaborative Course), have aimed at harnessing the massive power of MOOCs to meet the needs of individual learners. The efforts of these initiatives will determine whether MOOCs ever succeed in living up to their promise of democratizing education (Anne Balsamo's, 2013). Writing in the MIT Technology Review, Jessica Leber noted the apparent potential of MOOCs to 'democratise' education with the promise of free access to top courses by elite global institutions, the report says. However, she also identified technical obstacles – mainly lack of computing infrastructure and bandwidth – and cultural barriers. To deliver on the needs of learners in less developed countries, "MOOCs would need to be tailored to a more diverse worldwide audience, not the Westernised Anglophones currently served", says the report. A DOCC is different from a MOOC in that it doesn't deliver a centralized singular syllabus to all the participants. Rather it organizes around a central topic. It recognizes that, based on deep feminist pedagogical commitments, expertise is distributed throughout all the participants in a learning activity," and does not just reside with one or two individuals (Anne Balsamo's, 2013). Online learning can help your career, but degrees are here to stay. Some say MOOCs will replace university education, but degrees still have a value. Perhaps there is space for both (Martin Williams, 2013). UK Department for Business, Innovation and Skills stated its article "Literature considering MOOCs in a global development context points to two sides of an issue of access and equity. "On one side, MOOCs are hailed as a cost-free access to excellent resources and learning experiences for students in less educationally privileged geographies, notably India, China and Africa," the report says. "Alternatively MOOCs, with their high demands for connectivity, online literacy and English language skills, may be excluding developing world students and privileging learners from the most highly developed educational environments." (Karen MacGregor, 2013). Take a quote from Peter J. Burgard is a professor of German at Harvard. He has decided not to participate in online courses because he believes the "college experience" comes from sitting in preferably small groups having genuine human interactions, "really digging into and exploring a knotty topic—a difficult image, a fascinating text, whatever. That's exciting. There's a chemistry to it that simply cannot be replicated online." As from Author's point of view is concern he favour MOOCs as well traditional university style to remain; whatever the popularity the MOOCs is gaining at the present scenario whether it will remain for a long duration and can withstand in near future is a billion dollar question mark; which now itself many researchers and universities' are started exploring its impact. So all goes what the individual want to do for his/her study through MOOCs or traditional university style of education. Author have restricted to India and Singapore context for his research and not explored other countries due to time and resource constraints; in the next stage any researcher interested to take up the survey for Asian region, Europe, Middle East etc. can be explored to have a broader view of all the different nationalities and that will give a wide area of research to be explored in the near future. Authors recommendation whether MOOCs is good or traditional learning system is good is not a matter of issue; it all depends on the individual person and his/her perception what they want to do it their education carrier and how they want to do is left to them to decide. This paper has given an in-depth analysis that can be used as reference for selecting MOOCs course before planning to take up. With respect to certification validation, to recognition of the MOOCs providers and to what extent the hiring managers are taking MOOCs course is well discussed in this research. So Authors point of view is- it is you who is going to take up the course; so you decide it by yourself.

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