

# Perception of Male and Female Students towards Need of Open Courseware in Institutions of Higher Learning & Its Associated Factors: A Comparative Study

Dr. Narayan Patidar<sup>1</sup> & Dr. Akhilesh Kumar Singh<sup>2</sup>

Lecturer, Educational Multimedia Research Centre, DAVV, Indore.

Director, Educational Multimedia Research Centre, DAVV, Indore.

Received: July 11, 2018

Accepted: August 16, 2018

## ABSTRACT

*With open course ware (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 compare the perception of male and female students towards need of open courseware in institutions of higher learning & its associated factors. 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. The findings of the study revealed that female students are better than male students towards overall need of open courseware. However male and female students are perceived similarly towards the factors of need of open courseware. The factors of need of open courseware are interactive content presentation, well-defined course curriculum, learning approach and certification.*

### Keywords:

## Background of the study

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 Course Ware. Open Course Ware is a type of e-learning model which is delivered via internet and run by the universities or institutions. Open Course Ware 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 Course Ware 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 university level 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". OpenCourseWare 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 course ware initiatives in India are multidisciplinary in nature. They provide various kinds of documents useful for education. Some open course ware initiatives like NPTEL and UNESCO-SALIS are subject specific (Bherwani, 2012). NPTEL is India's first attempt to create open course ware 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 Course ware 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). 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 course wares 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 course ware 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. “21<sup>st</sup> 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 research studies explored OCW in terms of its origin, development, access to OCW websites and utilization but focuses majorly on MIT open course ware and its adaptation done by other universities (Gomez at al., 2012). Terrell and Caudill introduced the open course ware movement, its scope, and also how the materials may be applied to traditional educational environments (2012). Some of them presented scenario of the open course ware 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 course ware. 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 course wares by the learners. Students need learning materials with features such as ease of use, interactivity etc. But researcher wanted to know the difference in perception of male and female students towards need of open courseware. Therefore researcher decided to compare the perceptions of male students and female students.

### **Objectives**

The objectives of the study were as follows –

1. To compare the perception of male and female students towards need of open course ware in institutions of higher learning in terms of interactive content presentation, well-defined course curriculum, learning approach, and certification.
2. To compare the perception of male and female students towards overall need of open course ware in institutions of higher learning.

**Hypotheses**

The hypotheses of the study were as follows –

1. There will be no significance difference in perception of male and female students towards need of open course ware in institutions of higher learning in terms of interactive content presentation, well-defined course curriculum, learning approach, and certification.
2. There will be no significance difference in perception of male and female students towards overall need of open course ware in institutions of higher learning.

**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.

**Research Tool**

A need perception scale was developed by the investigator to compare the perception of male and female students towards need and its associated factors of open courseware. Each statement was rated on a five point scale from Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD). There were 24 items in the scale the score ranged from 5 to 1. The standardization of tool was done by item analysis, reliability and validity. Split half reliability was established and it was found to be 0.885 for need items.

**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, factor analysis and t-test.

**Results**

**• Factors associated with need of Open Courseware:**

For the purpose of this study four factors were identified from 24 variables with the help of factor analysis. The results of factor analysis discovered as first factor has 18.455 percentage of variance, second factor has 15.129 percentage of variance, and third factor has 14.417 percentage of variance and fourth factor has 8.759 percentage of variance. The total percentage of variance for these four factors is 56.76. The factors were named as interactive content presentation, well-defined course curriculum, learning approach, and certification.

**• Comparison of male and female students towards need of OCW and its associated factors:**

The objective of the study was to compare the perception of male and female students towards need of open courseware in institutions of higher learning in terms of interactive content presentation, well-defined course curriculum, learning approach, certification factor and overall need separately. The data related to this objective were analyzed with the help of mean, standard deviation, standard error and t-test. The results are given in following table:

*Table 1: Mean, SD, SE and t-value for need of OCW and its associated factors*

<i>Interactive content presentation factor of need of OCW</i>						
<b>Gender</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>t-value</b>	<b>Sig.</b>
<b>Male</b>	246	35.85	7.083	.452	1.099	0.272
<b>Female</b>	165	36.54	4.574	.356		
<i>Well-defined Course Curriculum factor of need of OCW</i>						
<b>Gender</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>t-value</b>	<b>Sig.</b>

