Fall 9-7-2021

Impact Of Open Educational Resources Among The Students And Research Scholars In Delhi

Manju .
Research Scholar, Banasthali Vidyapith, Rajasthan, India, mranga77@gmail.com

Sunil Bhatt Dr
Assistant Librarian, Banasthali Vidyapith, Rajasthan, India, vbsb1970@gmail.com

Impact Of Open Educational Resources Among The Students And Research Scholars In Delhi

Abstract

The research has been conducted about the impact of open educational resources among students and research scholars of Delhi University and Jawaharlal Nehru University, Delhi. It is to find out the awareness about the OER, their participation in OER resources, the advantages, disadvantages and also to identify barriers faced by students and research scholars while using the OERs. Data was collected by conducting the online survey using well-structured questionnaire on google forms from 190 respondents (DU 75 and JNU 115). It was analysed by using Microsoft excel. It is found that respondents are positive towards OERs and helped the students and researchers' for performing better learning method. It also helped in increasing the quality of education provided by OERs. Also motivates everyone to move forward with the upcoming technologies. There is no significant relationship between the university awareness about OER as students / researchers. The frequency of access and the nature of OERs downloads were asked in the questionnaire. Most of them access regularlyand they download research articles and text documents more compare to other resources. It also identified some of the advantages and disadvantages of using OER by scholars. Some of the barriers were also identified from the questionnaire. The study is limited only with the students and research scholars of Delhi University and Jawaharlal Nehru University. It is suggested that LIS professionals may take as challenge and understand the significance of OERs and impart information literacy training time to time to the academic community.

Keywords: Open Educational Resources, Higher education, NPTEL, OERs.

Introduction

Higher Education institutions are facing challenges like rising cost of study materials for the students. The students can make use of freely available resources, for which, the Internet is also indirectly supporting. To satisfy the students / researchers need for the resources, spread throughout the world, the speed of internet is also a concern with the diverse subject field providing best and fastest services to its users. It is the demand of students, as they need immediate information to complete the tasks in their respective areas of knowledge. The demand can be fulfilled through "Open Educational Resources" (OERs). UNESCO (2002) adopted the term "Open Educational Resources" in Forum on the Impact of Open Courseware for Higher Education in Developing Countries. OERs are freely available, openly allowed text,

media, and other digital resources that are useful for instruction, learning, and evaluating as well as for research determinations. OERs are for teaching, learning and research that reside in the public domain or have been released under an Open license that permits their free use or re-purposing by others. OERs include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials or techniques used to support access to knowledge. Different researchers at different places making use of the OERs, but there is no study conducted for the students and research scholars combing two or more universities. Therefore, there is a need for the study to find out the impact of OERs. This research is done specially from the students and research scholars of Delhi University (DU) and Jawaharlal Nehru University (JNU). Let us discuss the definition of OERs given by different organisations to get a clear understanding of it.

Definitions of OER

"Open Educational Resources (OER) are teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions." (https://en.unesco.org/themes/building-knowledge-societies/oer)

The William and Flora Hewlett Foundation (2010), one of the primary donors in the OER movement, supported the use of OER "to equalize access to knowledge for teachers and students around the globe." They defined OER as "teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or repurposing by others". Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge." Hewlett Foundation (https://hewlett.org/strategy/open-educational-resources/).

OER are learning materials that are openlylicensed, which means the copyright-holder has published the material on the internet undera Creative Commons (CC) license that allows others to retain, reuse, revise, remix orredistribute (the 5Rs) these materials (Wiley and Hilton, 2018). OER also includes material inthe public domain, which are materials that are no longer under copyright or where thecreator dedicates the materials to the public domain and relinquishes copyright (Williamand Flora Hewlett Foundation, 2013). Before proceeding to

find out the literature available on this study, let us discuss about the universities where the data is collected.

About Delhi University (DU) and Jawaharlal Nehru University (JNU)

University of Delhi (DU*)* is a premier university of the country with a venerable legacy and international acclaim for highest academic standards, diverse educational programmes, distinguished faculty, illustrious alumni, varied co-curricular activities and modern infrastructure. Over the many years of its existence, the University has sustained the highest global standards and best practices in higher education. Established in 1922 as a unitary, teaching and residential University by the Act of the then Central Legislative Assembly, a strong commitment to excellence in teaching, research and social outreach has made the University a role-model and trend setter for other universities. Over 500 programmes offered by the University are approved by Academic and Executive Councils. It has many PG courses and Ph Ds from Anthropology, Applied psychology, Biochemical Engineering, Bio chemistry, Botany, Business administration, Chemistry, Library science, Statistics, Zoology, etc. There is different level of students at DU. There are many PG students, M Phil students and Ph D scholars are studying at DU.

