

Stake Holder Perception on Online Capabilities of Educational Institutions

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Abstract:

This study aims to identify the online capabilities possessed by educational institutions and the stakeholders involved. This research contributes to the understanding of benefits and challenges of online capabilities from the perspectives of all relevant stakeholders. The paper briefly identifies security, privacy concerns and concludes with few recommendations on future state of online learning. From this study we came to know that put in a situation to be an essential part of modern day education, Institutions show a major interest in leveraging their online capabilities despite major challenges.

Keywords: *ELearning, Online Capability, Information Control Technology (ICT), open educational resources (OER), Massive open online courses (MOOC), Challenges and Benefits*

Introduction

The emergence of course materials and processes as open educational resources (OER) in the education industry in the 21st century provide an alternate or enhanced educational paradigm. Massive Open Online courses (MOOC) is yet another new term in the eLearning landscape. The number of people opting for online courses worldwide is increasing. One popular definition of online learning is instruction delivered by any technological mode. Online learning continues to be popular among working professionals. Presently higher education in India is undergoing a major transformation in terms of increased accessibility. This transition is highly influenced by rapid developments in information and communication technologies (ICTs). The increasing use of ICT has brought changes to teaching and learning at all levels of higher education systems in India leading to quality enhancements.

India's higher education system is the third largest in the world with respect to student enrolment, after China and the United States. Higher education is significant in its relevance that it equips people with specialised skills and that the majority of the population in India is below 25 years of age given its demographic structure. India's massive open online courses, started by several elite research universities, collectively enrol the world's entire student population's-learning market in India was valued at INR 18.41 in 2010-11 and is expected to grow at a CAGR of 20%. The global market size for eLearning is predicted to grow more than double by 2017 at CAGR of 23%” By mid-2030s physical schools will have been replaced by studios and virtual teaching.

The potential benefits of e-learning and other e-services in academics have long been extolled by researchers and practitioners. Review of previous studies indicates that with the increased accessibility to education, also come the associated uncertainties and challenges. However, the benefits and challenges of e-learning, e-surveys vary depending on the program goals, target audience, organizational infrastructure and culture. Review of previous studies indicates that in many situations individual or organizational contexts determine the extent of online capabilities exhibited by education institutions. In addition to these contexts, government policies and Funding restrictions stand out as major barriers.

Objectives

1. To study the online capabilities of educational institutions
2. To identify the stakeholders involved around online capabilities of educational institutions.
3. To identify drivers of online capabilities
4. To identify benefits of online capabilities
5. To identify and enlist the challenges faced by all relevant stakeholders

Review of Literature

E-Learning Market Trends & Forecast 2014 - 2016 Report by Docebo | March 2014

E-learning market in India was valued at INR 18.41 in 2010-11 and is expected to grow at a CAGR of 20%. The global market size for eLearning is predicted to grow more than double by 2017 at CAGR of 23%” By mid-2030s physical schools will have been replaced by studios and virtual teaching.

Mark Aspillera (2010) iterates on student demand as one among the many factors contributing to the growth of online learning. The three important attributes discussed around growth of online learning are Opportunities for convenience, cost-effectiveness, and student enrichment. He also discusses on concerns from critics on Student plagiarism and dishonesty.

Héctor Álvarez-Trujillo in his article on “Benefits and Challenges for the Online Learner” discusses on the pros and cons of online education and insists on students’ effective decision making evaluating all the dimensions of online and traditional education. The key barriers highlighted here are learners’ technological capabilities, quality of the course contents etc.

Dwyer, Barbieri, and Doerr(1995)in their white paper on “educational benefits of online learning” mention that “If you can’t go to school, we’ll send the school to you.” Authors discuss on the educational advantages of online learning. Few of the advantages that the authors discuss are student centered teaching approach, increased accessibility of course material and just-in-time methods to evaluate student performance.

Britain’s Open University’s study interestingly found that providing distance learning courses consumes an average of 87% less energy and produces 85% lower CO2 emissions per student than full time conventional courses. Such reduction in energy and CO2 emissions appears to be related to a reduction in student travel and elimination of much energy consumption of students’ housing (built infrastructure required for campus-based systems).

Michael Higley in his article on “e-learning challenges and solutions” discusses in detail the need to identify the e-learning challenges and the best practice solutions to ensure the success of all the stakeholders in this e-learning environment. His analysis revolves around the student motivation and course design and concludes that only a well supportive e-learning environment can ensure instructor and learner’s success.

