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Utilization of Open Courseware amongst Students of Higher Learning Institutions in India

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Abstract: **With open courseware (OCW), anyone can access any course at any place in any language via internet. It may become a powerful tool to support e-learning as well as traditional classroom based learning. OCW was started by MIT as open educational resources. OCW is now expanded to many countries of world like China, Japan, Indonesia and India as well. Countries run open course ware either by translating MIT's course ware to their languages or by producing their own. NPTEL started it in India in engineering, science and humanities streams. MHRD also started production and distribution of open course wares in India under National Mission on Education through ICT (NME-ICT) which can be accessed through Sakshat portal. The major objective of this study is to know the perception of students towards utilization of Open Courseware in institutions of higher learning. Keeping in mind this objective the investigator decided to survey students of higher learning institutions. The present study was survey in nature. The sample of the study comprised of 418 undergraduate and postgraduate students belonging to urban, semi-urban and rural areas. Findings concluded that student effectively utilized open courseware in terms of user-flexibility, choice-based access and content delivery.**

Keywords: **Open Courseware, open educational resources, students, higher learning institutions.**

1. INTRODUCTION

BACKGROUND OF THE STUDY:

This is the era of Internet and mobile. Internet and mobile users are increased day by day.

As per IAMAI (Internet and Mobile Association of India), Internet users in India were 456 million in December 2018 which is 17% higher than December 2016. And it is estimated that the number of mobile internet users in India will be 478 million by June 2018. Hence growing number of internet users and mobile internet users in India are the strength and opportunity for the e-learning platforms such as open courseware (OCW) and massive open online courses (MOOCs). These learning platform should attract internet users to the online courses for the sake of learning.

Every nation has various types of educational system for their students from classroom based learning to open and distance learning. Classroom learning has their benefits over learning but competition is increased day-by-day and students want to gain more and more knowledge. But there are so many barriers like communication, finance etc. which pool back them from various source of learning. Open course ware could solve these problems because it is free and open to all; anyone can access any type of course available at any time. So it will be a tool which gives access to knowledge. People are accessing internet for informational and educational content and it is increased rapidly. Open courseware websites provides educational contents based on syllabus and it is already run in India and some countries in collaboration of OCW Consortium and MIT Open Courseware.

Open Courseware is a type of e-learning model which is delivered via internet and run by the universities or institutions. Open Courseware provide education free of cost to all learners. There is no fee for any type of course. It does not provide any degree or certificate but provides self-learning course material to learners. Open Courseware or OCW is a term applied to course materials created by the universities and shared freely with the world using internet.

According to OCW consortium "An OpenCourseWare (OCW) is a free and open digital publication of high quality universitylevel educational materials. These materials are organized as courses, and often include course planning materials and evaluation tools as well as thematic content. OpenCourseWare is free and openly licensed, accessible to anyone, anytime via the internet".

OCW was started at MIT (Massachusetts Institute of Technology) with the launch of MIT OpenCourseWare website in October 2002. MIT published many of its university courses on OCW website. The MIT OCW has currently published 2400 courses on its website with 300 million visitors.

After MIT many universities of various countries launched OCW websites and published their courses on these websites for their students. Currently, more than 250 other universities and associated organizations around the world have joined MIT, and have been publishing their course materials freely and openly for more than 13,000 courses in 20 languages (Avineni and Pusapati, 2012).

Open courseware initiatives in India are multidisciplinary in nature. They provide various kinds of documents useful for education. Some open courseware initiatives like NPTEL and UNESCO-SALIS are subject specific (Bherwani, 2012).

NPTEL is India's first attempt to create open courseware and open educational resources for the benefit of undergraduate students in engineering and technology disciplines in engineering, science and humanities streams (Das, 2014). This is an Open Courseware initiative by seven Indian Institute of Technology (IIT) and the Indian Institute of Science (IISc). It is funded by the Ministry of Human Resource Development (MHRD), Government of India (Majumder and Sharma, 2010). Currently NPTEL has produced more than 994 courses. According to the highlights given on NPTEL's website more than 994 courses are available on Feb. 2016 and its website recorded more than 292 Million page views.