Jawaharlal Nehru University (JNU) is the foremost university in India, and a world-renowned centre for teaching and research with number one ranked by NAAC. The educational philosophy of the university gets translated into its somewhat unorthodox academic structure. Grounded in a faith in the unity of knowledge, JNU has sought to avoid the narrowly conceived Department structure of conventional universities, preferring instead to bring allied disciplines within a few broad and inclusive entities called Schools. The University brings out four research journals which have high academic visibility in India and abroad. JNU has different types of schools and Centres from Arts and Aesthetics, Biotech, Computational & Integrative Science, Computer science, Engineering, Environmental Sciences, International studies, Physical sciences, Social Sciences, Nano sciences, E-Learning, Study of Law and Governance, etc. Almost all these subjects are having M Phil and Ph D and therefore maximum number of PG students and scholars are studying in JNU.

Literature review

The nature of OERs has made the accessibility and use for learning and research has grown throughout the world. There are many studies have been conducted about OERs. Some of the studies are reviewed to find out the gap. Bowen and others (2014)examined the effect of 'Interactive Learning Online' created by Carnegie Mellon University (CMU) on statistics course including textual explanations, examples and exercise. Study carried at six public university campuses. Total 3045 students enrolled in statistics courses divided into two groups. First group consisted of 605 students selected randomly ready to learn through OER, second group of 2440 students introduced as the traditional method of learning. First group adopted new format was given instruction (face-to-face) with machine for one hour each week and second group got the instructions (face-to-face) for three hour each week. Performance of both groups in term of passing final exam was almost same. Students using OER performed slightly better than students using traditional method. Researcher's recommended that OER should be adopted in higher education as it would reduce the cost for instructor in long process.

Thakran and Sharma (2016) described how OER meet the challenges faced by higher education in India. Researchers analysed the challenges faced by higher education such as lack of sufficient trained faculty, access to quality education, to educate large population, and to meet the three E's viz. Expansion, Equity and Excellence in higher education. This study explored many OER initiative taken in India and how they meet these challenges. National Council for Educational Research and Training (NCERT) provides free online textbooks at school level. Consortium for Educational Communication (CEC) providing online materials for the undergraduate and Vyas channel for higher education and National Programme on Technology Enhanced Learning (NPTEL) for engineering. WikiEducator was used to build national OER, which provide free access to number of articles and help to increase knowledge, sharing and collaboration. Many initiatives were also taken to develop OER skills such as Post Graduate Diploma in e-Learning (PGDEL), Teacher Education through School-based Support in India (TESS-India) etc. OER models showed the impact on policy and planning as faculty, research scholar, students resized that OER initiatives and practices meets the challenges of higher education. OER provides education to people, provides access to excellence education with low cost at national level and would meet the expansion, equity and excellence in higher education.

Mishra (2017) conducted a study in Indian universities with following objectives, viz. to examine faculty attitudes towards OER, their perspectives on the use of OER, to find out the barriers that came in creation and use of OER. to find the factors that motivated faculty to accept OER. Survey was designed to collect the qualitative data and workshop was conducted in four research locations MANUU (Maulana Azad National Urdu University, Hyderabad), KKHSOU (Krishna KantaHandiqui State Open University, Assam), CUTM (Centurion University of Technology and Management, Odisha) and Krishna University, Andhra Pradesh) at the same time offline and online questionnaire was distributed to the faculty of Indian universities to collect the quantitative. Overall faculties showed the positive attitude towards the OER independent of demographic variable. They were ready to share their resources rather than adopt others resources. Faculties were motivated based on the educational and learning opportunities provided by OER, time and money saving, it was found that younger faculty and PhD holder was more motivated than older and master degree faculty. As the quality concern, OER should be peer reviewed and creators of OER were also responsible. The major barrier was the lack of knowledge about copyright and licensing. Other barrier was technical support, no policy, and low bandwidth.

Sheeja (2018) conducted the study, to review the OER development in India and to study usage of OER created by National Programme on Technology Enhanced Learning (NPTEL) at Cochin University of Science and Technology, Kerala. 128 Questionnaire was distributed to undergraduate students in the department of Ship Technology. Only 114 students responded to questionnaire. 28% of students were using the OER 2-3 times in a week, 59.6% of students were using OER once in a week. 9.6% of students were using OER once in the month and 2.6% use occasionally. Further, 74.56% of users were using OER as supplement to their course, 13.15% of the users fond that OER update the knowledge, 12.28% of user were using OER for the preparation of other exam like Graduate Aptitude Test (GATE). Most of the respondents (84.21%) believe that OER were most relevant 90.35% of students were extremely satisfied with OER created by National Programme on Technology Enhanced Learning (NPTEL).