Xin Chen, Deborah R. Barnett, and Casheena Stephens in their article on “ The Advantages and Challenges of Massive Open Online Courses “ present major challenges as related to instruction, assessment, and long-term administration and oversight. MOOC missed academic rigor and course completion stood as a major challenge. Authors comment that despite these challenges MOOC attracts increased student engagement due to its accessibility and the characteristic that it offers lifelong learning experience. Future research on the pros and cons of MOOC is recommended by the authors to recognize the potential value.

Gibbs & Simpson, 2004-2005, mention that instructors are particularly challenged to convey their intentions accurately.

Author insists that Instructors bound to time constraints end up not providing comprehensive and useful feedback under such circumstances. While it's evident that time constraints can result in ineffective feedback, other relevant studies have indicated that online methods of feedback have skyrocketed since they are less time consuming.

Ajit Mondal and Jayanta Mete (2012) in their study on ICT in higher education state that the introduction of ICTs in the higher education has profound implications for the whole education process especially in dealing with key issues of access, equity, management, efficiency, pedagogy and quality. This paper lists the potential drawbacks-cum-challenges to using ICT in education and concludes ICT enabled education will ultimately lead to the democratization of education.

- It may create a digital divide within class as students who are more familiar with ICT will reap more benefits and learn faster than those who are not as technology savvy
- It may shift the attention from the primary goal of the learning process to developing ICT skills, which is the secondary goal
- It can affect the bonding process between the teacher and the student as ICT becomes a communication tool rather than face-to-face conversation and thus the transactional distance is increased
- In addition, since not all teachers are experts with ICT they may be lax in updating the course content online which can slow down the learning among students
- The potential of plagiarism is high as student can copy information rather than learning and developing their own skills
- There is a need for training all stakeholders in ICT
- The cost of hardware and software can be very high

Yong Chen and Wu He, 2013, in their article on “Security Risks and Protection in Online Learning” discuss the next generation of online learning. The paper recommends the need for one-stop solution for authentication and security of online assessments. Author talks about the malicious or accidental misuse of resources in online learning. Paper discusses on three basic requirements of security

- Integrity referring to the protection of data from intentional or accidental unauthorized changes
- Confidentiality - protecting of sensitive information from being accessed by unauthorized persons
- Availability of online system meaning online learning system can be accessed by authorized users whenever needed

Karen Becker in the article on “A learner perspective on barriers to e-learning” contributes to the understanding of learner's perception of barriers. Becker's study of literature refers to Rogers's study, which categorizes the barriers attributed to internal and external factors. Internal barriers owing to behavioral changes, attitude and technological competency related aspects. Accessibility and availability of related technology is held as one of the major external barrier. Becker's study brings out three key factors that emerged as barriers to e-learning. First factor is about the effectiveness of e-learning like less interaction with other stakeholders. Second factor is related to issues about lack of technological skills. Time constraint, future use intentions are identified as other findings.

CSA “Expanded Top Ten Big Data Security and Privacy Challenges”, 2013 pinpoints that to the extent that the accessibility of big data has increased, new security challenges have arisen from the coupling of Big Data with public cloud environments . Streaming data demands ultra-fast response times from security and privacy solutions.

Fang Yang's article on “Student's perception towards personal information and privacy disclosure in E-learning” concludes that learners support their organizations collecting

and using their private information for learning purposes despite the concern on their private information going online. The paper recommends that organizations pay interest towards finding out which information their learners are apprehensive about providing and thereby design an online learning system that is effective and privacy risk-free.

Christopher Pappas, 2014, in his article lists the top five challenges to e-learning and also discusses on solutions to overcome them. The study discusses that learners find that eLearning is less interactive unlike the conventional system. In addition, that lack of learner motivation is one of the major barriers to e-learning. It is recommended in this study that eLearning courses offered as bite-sized chunks attract the learners.

Sunil Kumar Sharma, Javed Wasim, Dr. Jamshed Siddiqui, 2014 study the e-learning in India and talk about challenges specific to Indian context. Cultural, gender, lifestyle, geographical, religious/spiritual, literacy, disabilities, and digital divide are identified as the social implications of e-learning. Lack of infrastructure in terms of connectivity, availability of Internet is identified as yet another issue. The paper also highlights on the financial constraints with high rate of enrolment in primary and secondary education in India.