Another open coursewares are eGyankosh from Indira Gandhi National Open University (IGNOU), Consortium for Educational Communication popularly known as CEC, NCERT online textbooks, e-PG Pathshala and Sakshat web portal.

Students and self-learners access these contents to gain knowledge, preparing their presentations and assignments. Faculties and working professionals also access it as an addition. It can be accessed any time anywhere without any barrier. OCW provides students an open space to learn without any traditional classroom environment. It supports and enhances teaching – learning process of self-learners those who want to get more and more knowledge. Anyone can learn any subject without any barrier. The objective of open courseware website is to provide free access to course material without any fee and it does not guaranty any course degree. Regular degree course has their importance and cannot be replaced by OCW. It provides supports to these degree courses.

RATIONALE OF THE STUDY:

In future with open courseware the globalization of education will occur. "21st century is a century of Global Competition also in Higher Education" Makoshi (2006). Anyone can access any course in any language via internet through open courseware. In future it will be work as a powerful tool to support education not to replace classroom based education. "OCW is not meant to replace degree-granting higher education or for-credit courses. Rather, the goal is to provide the content that supports an education" Kirkpatrick (2006). It will help people by providing knowledge which they are getting from the current education means. Huijser, Bedford, and Bull (2008) concluded in their paper that the provision by educational institutions of OCW has the potential to play an important role in assisting people to become (or to remain) socially included, productive members of wider society, by providing them with resources they need to participate in lifelong learning.

127 million visits to OCW content from an estimated 90 million visitors as of Oct 2011 (MIT Open Course Ware Program Evaluation Findings Summary, 2011). This report also highlighted the effective utilization of OCW website by the educators, students and self-learners for wide range of purposes.

Many studies has proven the impact of online learning on learning but very few studies found related to OCW and these studies have been done on various OCW projects which were started in various countries not in India.

Many research studies explored OCW in terms of its origin, development, access to OCW websites and utilization but focuses majorly on MIT open courseware and its adaptation done by other universities (Gomez at al., 2012). Terrell and Caudill introduced the open courseware movement, its scope, and also how the materials may be applied to traditional educational environments (2012). Some of them presented scenario of the open courseware initiatives in India and in the

world (Avineni and Pusapati, 2012). Çakmak, Özel and Yılmaz evaluated the Turkish Open Course Ware (OCW) initiative and revealed that how universities, lecturers/academics and other institutions contribute to this initiative (2013). Some studies highlighted various types of benefits and barriers of the open courseware. Although recent studies are focusing on MOOCs (Massive Open Online Courses), its origin, development, access in terms of enrollment and course completion, evaluation and grading system. However OCW provider organizations are now become big MOOCs provider like MIT, Coursera, NPTEL etc. From the past studies many aspects of OCW are came into focus and also some aspect are emerged for further research like structure, distribution format and effective utilization of open courseware amongst the learners. Therefore researcher decided to study the utilization the open course ware in institutions of higher learning.

STATEMENT OF PROBLEM:

The present study was entailed as "Utilization of Open Courseware amongst Students of Higher Learning Institutions in India".

OBJECTIVE:

To study the perception of students towards utilization of open courseware in institutions of higher learning in terms of user-flexibility, choice-based access, and content delivery.

SAMPLE:

Total 418 students were selected randomly as sample. The sample comprised of undergraduate and postgraduate students and belonging to urban, semi-urban and rural areas. Out of 418 students 60% were male and 40% were female. 56% students were below 21 years of age whereas 44% were from above 21 years age. In the present sample 22% were from rural area, 23% were from semi-urban area whereas 55% were from urban area. In terms of educational qualification 60% were undergraduates whereas 40% were postgraduates.

2. RESEARCH TOOL

To study the perception of students towards utilization of open courseware, utilization perception scale was developed by the investigator. First draft of scale prepared by the investigator contained 30 items, which was given to the experts of the field for the assessment. Experts suggested deletion of 6 items and alteration in some items of scale. After incorporating experts' suggestions second draft of the tool contained 24 items. Item analysis was done with the help of item total correlation. After item analysis six items were removed from the scale. Hence, final draft contained 18 items of utilization towards open course ware. These 18 items represents attributes of utilization of OCW. The items which were deleted were not directly associated with the attributes of the utilization.