Kurelovic (2016) conducted a study at Croatia with the objective to examine the attitudes of scholars and teaching materials available for them. This research was conducted on the Open educational Resources on MOOC only and covered the four public institutions of higher education in the field of Humanities, social science and science. Online questionnaire on the 5-likert scale was emailed to the research scholars. 64 scholars responded back, out of them 64%

were females and 44% males. 61% responses received from social science, 22% from humanities, 9% from technical-science and 8% from natural science. Most of respondents support the idea of OER. Few agreed to share their teaching materials. Only 20% agreed to share their recourses on the public domain, 70 percent allow only to their students (with login & password required) and 10 percent favour of print materials only. 12.5 percent published their materials under creative common license. More materials available for in the field of science as compared to social science. The teaching materials are mostly accessible with some barriers and only 20% of them are available on public web.

Jilani and Hemlata (2019) evaluated the impact of OERs on the postgraduate students of various universities. Survey was conducted on the use of OERs, created by different initiatives in India like e-Gyankosh, National Institute of Open Schooling (NIOS), Cultural Heritage Digital Library in Hindi (CHDLH), National Digital Library (NDL) etc. It was found that use of e-Gyankosh was 43 percent, NIOS-OER was 18 percent, E-Pathshala was 16 percent, Swayam was 12 percent and ShodhGangotri was 7 percent. It was found that the purpose of using OER was 45 percent for reference, 43 percent for learning and 12 percent for other reasons. Researchers provided many useful suggestions like there should be more government projects for the creation of OERs, technical skills should be provided to students and there should be a mechanism to check the quality of OER. It is also recommended that all the issues related to OER canbe solved by increasing understanding through R&D, feasibility studies andcreating awareness amongst students.

Jaggars and others (2019) discussed about the Ohio State University program ALX (Affordable Learning Exchange) which replaced the print textbooks by the open educational resources on the twelve courses in first cohort and then in second cohort fall-2016. This project saved approximately $ 1.3 million of the students. Research was conducted to examine the integration, experience and quality of OER measured by 21 Likert scale. Online survey was conducted at the end of semester. Depth interview was conducted with twelve instructors to compare the printed textbooks and OER and to rating the quality and integration of the items. Researcher followed three survey subscales for examine the quality and experience, and correlate the data collected from student and faculty surveys. 63% of the students felt that OER was more relevant and Only 5% felt that OER was less relevant as compared to printed textbooks. Father 66% informed that OER were easier to access and 8% said that OER were difficult to access. Response for improvement of OER 18% felt quality was worse, 17% felt

difficulty in taking useful notes. Regarding integration of the course half of students commented OER needs to review time to time. 14% mentioned OER never needs to review. Further 66% respondents wanted wants to used OER in future also and 12% prefer to traditional print textbooks. Both students and faculty were positive towards the quality and experience of using OER.

From the above literature review, it was found that the students' performance has increased with the use of OERs, the challenges faced by HE in India is solved by facilitating OER resources, faculty usage of OERs at different locations (universities in India) found the major benefits to them, students use of NPTEL resources reduced the purchase of course materials and ALX project has replaced the printed text books and assisted for the students. Even though there are many more studies are available on OER, but there is no study on scholars' usage of OERs. Therefore, it is decided to have a study on students and research scholars at two different universities in Delhi with the following objectives:

Objective of the Study

- To find out the streamwise participation of students / research scholars use of OERs.
- To find out the awareness of OERs by students / research scholars.
- To find out the types of OERs downloaded by the students / research scholars.
- To find out the advantages and disadvantages of using the OERs.
- To identify the barriers faced by the students / scholars in using OERs.

Methodology

This research has used the survey method to achieve the maximum accuracy. For this well-structured questionnaire was prepared and shared online using google forms, with the students and research scholars of Delhi university and Jawaharlal Nehru University, Delhi.

Data Analysis and Discussion

The research has been conducted on "Impact of Open Educational Resources among the students and research scholars in Delhi". A detailed questionnaire has been prepared and collected the required data as per the objectives, using google forms due to COVID 19. This paper deals with analysis, interpretation, results and discussion of data.The collected data from 190 students and research scholars from JNU (115) and DU(75) were analysed below. The

Genderwise number of respondents (students/scholars) are listed as per universities and as per the streams below:

Table 1. No. of respondents in JNU and DU

Gender	No. of Respondents (%)		Chi-square (p-value)
	JNU	DU	
Male	70(36.8)	32(16.8)	6.049 (.014)
Female	45(23.7)	43(22.6)	
Total	115	75	

From Table 1, it is found that maximum number of male students 70 (36.8%) from JNU and maximum number of female students 43 (22.6%) from DU were participating in this research.