Annika Andersson's study on the major challenges for e-learning conducted in developing countries identifies the seven major challenges as Support, Flexibility, Teaching and Learning Activities, Access, Academic confidence, Localization and Attitudes. The study recommends future research to deepen the analysis of these challenges.

Rajesh M (2013) enlists the major problems associated with ICT adaptability in developing countries in the context of distance education.

- Policy structure of Government make the implementation of technology a daunting task
- Infrastructural Bottlenecks
- Political, Cultural, Economic factors

Research Methodology

The analysis of this paper is totally depending upon secondary data like journal, books and various websites from internet.

Online Capabilities

Online Education

The terms 'eLearning' and 'online learning' are used interchangeably by many authors. Online education is defined as an approach to learning that uses internet, network, or standalone electronic devices to communicate, collaborate in educational context. Web is revolutionizing information transmission and provides better forums for exchange. Many universities are channeling efforts into advanced teleconferencing, video conferencing to expand their online engagement. Self-paced learning, ability to cover distance, strong government initiatives push the student enrolments for eLearning propelling the market expansion.

Digital Libraries

Digital libraries are repository of locally produced academic outputs and act as point of access to other online sources. Many academic institutions are more actively involved in building repositories of the institution's books, papers, thesis, journals and other paper works, which can be digitized. Some of the common factors which are influencing to change to digital mode are Information explosion, storage problems, searching problem in traditional libraries, environmental factors (Save trees!!) and new generation needs.

E-Books

E-book in simple terms is electronic version of a printed book in paper format. E-books are emerging as the format of future in academics. Growth in general use of tablet computers is coupled up with growth in popularity of E-books. Sharon Kerr, head of Macquarie university accessibility services, says E-books deliver enhanced learning experience for learners because of the multimedia involved.

Video Assignments

Review of previous literatures indicates that educational institutions have not seen a widespread adoption of digital videos yet. But there is ample evidence that digital video assignments enhance student involvement in learning process. Online assignments provide live assignment help and all possible assistance to mentor through the process of completion of assignment.

Research Databases

Online library of databases are searchable collections of up-to-date and accurate information of books, journals etc. There are several search engines available for academic purposes and databases give bibliographic information about finding related books and journals.

Informal learning ways

Social media tools like Wikis, blogs, YouTube are widely accepted as professional networking tools and are looked upon as learning tools.

Lecture capture content

Lecture capture is recordings of classroom lectures, presentations and this will be inclusive of audio and video. Lecture capture in classroom requires a specially equipped room that can automatically record the happenings. There are software, tools available in market which do the lecture capture.

Online Surveys

Surveys are conducted in academics for variety of reasons. Collection of data for academic research can be done through smart surveys available online in a convenient, affordable and efficient way. Online surveys serve as user-friendly ways to study many areas like student satisfaction, quality of course content, demographic surveys etc. Use of web surveys for research has skyrocketed with the ever-increasing technological advancements. Automation and real time access is viewed upon as one of the major advantage of online surveys. Respondents can key in their data in the system, which is electronically stored further making analysis much easier and streamlined. In addition, this is a convenient, time saving method for both the researcher and the respondents. One major disadvantage could be that of limited sampling for the reasons that certain specified population not having internet access to respond to the questionnaires.

Online Tests

Online tests and quizzes are used for grading and to enhance learning experience. This has gained momentum because of quicker response, which keeps students motivated and enhances their participation in learning.

Many certification exams are available online offered through computer based testing centers. Practice tests for recruitment are available online, which helps better placement for students.

Hosting Student/Staff Data

Instructor can position students to the best of their abilities with a big picture view of the students' performance, interests, and demographic information. Universities make use of this data to understand students learning needs. Instructors get to know the strength and weaknesses of their students.

Public Communication

Public relation is about managing communication with all stakeholders. Universities are experiencing a shift from traditional to online media. There are many colleges, universities using Facebook as online public relations tool. There are many other powerful public relation tools available on the web.

Recruitment

Recruitment process involves tests, group discussions, technical interviews etc. Many recruiting companies have sorted to conducting tests through online. Certain level of interviews as well is taken up online.

