Exploring Acceptance & Use of Open Educational Resources by Academics in Open Universities in India

PROJECT REPORT

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Acknowledgments

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Introduction

The establishment of the first Open University in UK in 1969 has given a new dimension to the Teaching-Learning and paved the way for 'Openness' in Education system. The term 'Open University' was used basically to open up education to large segments of population and take education beyond the four walls of traditional campus based education. Subsequent to the UKOU, several countries adapted the model and established Open Universities in their respective countries. Owing to the multiple advantages offered by Open Universities, such as increasing access and equity by providing flexibility to the learners in the choice of courses, relaxing the entry requirements, learning at the pace and place of the learners etc., Open Distance Learning has received wider acceptance as an alternate system of education. Thus, the Open Universities marked the beginning of 'Openness' into education system. India has followed the model and established its first Open University in 1982 in the State of Andhra Pradesh at Hyderabad. At present, there are 14 State Open Universities in India and One Open University functioning at the National Level, i.e., Indira Gandhi National Open University. The report of All India Survey of Higher Education (India. MHRD, 2014) revealed that Distance enrolment constitutes 11.7% of the total enrolment in Higher Education indicating the significant contribution of Open Distance Education.

The emergence of Open Educational Resources added a new dimension to the concept of 'Openness' in education. According to Sir John Daniel (Daniel, 2011 p.1), "Nevertheless, the Open University curriculum is closed in the sense that the programs and courses were defined and developed by the University – students can take them or leave them although they have great flexibility to mix and match". Traditionally, in the Open University system, the courses are specified, developed by the universities and the learner has limited freedom to choose from the available courses. Moreover, Open Universities impart education through Self Instructional Course Material supplemented with the audio and video lessons broadcast/ telecast through radio and television channels. However, each medium or channel attracts different set of audience and hence the entire student population seldom get the benefit out of these supporting media. The advent of Internet has made it possible to introduce more openness in open universities by opening up the content and offering open courses to the students.

The first Open Course Ware (OCW) initiative of MIT in 2002 brought revolutionary changes in the traditional higher education system. Since then, OERs have gained increased attention among the academic community in view of their potential in making affordable education accessible to larger sections. The basic idea behind the development of Open Educational Resources is that knowledge exists for the public good and therefore knowledge should be shared for the benefit of the society. Advances in communication technology, particularly the World Wide Web have increased the opportunities to share, use and re-use the knowledge and information. A larger portion of the academic community worldwide believe that access to knowledge is critical for the development of society and increased restrictions on use will hamper creativity and result in inequalities. However, not all academics support open scholarly content. Some fear that there is a threat of inappropriate use of their intellectual property and some worry about the potential loss of revenue to the institutions and individuals. This paper intends to explore the acceptance and use of OERs by academics of Open Universities in India.

The specific objectives of this study are to examine –

- Extent of use and contribution to Open Educational Resources by the respondents
- Extent to which academics perceive the usefulness, Ease of Use of OERs
- Factors influencing the willingness of the respondents to use OERs
- Respondent's Awareness of different OER initiatives and resources
- The obstacles in the use of OERs ; and
- To discuss the measures for sustainable use of OERs in Open Universities in India.

Context

Several research studies were conducted and published on different aspects of Open Educational Resources across the globe. A report prepared by faculty at British Columbia post secondary institutions explored the use of OERs (Jhangian, R.S and others, 2016). The study explored the enabling factors for OER use; perceptions on the impact of OERs on learning outcomes and awareness of OERs among the faculty. Study finds that it is important to raise the awareness of the existence of OERs. Knowledge of locating, reviewing the quality and adapting them are important to reap the benefits of OER to the full extent.

Acceptance of any new invention depends mainly on the ease with which it can be used and the perceived usefulness for the purpose. Kelly (Kelly, 2014) studied the perceptions of educators about OERs using the Technology Acceptance Model. By conducting a discriminant analysis on the data, the study finds that usefulness of OERs is perceived to be high. 'Ease of use' is an important factor that affects the use of OERs.