Table 2. No. of respondents as per streams

Gender	No. of Respondents (%)				Chi-square (p-value)
	Social Sciences	Art and Humanities	Sciences	Commerce & Management	
Male	47 (24.7)	21 (11.1)	30(15.8)	4 (2.1)	12.486 (.006)
Female	43 (22.6)	33 (17.4)	11 (5.8)	1 (.5)	

From Table 2, it is found that 47 (24.7%) of male students are from social sciences, 30 (15.8%) are from sciences and 4 (2.1%) from Commerce and Management stream were participating compared to 33 (17.4%) of female students from Arts and Humanities stream, etc.

As per the objectives, to find out the awareness of OERs by students and research scholars, the collected data is given below in Table 3. In the questionnaire, the response category is requested as i) yes ii) no and iii) don't know. The questionsare all related to awareness about the OERs.

Table 3. Awareness of OERs

Awareness	Categories	Number (%)		Chi-square (p-value)
		JNU	DU	
Have you ever used internet for accessing study materials and other learning materials?	Yes	115 (60.5)	75 (39.5)	-
	No	-	-	
	Don't know	-	-	
Do you know what are Open Educational Resources?	Yes	106 (55.8)	73 (38.4)	2.554 (.279)
	No	7 (3.7)	2 (1.1)	
	Don't know	2 (1.1)		
	Yes	81 (42.6)	52 (27.4)	.379 (.827)

Do you know that your university also provide link to the popular OER?	No	16 (8.4)	9 (4.7)	
	Don't know	18 (9.5)	14 (7.4)	
Does your faculty refer you to use any OER while teaching?	Yes	72 (37.9)	55 (28.9)	2.893 (.235)
	No	28 (14.7)	11 (5.8)	
	Don't know	15 (7.9)	9 (4.7)	
Have you ever suggested other to use any kind of open educational materials?	Yes	94 (49.5)	57 (30.0)	1.000 (.607)
	No	16 (8.4)	13 (6.8)	
	Don't know	5 (2.6)	5 (2.6)	
Does your faculty use any OER during teaching?	Yes	60 (31.6)	38 (20.0)	.570 (.752)
	No	25 (13.2)	14 (7.4)	
	Don't know	30 (15.8)	23 (12.1)	

From Table 3, it is found that Internet usage is by all the respondents at 115 (60.5%) JNU and 75 (39.5%) at DU. About the awareness of OERs, from JNU 106 (55.8%) responded as 'yes' and at DU 73 (38.47%) responded; only 7 at JNU and 2 at DU said as not aware; and only 2 at JNU informed as 'don't know. The next question about the awareness that their university is providing links to OERs, 81 (42.6%) responded at JNU as 'yes' and 52 (27.4%) at DU.; whereas 16 (8.4%) at JNU as 'no' and 9 (4.7%);don't know was informed by 18 (9.5%) at JNU and 14 (7.4%) at DU.

It was asked about their faculty referring to use any OERs while teaching, 72 (37.9%) responded at JNU said as 'yes' and 55 (28.9%) at DU; 'No' by 28 (14.7%) from JNU and 11 (5.8%) at DU; and 'don't know' response was by 15 (7.9%) at JNU and 9 (4.7%) at DU. Have you ever suggested others to use any kind of OERs – for this question 94 (49.5%) responded from JNU informing 'yes', 57 (30%) from DU; 'No' by 16 (8.4%) at JNU, 13 (6.8%) at DU; 'don't know' by 5 (2.6%) at JNU and 5 (2.6%) from DU. The last question 'Does your faculty use any OERs during teaching?' – for this 'yes' was answered by60 (31.6%) from JNU, 38 (20%) from DU; 'no' was answered by 25 (13.2%) at JNU, 14 (7.4%) at DU; 'don't know' was said by 30 (15.8%) at JNU and 23 (12.1%) at DU. Chi square test was done for this data.

The collected data for the frequency of accessing the OERs by the students and research scholars for their studyis given below in Table 4:

Table 4. Frequency of access to the OERs

How frequent do you access Open educational resources?	JNU	DU	Chi-square (p-value)
Occasionally	51 (26.8)	34 (17.9)	1.910 (.591)
Regularly	56 (29.5)	35 (18.4)	
Rarely	6 (3.2)	6 (3.2)	
Never	2 (1.1)	-	

From Table 4, it is found that 56 (29.5%) of students from JNU and 35 (18.4%) students from DU are using regularly the OERs; 51 (26.8%) of students from JNU and 34 (17.9) students from DU are using occasionally and only 2 students from JNU never used the OERs

It was requested that the types of OERs the students prefer to download for their use. The collected data is given below in Table 5:

Table 5. Types of OERs downloaded

Types of OERs	No. of responses	Percentage
Text document	139	73.2
Open books	114	60
Dissertation and thesis	113	59.5
Research Article	140	73.7
Audio-video	77	40.5
PPT	88	46.3
Recoded lecture	70	36.8
Images	49	25.8
Audio podcasts	22	11.6
Quizzes	37	19.5
Tutorials	69	36.3
Individual websites	46	24.2
Course ware	30	15.8
Assessments	39	20.5
Tutorials	70	36.9
Test	36	18.9
Dataset	34	17.9
Audio	89	46.8

From the above Table 5, it is found that research articles are downloaded by maximum number of students 140 (73.7%) followed by 139 (73.2%) text documents, 114 (60%) open books and 113 (59.5%) of dissertations and thesis and audio podcasts 22 (11.6%) by different types of students and research scholars.