<b>Male</b>	246	19.54	4.268	.272	0.622	0.534
<b>Female</b>	165	19.78	2.827	.220		
<i>Learning Approach factor of need of OCW</i>						
<b>Gender</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>t-value</b>	<b>Sig.</b>
<b>Male</b>	246	27.15	5.366	.342	0.958	0.339
<b>Female</b>	165	27.61	3.561	.277		
<i>Certification factor of need of OCW</i>						
<b>Gender</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>t-value</b>	<b>Sig.</b>
<b>Male</b>	246	11.70	2.412	.154	0.379	0.705
<b>Female</b>	165	11.62	1.933	.151		
<i>Overall need of OCW</i>						
<b>Gender</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>t-value</b>	<b>Sig.</b>
<b>Male</b>	253	91.6403	22.59831	1.42074	2.075	<b>0.039</b>
<b>Female</b>	165	95.5394	10.49128	.81675		

From the above table 1, it is clear that the t-values of interactive content presentation factor, well-defined course curriculum factor, learning approach factor, and certification factor of need of open courseware, are not significant. It means that there is no significant difference in perception of male and female students towards need of open courseware in institutions of higher learning in terms of interactive content presentation, well-defined course curriculum, learning approach, and certification. Therefore, the null hypothesis namely, there will be no significant difference in perception of male and female students in terms of interactive content presentation, well-defined course curriculum, learning approach, and certification factor of need of open courseware in institutions of higher learning in India is not rejected.

But from the above table 1, it is also clear that the t-value of overall need of open courseware is significant. It means that there is a significant difference in perception of male and female students towards overall need of open courseware in institutions of higher learning. Therefore, the null hypothesis namely, there will be no significant difference in perception of male and female students towards overall need of open courseware in institutions of higher learning in India is rejected. Hence, it may be concluded that females perceived significantly better than males in terms of overall need of open courseware.

### Conclusion

Findings of this study revealed that male and female both are similar in perception in terms of interactive content presentation, well-defined course curriculum, learning approach, and certification factor of need of open courseware in institutions of higher learning in India. However, females perceived significantly better than males in terms of overall need of open courseware.

This means gender had no significant effect on associated factors of need but in terms of overall need, females are better than the males. Kar et al. (2014) somewhat supported these findings because Kar et al. (2014) found that female students have slightly higher attitude towards e-learning than male students. Therefore female is higher than male in terms of overall need of open courseware.

### References:

- About OCW. (n.d.). Retrieved from <https://ocw.mit.edu/about/>
- Avineni, K. & Pusapati, R. (2012). OPEN COURSEWARE INITIATIVES FOR ENGINEERING CURRICULUM. International Journal of Digital Library Services, 2(4), 63-72. Retrieved on May 12, 2015 from [http://www.ijodls.in/uploads/3/6/0/3/3603729/vol-2\\_issue-4\\_63-72.pdf](http://www.ijodls.in/uploads/3/6/0/3/3603729/vol-2_issue-4_63-72.pdf).
- Bassi, M. D., & Camble, E. (2011). Gender Differences in use of electronic resources in University libraries of Adamawa state, Nigeria. Retrieved from <http://digitalcommons.unl.edu/libphilprac/549/>.
- Bherwani, M. T. (2012). OPEN COURSE WARE INITIATIVES IN INDIA. International Journal of Information Library and Society, 1(2). Retrieved on May 12, 2015 from <http://www.publishingindia.com/GetBrochure.aspx?query=UERGOnJvY2h1cmVzfC8xMzI2LnBkZnwwMTMyNi5wZGY=>.
- Çakmak, T., Özel, N., & Yılmaz, M. (2013). Evaluation of the Open Course Ware Initiatives within the Scope of Digital Literacy Skills: Turkish Open CourseWare Consortium Case. Procedia-Social and Behavioral Sciences, 83, 65-70. doi:10.1016/j.sbspro.2013.06.014.
- Dabaj, F. and Başak, H. (2008). The Role of Gender and Age on Students' Perceptions towards Online Education Case Study: Sakarya University, Vocational High School. International Journal of Social, Behavioral,

Educational, Economic, Business and Industrial Engineering, 2(2). Retrieved from <http://waset.org/publications/10133/the-role-of-gender-and-age-on-students-perceptions-towards-online-education-case-study-sakarya-university-vocational-high-school>.