Awareness is another important factor that determines the use of a resource. Rolfe (Rolfe, 2012) studied the Staff attitudes and awareness by interviewing staff of the De Montfort University, Leicester, UK. Study finds that the staff is familiar with the open content repositories within the university but not about the externally available OERs. While the staff used outside resources, they never contributed to the OERs. Study finds that lack of awareness and confusion over copyright issues was the barriers to the use of OERs.

While several countries are forging ahead with research on development and use of OERs, there is lot of research that is being generated from India. A study by Das (Das, 2014) reviewed the OER initiatives under National Mission through ICT support during the 11th & 12th Five year plan period. Various OER initiatives in India are discussed in the study.

Harishankar, Balaji and Ganapuram (2013) studied the individual and institutional preparedness to embrace OERs in India. Using the KAP – Knowledge, Attitude and Practice Model, widely used by social scientists to study the beliefs and misconceptions of a new phenomenon, authors attempted to study the OER acceptance among the different stakeholders. Study observes that there is lack of awareness about OERs and related copyright regulations and individual production of OER is related to the lack of career incentive. Further study finds that most of the OER efforts are individual and institutional support mechanism is lacking.

Another article published by the Das (Das, 2011) discusses the impact of Open Educational Resources on Life Long Learning. Author says that OERs can be broadly categorized as Audio-Visual OER and Textual OERs. Study discusses the role of various Audio-Visual materials prepared by NPTEL (National Programme on (Technology Enhanced Learning) in promoting quality content, inclusive growth and spread of technical and vocational education in the country.

Vijay Kumar (2009) in his article on "Open Educational Resources in India's National Development" discussed the organizational organisational considerations and infrastructure readiness as part of a systemic and sustainable strategy to make effective use of Open Educational Resources for scaling educational opportunity and excellence in the Indian context.

Research study (Venkaiah, 2007) on attitudes and perceptions of Distance Teachers on the use of Open Educational Resources in India is carried out based on the survey of 105 faculty working in distance teaching institutions including IGNOU, BRAOU, CAP Foundation, Maulana Azad National Urdu University and Madurai Kamraj University. Criteria such as access, cost, localization, quality and impact of OERs are studied. Study finds that the use of OERs by distance teachers is remarkably high.

Survey of literature reveals that several studies are conducted on different aspects of OERs. International Organizations like – Commonwealth of Learning, UNESCO & Hewlett Foundation are working in the direction of promoting OERs. These are actively involved in spreading awareness through workshops, developing guidelines for access, improving the use and quality of OERs. However, inspite of these efforts, published research on OERs is not considerable in India. Very few studies have focused on acceptance, awareness and use of Open Educational Resources in Open Universities. It is in this context, present study intends to study the perceptions of faculty working in Open Universities in India.

Method

The present study is primarily based on the dimensions of 'OER Acceptance' that include Perceived Usefulness; Ease of Use; Awareness about different OER initiatives and resources. Other factors that influence the willingness or hinder OER Use; and suggestions for sustainable use of OERs are also studied with the help of a structured questionnaire. To study each dimension, certain statements relevant to each dimension are posed and the respondents are asked to rate their preference on a five point Lickert scale. In all, there are a total of 122 statements in the questionnaire.

The questionnaire is then hosted on "Survey Monkey" platform to obtain responses online. Email ids of nearly 200 faculty members working in 13 open universities are obtained by visiting the websites of these universities. However, two open

Universities – Tamil Nadu Open University (TNOU) and Pt.Sunderlal Sharma Open University, Chattisgarh (PSSOU) have not listed the email ids of their faculties in their websites. Email Invitations are sent to the faculty members to participate in the survey. None of the faculty from Madhya Pradesh Bhoj Open University,Bhopal; Nalanda Open University, Patna and Uttarakhand Open University, Nainital have responded. Within a short span of 15 days (from 14th to 28th August 2016), 72 responses were obtained. However, three responses were incomplete and cannot be considered for analysis. Hence, analysis is based on 69 complete responses. The institution-wise distribution of the responses is presented in Table No.1.