Advantages

It was revealed from the questionnaire regarding the advantages and disadvantages of the use of OERs by students and scholars. They informed that anywhere anytime in the world one can have access to OERs any number of times the resources repeatedly. OERs are easy to distribute widely with little or no cost, which supplements the textbooks and lecture notes. It also provides multimedia contents that help students to more easily learn the material being taught. It is of less costs comparative to print textbooks and information may be disseminated rapidly. They also felt that continuously improved resources are available.The response (advantages) given by the students for accessing the OERs are listed below in Table 6:

Table 6. Advantages / Benefits of OERs for the students

Advantages of using OER	Categories	Number (%)		Chi-square (p-value)
		JNU	DU	
OER is easy to access	Agree	76 (40.0)	44 (23.2)	1.081(.583)
	Agreed up-to some extent	35 (18.4)	28 (14.7)	
	Disagree	4 (2.1)	3 (1.6)	
OER are the supplementary to the other educational resources.	Agree	87 (45.8)	46 (24.2)	4.617 (.099)
	Agreed up-to some extent	23 (12.1)	25 (13.2)	
	Disagree	5 (2.6)	4 (2.1)	
Open Educational resources are user friendly.	Agree	77 (40.5)	37 (19.5)	7.356 (.025)
	Agreed up-to some extent	36 (18.9)	33 (17.4)	
	Disagree	2 (1.1)	5 (2.6)	
As OER are available in multimedia format helps in understanding the content more easily	Agree	72 (37.9)	48 (25.3)	3.552 (.169)
	Agreed up-to some extent	41 (21.6)	22 (11.6)	
	Disagree	2 (1.1)	5 (2.6)	
Students can reuse them again and again till the concept cleared to them.	Agree	98 (51.6)	59 (31.1)	2.372 (.305)
	Agreed up-to some extent	16 (8.4)	16.(8.4)	
	Disagree	1 (0.5)	-	
OER helps to meet the latest technology used in educational system	Agree	74 (38.9)	46 (24.2)	4.438 (.109)
	Agreed up-to some extent	39 (20.5)	23 (12.1)	
	Disagree	2 (1.1)	6 (3.2)	
Quick access and delivery of learning resources	Agree	83 (43.7)	50 (26.3)	.761 (.683)
	Agreed up-to some extent	29 (15.3)	22 (11.6)	

	Disagree	3 (1.6)	3 (1.6)	
OER is found as the better learning method in today's pandemic situation.	Agree	89 (46.8)	49 (25.8)	3.690 (.158)
	Agreed up-to some extent	25 (13.2)	24 (12.6)	
	Disagree	1 (0.5)	2 (1.1)	
Enhance the self-learning habit.	Agree	85 (44.7)	52 (27.4)	2.112 (.348)
	Agreed up-to some extent	28 (14.7)	23 (12.1)	
	Disagree	2 (1.1)	-	
Gives us opportunity to became familiar with vast amount of information present in our area ofinterest.	Agree	89 (46.8)	53 (27.9)	1.985 (.371)
	Agreed up-to some extent	25 (13.2)	22 (11.6)	
	Disagree	1 (0.5)	-	
OER leads to maximum participation in education.	Agree	71 (37.4)	35 (18.4)	5.865 (.053)
	Agreed up-to some extent	36 (18.9)	28 (14.7)	
	Disagree	8 (4.2)	12 (6.3)	
Without classes, students are able to gain knowledge in their subject.	Agree	70 (36.8)	40 (21.1)	4.047 (.132)
	Agreed up-to some extent	36 (18.9)	22 (11.6)	
	Disagree	9 (4.7)	13 (6.8)	
OER provides opportunities to learn new things.	Agree	89 (46.8)	51 (26.8)	3.027 (.220)
	Agreed up-to some extent	23 (12.1)	23 (12.1)	
	Disagree	3 (1.6)	1 (0.5)	
It enhances the knowledge on the given topic.	Agree	82 (43.2)	56 (29.5)	.258 (.611)
	Agreed up-to some extent	33 (17.4)	19 (10.0)	
OER leads to maximum utilization of the resources	Agree	74 (38.9)	45 (23.7)	.473 (.789)
	Agreed up-to some extent	39 (20.5)	28 (14.7)	
	Disagree	2 (1.1)	2 (1.1)	
Freely available	Agree	70 (36.8)	32 (16.8)	6.049 (.014)
	Agreed up-to some extent	45 (23.7)	43 (22.6)	