Broad grouping of online capabilities:

- Online education
 - Teaching and learning
 - Video assignments
 - Management of lecture capture content
 - Digital libraries: E-books, e-libraries, e-journals, research databases etc.
 - E-services like e-conferences
 - Informal learning ways: Blogs, Internet searches, Live chats, networking with external professionals, Shared repositories, Wikis, Web conferences, online publications, e-journals etc.
- Online methods to assess and evaluate student progress, course material
 - Online surveys for feedback on course material
 - Online tests
- Other online services include
 - Hosting vast student/staff data
 - Public communications
 - Recruitment
 - Alumni relations
 - Live events etc.

Stakeholder Identification

Success of any program or implementation depends on the extent to which the needs and concerns of the related stakeholders are addressed. Stakeholders Involved:

- **Government**
- **Educational Institutions**

Educational institutions in the higher education context include colleges and universities.

- **Learners**

Students/Learners are the consumers or end-users of online learning and other capabilities

- **Instructors**

Instructors guide the educational experience of students. Depending on the mode of delivery, instructors may or not have a face to face interaction with the learners

• System Designers

The expansion in online capabilities of educational institutions has created a market for commercialized educational content creators

• Technology Providers

Technology providers develop the technologies, which enable delivery of online capabilities. This category of stakeholders ranges from service providers to complete learning management (LMS) providers.

Drivers for Stakeholders

Significant factors driving the adoption of online capabilities

- Alleviate physical space shortages due to increased enrolments
- Institutions goal to expand educational bandwidth
- Survival strategy of few institutions with geographically dispersed student enrolments
- Increased Socialization
- Harnessing the ICT platform for effective learning
- Convenience
- Effective utilization of time for better learning

Benefits of Online Capabilities

Benefits of Online capabilities to main stakeholders:

Government	Advancement in knowledge sharing through OER
	Leveraging taxpayers’ money by sharing and reuse between institutions
	Expanded access to non-traditional learners
	Builds community of learners
	Minimal Environmental effect - 87% less energy and 85% lower CO2 emissions
	Knowledge based community
Institutional	Substantial initial and ongoing investments of human labor
	Resource pool for learners and instructors that supports learning and collaboration
	Increased admissions- there are online colleges which accept transferred credits from other colleges
	Attract alumni as lifelong learners
	Just-in-time (JIT) methods to assess course contents, student performance, instructor capability
	Quicker public communication
	Conduct Alumni events with successful gathering
	Efficient recruitment of instructors and enhanced placement opportunities for students resulting in increased registrations
	Online tests are quantifiable. Quantification helps identify proficiency levels of students and observing the trends of the same, organizations can quickly react to the learner’s educational needs

	Digital information consumes less space unlike traditional libraries and enables multiple accesses. The cost of maintaining digital library less than that of traditional libraries although the initial cost if high
Instructor	Record of information allowing innovations to be built on them
	Economic gain through increased reputation
	Increased efficiency in some rote tasks. Some tools in online teaching automate processes and save instructors time
	e-library, E-books provide instructors with opportunity to pick and choose the resources which suits their requirement in classroom transaction
	Enriching experience interacting with instructors from various parts of the world
	Enables mastering new areas/skills
	Accommodates different teaching styles
	Better work life balance
	Online tests are easy to administer and frees up time for instructor since scored via electronic means
	Online tests take less time to prepare
Learner	Decide on choice of institution taking a look at the online courseware
	Self-paced learning
	Online education is Learner-centered while traditional education is resource centered
	Convenience and flexibility is enlisted as one of the major advantages of online learning. Courses accessible 24/7 for students anywhere and whenever needed and that too with flexibility to choose from a wider range of options
	Lifelong learning is easily facilitated through online learning getting rid of all barriers in conventional set up
	Interactive setup where learners throw off reservations and open up communications with instructors and other students through online mode
	Online education becomes a cost effective choice cutting off all expenses incurred in a traditional setting like textbooks, transport etc.
	Experience sense of equity
	Enriching experience interacting with students from various parts of the world
	Benefits students with attention difficulties
	Better work life balance
	Procuring a better position at a current company / Transitioning into a better working environment
	Online tests serve as major motivational tool since feedback/result is instant which keeps their interest and desire to “get it right” remains high.
	Digital library: Easy and rapid accessibility of books Digitization also improves quality – enhances legibility and removes flaws such as discoloration and stains

	Increased networking Structured contents
	Lecture capture increases student participation as they can replay and review the material after classroom hours.
	E-books are cheaper and easily accessible. Downloading a material saves a lot of time rather than queue at a bookshop
	Video Assignments stimulate student engagement in learning
	Online research databases help to research better and faster

Challenges around Online Capabilities

The possible challenges that need to be considered to ensure learner’s success in an online learning environment are discussed below from every stakeholder’s perspective.