Table No.1: Institution-wise distribution of responses

S.No.	Name of the Institution	Responses	
		No	%
1	Babasaheb Ambedkar Open University, Gujarat	2	2.90
2	Dr.B.R.Ambedkar Open University, Hyderabad	21	30.43
3	Indira Gandhi National Open University, Delhi	16	23.19
4	Karnataka State Open University, Mysore	5	7.25
5	Krishna Kant Handiqui State Open University, Assam	10	14.49
6	Netaji Subhas Open University, Kolkata	5	7.25
7	Odisha State Open University,	5	7.25
8	UP Rajarshi Tandon Open University, Allahabad	2	2.90
9	Vardhaman Mahaveer Open University, Kota	4	5.80
10	Yashwantrao Chavan Maharashtra Open University, Nashik	2	2.90

The responses are analysed according to the study objectives. Using SPSS trial version, data is analysed applying simple statistical measures like percentages, parametric tests such as Mean, Standard Deviation, ANOVA, and F-test. MS-Excel is used to calculate Normal Distribution of Variables in different dimensions.

The convenience sampling adopted for this study delimits the generalizations drawn to this particular group of respondents. The study is limited in its scope since the sample drawn for the study is limited to approximately 15% of total faculty members working in the Open Universities in India.

Respondent's profile

Analysis of the profile of the respondents with regard to Age, Gender, Designation, Subject Discipline and teaching experience are presented in Table no.2

Table No.2- Background Information about the Respondents

Particulars	Number	Percentage
Age Group (Years)		
26-30	9	13
36-40	10	15
41-45	18	26
46-50	12	17
51-55	5	7
56-60	10	15
61-65	5	7
Gender		
Male	**38**	**55**
Female	31	45
Designation		
Professor	14	20
Associate Professor	5	7
Assistant Professor	50	73
Discipline		
Science	7	10
Social Science	23	33
Arts & Humanities	10	15
Commerce & Management	8	12
Engineering & Technology	6	9
Education	10	15
Others	5	7
Teaching Experience (Years)		
0-5	16	23
6-15	36	52
16-25	6	9

26-35		11	16

Use & Contribution to OER

The use and contribution of the academics of Open Universities are depicted in Table No.3. While the use of the OERs is high (81.2%) the contribution of the respondents to OERs is Low (30.4%).

Table No.3: Use & Contribution of OERs by the Respondents

Response	Use No. (percentage)	Contribution No. (percentage)
Yes	56 (81.2)	21 (30.4)
No	13 (18.8)	48 (69.6)

Analysis by designation reveals that although 92% of Professors used the open educational resources, only 28% of them have contributed to OERs. Majority of Assistant Professors (76%) have used the OERs, however, only 32% of them have shared their contributions as OERs (Table no.4).

Analysis by discipline reveals that all the respondents (100%) belonging to Sciences, Engineering & Technology and Arts & Humanities said they are using OERs. Nearly 30% respondents in Social Sciences, 20% in Education and 12.5% in Commerce & Management are not using OERs (Table no.4).

In all, study reveals that although use of OERs by the respondents is high, contribution to OER by academics of 'Open Universities' is not significant.

Table No.4: Analysis of Use and Contribution by the respondents by Gender, Designation & Discipline

Independent Variable	Use				Contribution			
	Yes	No	F-value	Significance	Yes	No	F-Value	Significance
I. Gender								
Male	35 (92.1)	3 (7.89)	7.119	0.01	10 (26.32)	28 (73.68)	0.665	0.418
Female	21	10			11	20		