From the above Table 6, it is found that maximum number of students / scholars *agreed* at JNU for easy to access 76 (40%), 44(23.2%) at DU; acts as supplement 87 (45.8%) JNU, 46 (24.2%)

at DU; informed as user friendly at JNU 77 (40.5%), 37 (19.5%) at DU; multimedia content helps easy to understand at JNU 72 (37.9%), 48 (25.3%) at DU; trying to reuse at JNU 98 (51.6%), 59 (31.1%) at DU; use of technology in educational system at JNU 74 (38.9%), 46 (25.5%) at DU; quick access and delivery at JNU 83 (43.7%), 50 (26.3%) at DU; better resource during pandemic period at JNU 89 (46.8%), 49 (25.8%); enhances self-learning at JNU 85 (44.7%), 52 (27.4%) at DU; maximum participation in education at JNU 71 (37.4%), 35 (18.4%) at DU; as an opportunity to learn new things at JNU 89 (46.8%), 51 (26.8%) at DU and maximum utilisation of resources at JNU 74 (38.9%) and 45 (23.7%) at DU.

Also, it is found that maximum number of students / scholars *agreed up to somewhat extent* at JNU easy to access 35 (18.4%), 28 (14.7%) at DU; acts as supplement at JNU 23 (12.7%), 25 (13.2%) at DU; as user friendly at JNU 36 (18.9%), 33 (17.4%) at DU; multimedia content helps to understand more easily at JNU 41 (21.6%), 22 (11.6%) at DU; for reusing the content at JNU 16 (8.4%), 16 (8.4%) at DU; use of technology in educational system at JNU 39 (20.5%), 23 (12.3%) at DU; quick access and delivery at JNU 29 (15.3%), 22 (11.6%) at DU; OERs enhances self-learning at JNU 28 (14.7%), 23 (12.2%) at DU; maximum participation in education at JNU 36 (18.9%), 28 (14.7%) at DU; as an opportunity to learn new things at JNU 23 (21.1%), 23 (21.1%) at DU; maximum utilisation of resources at JNU 39 (20.5%) and 28 (14.7%) at DU.

It is found that maximum advantages are there by the use of OERs by the students / research scholars of JNU and DU.

Disadvantages of OER

It was requested about the disadvantages of using OERs in the questionnaire, the response is given below as Fig.1(Barchart). Some of them are face to face discussion is least possible, leads to less writing, at times difficult to locate OERs, stress on eyes, headaches and other problems, affects students' interest for attending the classes, reduces the interaction between students and faculty and sometimes metadata is not properly optimised.
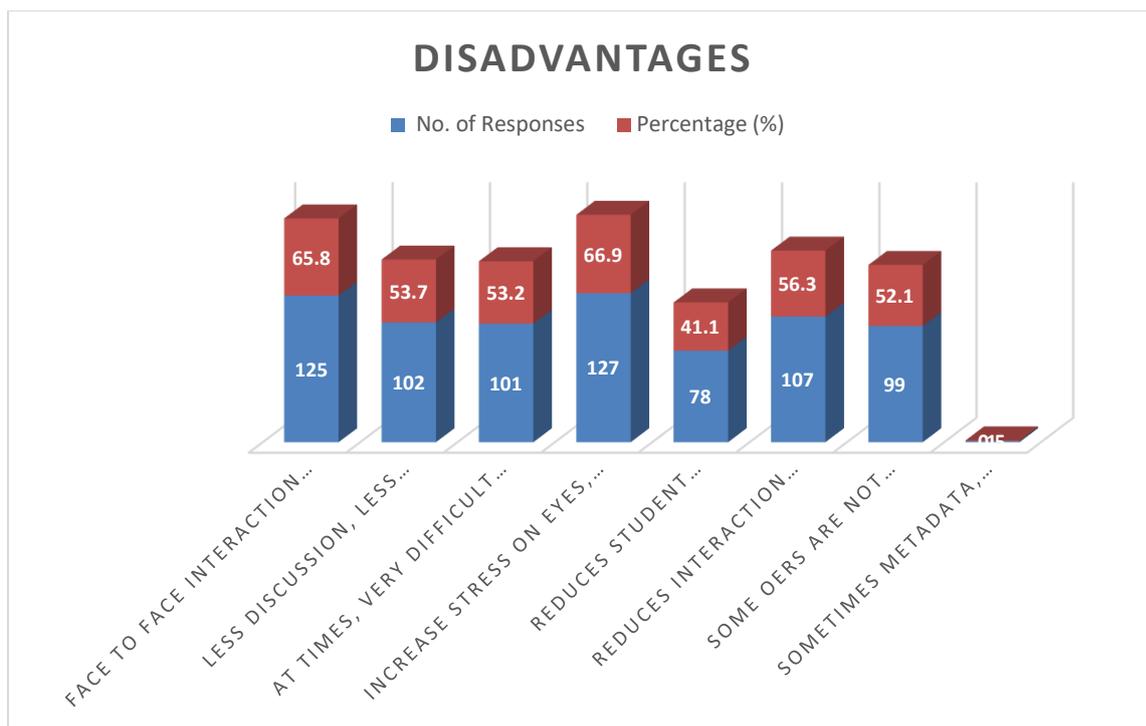
Fig 1. Disadvantages of using OERs