Government	No real standards to regulate curriculum
	Cyberspace today is a common pool today used by various stakeholders and stands difficult to draw clear boundaries among these groups
	Due to the dynamic nature of cyberspace, there is now a need for unified National Cyber Security Policy which is an evolving task now
Institutional	Lack of resources to invest in broadband, hardware & software
	Difficulties in covering cost for developing OER or sustaining an OER in the long run
	Continuous need for training all stakeholders in ICT
	Assuring quality in open content
	Greater challenges around course content creation especially in terms of authenticity verification, security, fraud prevention
	Increased plagiarism due to reduced surveillance and increased network connectivity
	Providing learners with sufficient assessed course material to capture sufficient study time
	<i>Security</i> , in terms of information technology, is the protection of user files and system resources from loss, damage, inappropriate access, and unauthorized disclosure or use of sensitive or private information
	<i>Integrity</i> is reasonable assurance that data, once entered, will not be subject to unauthorized modification by intentional or unintentional means, and that data will remain unaltered during transmission between sending and receiving systems
	<i>Accountability</i> in this context is the ability to explain security-related events and to link them to the originator

Instructor	Lack of Self-motivation
	Limited personal interaction
	Unwillingness to share or give away intellectual property
	Unwillingness to use resources produced by someone else
	Inefficient course design
	Time constraint to share elaborate and comprehensive assessment feedback
Learner	Self-motivation
	Limited personal interaction
	Responsibility - successful completion of an online degree is heavily reliant on the students
	Students who are less disciplined, not efficient in time management, lack motivation may fall behind
	Lack of technical skills
	Creates digital divide among learners who have, do not have, and know how to use the internet and ICT
	Less optimal instruction for learners
	Lack of defined routine structures of traditional learning could result in lack of clarity on deadlines among learners
	Quantity and quality of assessment feedback from instructors
	Impact of feedback on future learning
	Learners expect the right to control and inspect personal information
	Learners expect that their personal information maintained by colleges and universities to be accurate
Developers	Insufficient time spent on course development and design resulting in poorly developed course content
	Modularization has tended to shorten courses
	Inherent security risks on the Internet, such as identity theft, impersonation, and inadequate authentication
	Underdeveloped security policies and immature security measures

Challenges discussed under Techno, economic, social and legal dimensions

Technical	Lack of broadband and other technical innovations
	Lack of required technical infrastructure
	Need for continuous technical training
Economic	Lack of resources to invest in broadband, hardware & software
	Difficulties in covering cost for developing OER or sustaining an OER in the long run
Social	Absence of technical skills
	Unwillingness to share or give away intellectual property
	Unwillingness to use resources produced by someone else
	Sustenance of learner interest
	Supporting intrinsic motivation
	Assuring quality in open content
Legal	In absence of good assessment program, examinations become very poor predictors of learner performance
	Prohibition to use copyrighted material without consent
	Lack of awareness among academics regarding copyright issues
	Challenges remain especially in authenticity verification, security, and fraud prevention

Conclusion

Benefits of online education make a significant impact in education industry today and as ICT evolves, promise to deliver greater benefits in future. Several studies have shown that the importance of the Internet in higher education has continued to rise over the past decade. Indeed several studies have claimed that the future of universities greatly cruxes on their ability to embrace and leverage the potentials of these emerging ICTs in their business activities and strategies including learning, teaching, research and administration. E-learning is an innovative approach to learning that meets today’s digital natives. However, there is less direct evidence for the anticipated Improvement in the quality of teaching and learning materials as an insufficient number of studies have deliberately investigated this as yet. Hence future research is recommended to deepen the analysis of these benefits.

In addition, instructors and learners can become successful only if there is a purposeful and well-defined online course. There has to be increased focus on effectiveness of their own course’s assessment system to support student learning. So far, e-learning providers, practitioners have not considered security as a top priority possibly because few security incidents have happened in reality. However, considering the future state of online capabilities in education industry, increased attention and efforts have to be put in to prevent security breaches and privacy intrusions.

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