Each statement of the scale was rated on a five point scale from Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD) and the score ranged from 5 to 1.

The standardization of tools were done by item analysis, reliability and validity. Split half was found to be 0.805. Content validity was established.

3. PROCEDURE OF DATA COLLECTION

The data were collected by adopting random sampling technique. The research tool developed by the investigator was given to 418 randomly selected students. The students were surveyed using online and offline mode. For the online mode tool was created using Google Docs technology and a web link was provided by the Google Docs to access and fill the responses online. This web link was mailed to randomly selected sample. While in offline mode printouts of research tool was distributed amongst randomly selected sample and collected back their responses.

ANALYSIS:

The collected data were analyzed with the help of frequency, percentage and chi square test.

4. RESULTS

- **New media profile of students**

Students possess strong new media profile. Majority of them access internet from PC/laptop as well as smart phone and also owned these devices. Most of them search content on internet. Number of internet users in India are increasing day-

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by-day and young population is major amongst them who access internet. Engle, Patidar & Singh (2015), Loan (2011), Neelamalar and Chitra (2009), Ruzgar (2005) and Perry, Perry & Hosack-Curlin (1998) supported these findings that the majority of current college students have access to the internet and computers for a large percentage of their lives.

- **Perception of students towards utilization of open courseware in institutions of higher learning in terms of user-flexibility, choice-based access, and content delivery.**

1. Perception towards Utilization of OCW in terms of User-flexibility

Table 1: Frequency, Percentage and Chi Square for User-flexibility of Utilization of OCW

			SD	D	UD	A	SA	Chi Square Value
1.	I access it any time as per my convenience.	F	28	45	60	203	75	236.725*
		P	6.8	10.9	14.6	49.4	18.2	
2.	I access difficult topics again and again as to deeply understand them.	F	22	32	80	203	74	253.148*
		P	5.4	7.8	19.5	49.4	18.0	
3.	I access topics/subjects of my choice/interest.	F	20	34	65	201	90	251.976*
		P	4.9	8.3	15.9	49.0	22.0	
4.	I learn it to improve my knowledge or skills.	F	16	27	63	199	105	267.805*
		P	3.9	6.6	15.4	48.5	25.6	
5.	I access it free of cost, no registration/subscription required.	F	49	59	90	165	48	118.331*
		P	11.9	14.4	21.9	40.1	11.7	
6.	I access it from any place as per my convenience.	F	21	40	56	199	94	243.829*
		P	5.1	9.8	13.7	48.5	22.9	
7.	I access it at my preferred pace.	F	25	37	77	193	78	215.073*
		P	6.1	9.0	18.8	47.1	19.0	
8.	I enrich my knowledge towards my course.	F	25	24	66	204	92	265.849*
		P	6.1	5.8	16.1	49.6	22.4	

** Significant at 0.01 level*

From the above table it can be seen that all the chi square values are significant at 0.01 level with degree of freedom equals to 4. It means the responses are not distributed equally.

Further, more than 65% of students access OCW as per their convenience time, place, and preferred pace as well as access difficult topics again and again to deeply understand. More than 70% of students access topics/subject as per their choice/interest, access to enrich their knowledge towards their course and learn to improve their knowledge or skills. Whereas 52% of students access it free of cost without registration.

From the above findings it can be concluded that students utilized OCW in terms of user-flexibility from 52% to 74% as free access to improve skills.