From the questionnaire, it is found that 65.8% of the students / scholars was observed that online resources are less interactive than face to faceas the most common disadvantage.56.3%of students / scholars mentioned that OER reduces the interaction between the students and faculty. 66.9% students felt that OER increases headache, stress on eyes etc.53.3%replied that using OER leads to less discussion and writing. Some of the OERs are not accessible at times, due to server problem or internet connectivity. Metadata for OER are sometimes not properly optimised. They also mentioned that attending lecturers reduces the student interests in attending classes.

Barriers

Barriers faced by students / scholars, for having used the OERs for learning and research are as follows:

i) Lack of internet facility with high bandwidth
ii) No proper tools available to check the authenticity of OERs
iii) Lack of training in the use of OERs and
iv) Lack of technology skills.
v) Lack of OER on my interested subject.
vi) Language as barrier in using OER

Chi Square results

From (table 1) that there is the significant difference between the gender and university as the chi square p value is less them 0.05. From (table 2), there is the significant difference between the responses received from different schools the chi square (p-value) is less them 0.05.

To investigate the difference in the awareness towards the OER, the Chi square test has been applied taking university in to the consideration (table 3). In further analysis it was investigated that there was no significant difference between university towards the awareness of OER, as chi square (p >0.05) in all the questions asked, represented in the table 3, students from both universities are same towards the awareness of OER. From (table 4), further it is found that there is the no significant relation between the category of universities (JNU and DU) towards the use of OER as the chi square (p-value) is greater them 0.05. From (table 6), further chi square test applied to know the difference between university towards the advantages of OER and it was found that there is significant relation between the universities (JNU and DU) towards advantages that OER are user friendly and OER are freely available as chi square (p-value) is less than 0.05, but in other advantages there is no significant relation between the universities (JNU and DU) towards advantage of OER as the chi square (p-value) is greater than 0.05.

Findings

The study found that most of the male students and research scholars are from JNU and female are from DU. Internet usage is by maximum number of male students / scholars. The response from the survey shows that almost everyone is aware of open educational resources. From the streams, maximum males and females have responded from social sciences, next from sciences (male), and finally arts and humanities (male) and female students secondly participative from arts and humanities and lastly from sciences (female students).

From the awareness table 3, it is found that all the respondents are using internet, maximum number of students / scholars are aware of OERs and about the provision of OERs by universities is known for 81(JNU) and 52 (DU) respondents. In regard to the teachers referring to OERs in the classroom 72 (JNU) and 55(DU) have responded as 'yes'. About suggesting others to use any kind of OERs 94 (JNU) and 57 (DU) responded as 'yes'.; Does your faculty use any OERs during teaching 60 (JNU) and 38 (DU) responded and 30 (JNU) and 23 (DU) as don't know responded.

In regard to frequency of access to the OERs 'regularly' was responded by 56 (JNU) and 35 (DU) and never was informed by 2 respondents from JNU. Research articles (140), text

document (139), Open books (114), dissertations and thesis (113), etc was responded for the types of OERs downloaded by the respondents. In regard to advantages to OERs, the respondents replied as easy to access, user friendly, reuse and any number of times can have access, available in multimedia formats, supplements to other educational resources, enhances self-learning habits and able to learn new things.

Conclusion

The study on awareness of OERs by the students and research scholars found that, they are very much aware of OERs and using them for learning and research. It is found that OERs are very much useful for everyone as it is freely available anytime anywhere.Findings from this study indicate that most of the students had positive experiences using an OER as their primary course material. There are invaluable insights to be gleaned from student survey responses. While it is great news that the majority of students fared so well using their course OERs, the survey results showed that therewere a small number of students who experienced difficulties; some experienced a lack of access to technology. Some of the barriers mentioned by them is also given. The emergence of OERs is an importantpedagogical shift that needs the perspectives of learners and educators to be implemented.As the OER movement reaches a defining moment in higher education, the LIS professionals should take more responsibilities by making them aware of the different OER resources at different locations to the academic community, so that the students and faculty may be benefitted.