- Das, A. K. (2014). Open Educational Resources (OER): Policy Perspectives and National Initiatives. India-Science and Technology, volume 3, 16-21. Retrieved from [http://eprints.rclis.org/24866/1/Anup\\_2014\\_OER\\_India\\_chapter.pdf](http://eprints.rclis.org/24866/1/Anup_2014_OER_India_chapter.pdf).
- Gomez, S., Callaghan, L., Eick, S. A., Carchidi, D., Carson, S., & Andersson, H. (2012). An institutional approach to supporting open education: A case study of OpenCourseWare at Massachusetts Institute of Technology. Proceedings of Cambridge 2012: Innovation and Im-pact-Openly Collaborating to Enhance Education, 29.
- Kar, D., Saha, B., & Mondal, B. C. (2014). Attitude of University Students towards E-learning in West Bengal. American Journal of Educational Research, 2(8), 669-673. Retrieved from <http://pubs.sciepub.com/education/2/8/16/>.
- Huijser, H. J., Bedford, T., & Bull, D. (2008). OpenCourseWare, Global Access and the Right to Education: Real access or marketing ploy? The International Review of Research in Open and Distributed Learning, 9(1). Retrieved on February 12, 2010 from <http://www.irrodl.org/index.php/irrodl/article/view/446/1002>.
- Kirkpatrick, K. L. (2006). OpenCourseWare: An 'MIT Thing'? Searcher: The Magazine for Database Professionals. Retrieved on February 12, 2010 from <http://hdl.handle.net/10150/106519>.
- Majumder, A. J., & Sarma, G. K. (2010). Open Courseware initiatives for e-learners in India. Vikas Publishing House, Delhi, India. Retrieved from <http://hdl.handle.net/10150/224211>.
- Makoshi, N. (2006). TokyoTech OCW WG and Japan OCW Consortium. In joint OECD/AIDE conference. Retrieved from <http://www.oecd.org/dataoecd/60/33/37649652.pdf>.
- MIT OpenCourseWare Program Evaluation Findings Report (March, 2004). Retrieved from [http://web.mit.edu/ocwcom/MITOCW/About/03\\_Eval\\_Full\\_041204\\_MITOCW.pdf](http://web.mit.edu/ocwcom/MITOCW/About/03_Eval_Full_041204_MITOCW.pdf).
- MIT OpenCourseWare Program Evaluation Findings Summary (2011). Retrieved from [http://ocw.mit.edu/about/site-statistics/11\\_Eval\\_Summary\\_112311\\_MITOCW.pdf](http://ocw.mit.edu/about/site-statistics/11_Eval_Summary_112311_MITOCW.pdf).
- Rhema, A., & Miliszewska, I. (2014). Analysis of student attitudes towards e-learning: The case of engineering students in Libya. Issues in Informing Science and Information Technology, 11, 169-190. Retrieved from <http://iisit.org/Vol11/IISITv11p169-190Rhema0471.pdf>.
- Terrell, R. L., & Caudill, J. G. (2012). OpenCourseWare: open sharing of course content and design. Journal of computing sciences in colleges, 27(3), 38-42.
- Thanuskodi, S. (2013). Gender Differences in Internet Usage among College Students: A Comparative Study. Library Philosophy and Practice. Retrieved from Paper 1052. <http://digitalcommons.unl.edu/libphilprac/1052>.
- What is Open Course Ware. (n.d.). Retrieved on July 11, 2015 from <http://www.oeconsortium.org/faq/what-is-open-courseware/>.
- Yukselturk, E., & Bulut, S. (2009). Gender Differences in Self-Regulated Online Learning Environment. Educational Technology & Society, 12 (3), 12–22. Retrieved from [http://www.ifets.info/journals/12\\_3/3.pdf](http://www.ifets.info/journals/12_3/3.pdf).