2. Perception towards Utilization of OCW in terms of Choice-based Access

Table 2: Frequency, Percentage and Chi Square for Choice-based Access of Utilization of OCW

			SD	D	UD	A	SA	Chi Square Value
1.	I generally access it in my language as well as English.	F	27	40	68	191	85	205.29*
		P	6.6	9.7	16.5	46.5	20.7	
2.	I also access it on new media devices like smart phone, tab etc.	F	24	49	71	184	83	182.224*
		P	5.8	11.9	17.3	44.8	20.2	
3.	I access it for doing research.	F	19	48	90	188	66	202.929*
		P	4.6	11.7	21.9	45.7	16.1	
4.	It helps me in preparing assignments & projects.	F	19	25	61	205	101	281.616*
		P	4.6	6.1	14.8	49.9	24.6	
5.	I frequently download its content.	F	21	68	90	168	64	142.345*
		P	5.1	16.5	21.9	40.9	15.6	
6.	I also access those subjects which are not available in my curriculum.	F	26	31	59	185	110	214.827*
		P	6.3	7.5	14.4	45.0	26.8	

** Significant at 0.01 level*

From the above table it can be observed that all the chi square values are significant at 0.01 level with degree of freedom equals to 4. It means the responses are not distributed equally. Further, more than 60% of students access OCW for doing research, to prepare their assignments and projects, access other subjects apart from their curriculum, access OCW in their language as well as in English and access it on new media devices like smart phone, tab, etc. While 56% of students frequently download OCW content.

From the above findings it can be concluded that students utilized OCW in terms of choice-based access from 56% to 74% as frequent download to prepare assignments and projects.

3. Perception towards Utilization of OCW in terms of Content Delivery factor

Table 3: Frequency, Percentage and Chi Square for Content Delivery factor of Utilization of OCW

			SD	D	UD	A	SA	Chi Square Value
1.	I access it in audio-visual mode.	**F**	20	55	102	144	89	108.122*
		P	4.9	13.4	24.9	35.1	21.7	
2.	I access its graphics & animation utility.	**F**	25	39	99	172	76	164.511*
		P	6.1	9.5	24.1	41.8	18.5	
3.	I easily search & access any topic.	**F**	18	38	75	197	83	234.876*
		P	4.4	9.2	18.2	47.9	20.2	
4.	I easily understand the content because they are self-explanatory.	**F**	20	35	99	178	78	189.927*
		P	4.9	8.5	24.1	43.4	19.0	

** Significant at 0.01 level*

From the above table it can be observed that all the chi square values are significant at 0.01 level with degree of freedom equals to 4. It means the responses are not distributed equally. Further, Almost 60% of students access OCW in audio-visual mode, access its graphics & animation utility and they understand its content easily because they are self-explanatory. Students also search and access any topic of OCW easily.

From the above findings it can be concluded that students utilized OCW in terms of content delivery from 57% to 68% as audio-visual mode to easy search and access of topics.

5. CONCLUSION

Open course ware are utilized in many ways by the students in terms of user-flexibility, choice-based access and content delivery. It indicates that students accessed OCW content as per their choice and convenience like it can be accessed anytime from anywhere. Student's utilized open courseware for preparing their assignments and for doing their research work as well as download its content. They accessed it in audio-visual mode and its graphics & animation utility. Students easily search and access any topic and it is also available free of cost for the users. Kumar (2016), Rhema & Miliszewska (2014), Kar et al. (2014), Kyalo and Hopkins (2013), Chawla & Jindia (2011), Pandey, Patidar & Singh (2011), Ghalib & Talawar (2009) and Yaghoubi et al. (2008) somewhat supported these findings.

Students utilized OCW content in many ways such as searching study materials for research and assignments as well as download its content. Hence OCW content is utilized well by the students. This is obvious because students possess strong new media profile.

IMPLICATIONS OF THE STUDY:

The utilization of open courseware in terms of user-flexibility, choice-based access and content delivery is very helpful in understanding the courseware because it shows that content and its delivery should be user centric. Findings of this study will be helpful for subject experts, OCW providers, OCW developers, and researchers. Content provide by the expert should be new and presented in small steps. So that it can create interest and provide flexibility in learning. Every learner can study OCW by his/her own. OCW providers and developers should focus on user friendly model so that learner can access OCW with ease. This involves use of technology in delivery, use of graphics and animation in presentation and simple user interface. Researchers in the field of OCW can further study utilization with large sample size.

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