References

1. Abramovich S, and McBride M. (2018). Open education resources and perceptions of financial value, *The Internet and Higher Education*, 39, 33–38.
2. Atkins D E, Brown J S and Hammond A L. (2007). A review of the open educational resources (OER) movement: achievements, challenges and new opportunities, Flora Hewlett Foundation Report to The William and The William and Flora Hewlett Foundation, (2007). Available at https://hewlett.org/wp-content/uploads/2016/08/ReviewoftheOERMovement.pdf
3. Bordoloi R. (2018). Transforming and empowering higher education through Open and Distance Learning in India. *Asian Association of Open Universities Journal*, *13*(1), 24–36.
4. Bowen W G, Chingos, M M, Lack K A and Nygren T I (2014).Interactive Learning Online at Public Universities: Evidence from a Six-Campus Randomized Trial. *Journal Of Policy Analysis and Management*, 33(1), 94–111.
5. Grewe K E and Davis W P. (2017). The Impact of Enrollment in an OER Course on Student Learning Outcomes, *International Review of Research in Open and Distributed Learning*, *18*(4).

6. Kumar A and Singh M (2019). Exploring the Use and Practice of Open Educational Resources (OERs) in Social Science Discipline with Special Reference to University of Delhi, Delhi. *Librar y Philosophy and Practice (e-Journal)*, 2664(2019), 1–21 Avaiable at https://digitalcommons.unl.edu/libphilprac/2664/

7. Kurelovic, E. Krelja (2016). Advantages and limitations of usage of open educational resources in small countries. *International Journal of Research in Education and Science (IJRES), 2*(1), 136-142.

8. Horn E A, Anderson R and Pierick K (2018). "Open Educational Resources (OERs) in Self-Directed Competency-Based Education". *Information Discovery and Delivery*,46 (4), 197–203.

9. Jaggars S S, Folk A L and Mullins D (2019). Understanding students' satisfaction with OERs as course materials, In Proceedings of the paper presented at the Conference*Bridging Educational Divides MOOCs and OERs*, 149–159.

10. Jilani, Aamir and Hemlata (2019). Impact of Indian open educational resources: a cases tudy of Postgraduarte stutemts In Ranbir Singh & others (Eds.),*Bridging educational divides: Moods and OERs* (67-109). New Delhi: National Law University Press. ISBN 978-93-84272-25-8.

11. Mishra S (2017). Promoting Use and Contribution of Open Educational: eLearning (Commonwealth of Learning, Canada Commonwealth Educational Media Centre for Asia, New Delhi) 2017, p. 1-148 Availablehttps://www.cemca.org/ckfinder/userfiles/files/CEMCA_OER%20Monograph.pdfAccessed on 1st September 2018).

12. Padhi N (2018). Acceptance and Usability of OER in Indian Higher Education: An Investigation Using UTAUT Model, *Open Praxis,* 10(1), 55-65.

13. Pappas I O, Giannakos M N and Mikalef P (2017). Investigating students' use and adoption of with-video assignments: lessons learnt for video-based open educational resources, *J Computer High Educ*, 29, 160-177.

14. Patidar N and Singh A K (2018). Utilization of Open Courseware amongst Students of Higher Learning Institutions in India. *International Journal of Interdisciplinary Research and Innovations*, 6(4), 34–40.

15. Robertson R J (2010). What do academic libraries have to do with Open Educational Resources? *Barcelona Open Ed,* 1–15 Available athttp://openedconference.org/2010(Accessed on 8thJuly 2021)

16. Rolfe V (2012). Open educational resources: staff attitudes and awareness, *Research in Learning Technology,* 20, 1-13.

17. Schuwer R and Mulder F (2009). OpenER, a Dutch initiative in Open Educational Resources. *Open Learning*, *24*(1), 67–76.

18. Sheeja N (2018). Open Educational Resources in India: A Study of NPTEL and its Usage. *Library Herald*, *56*(1), 122.

19. Thakran A and Sharma R C (2016). Meeting the Challenges of Higher Education in India Through Open Educational Resources: Policies, Practices, and Implications, *Education Policy Analysis Archives*, *24*(37), 1–12.

20. Zhang M and Li Y (2017). Teaching experience on faculty members' perceptions about the attributes of open educational resources (OER), *International Journal of Emerging Technologies in Learning*, *12*(4), 191–199.

21. https://www.jmi.ac.in/(Accessed on 29th June 2021)
22. https://en.wikipedia.org/wiki/Jamia_Millia_Islamia(Accessed on 29thJune 2021)
23. https://en.unesco.org/themes/building-knowledge-societies/oer
24. http://jmicoe.in/pdf19/Combined%20Prospectus%20Schools%202020.pdf(Accessed on 16thJune 2021.