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	(67.74)	(32.26)			(35.48)	(64.52)	
II.Designation							
Professor	13 (92.86)	1 (7.14)	1.649	0.200	4 (28.57)	10 (71.43)	0.162	0.850
Associate Prof	5 (100)	0 (0.00)			1 (20)	4 (80)		
Assistant Prof	38 (76)	12 (24)			16 (32)	34 (68)		
III.Discipline								
Sciences	7 (100)	0 (0.00)	2.426	0.036	1 (14.29)	6 (85.71)	1.396	0.231
Social Sciences	16 (69.57)	7 (30.43)			5 (21.74)	18 (78.26)		
Arts & Humanities	10 (100)	0 (0.00)			5 (50)	5 (50)		
Commerce & management	7 (87.5)	1 (12.55)			4 (50)	4 (50)		
Engineering & Technology	6 (100)	0 (0.00)			3 (50)	3 (50)		
Education	8 (80)	2 (20)			3 (30)	7 (70)		
Others	2 (40)	3 (60)			0 (0)	5 (100)		

One way ANOVA is used to observe whether the use and contribution to OERs differs with independent variables like- gender, designation and discipline. The F-values for almost all the variables is less than 0.5, except for contribution to OER based on Designation (0.85). Hence it can be inferred that the variance is not significant. The relation between contribution and designation is observed to be significant.

Enabling Factors, Ease of Use, Willingness & Awareness

Normal Distribution of Variables in the four dimensions

As the number of variables used in each dimension is large, normal distribution is used as a measure to calculate the level of acceptance. The number of statements in each dimension is multiplied with the neutral score which is again divided by the Standard deviation calculated for each dimension. This value is subtracted from the value of dimension obtained by no. of statements multiplied by the neutral score to get the range values for three levels viz., low, moderate and Significant. The values thus defined for each variable are presented in Table No.5.

Table No.5: Calculation of different levels of Acceptance

Dimension	No. of statements	Scale	Neutral Score / (S.D.)	Range for different levels of Acceptance		
				Low	Moderate	Significant
I Enabling Factors	18	5 pt.	4.78	<49.72	49.72-58.28	58.28
II Ease of Technology	7	5 Pt.	2.11	<18.89	18.89-23.211	23.21
IIIFactors influencing Willingness	7	5 Pt.	1.86	<19.14	19.14-22.86	22.86
IV Awareness	16	3pt	6.42	<25.58	25.58-38.42	38.42

Table No.6 – Level of Acceptance of the Respondents based on Dimension

Dimension	Responses based on Level of Acceptance					
	Low		Moderate		Significant	
	No.	%	No.	%	No.	%
I Enabling Factors	0	0.00	2	2.89	67	97.10
II Ease of Use	8	11.58	27	39.13	34	87.17
III Factors influencing Willingness	0	0.00	9	13.04	60	86.95
IV Awareness	30	43.48	29	42.03	10	14.49

From the table no.6, it is clear that the significance level of acceptance is high for all the four dimensions. However, as indicated in the table-6, in the second dimension, nearly 40% of respondents felt that the technology associated with OER is only moderately easy. A larger percentage of respondents (43.48) have low awareness of the different initiatives, resources and searching OERs as revealed in Dimension IV.

Respondents agreed that the factors listed under dimension-3 highly influence their willingness to use and contribution of OERs.

The first three highly ranked statements in each dimension, by the respondents are presented in Table No.7. The total scores are obtained for each dimension by adding up individual sores (ordinal values) of 69 respondents for each statement. The total score is divided by total respondents to get the average scores.

Table No.7 – Highly Ranked Statements by the respondents in Each Dimension

Dimension	High Ranked Statements	Score		Rank
		Total	Average	
I: Enabling Factors	Knowledge is for the common good and hence it should be shared	325	4.71	1
	Use of OER gives recognition	312	4.52	2
	OER Saves money	310	4.49	3
	Use increases when there are no restrictions	306	4.43	4
	OER Saves time	306	4.43	4
II. Ease of Use	Do not require specialized skills to create OER	255	3.70	1
	Easy to search & locate OER	253	3.67	2
	Applying for CC license is easy	251	3.64	3
III. Factors Influencing Willingness	Willing to use & contribute if incentives are provided	295	4.28	1
	Willing to use if awareness is provided	294	4.26	2
	Willing to Use & contribute in case of recognition by National & International bodies	292	4.23	3
IV. Awareness	Wikipedia	135	1.96	1
	Google advanced search for OER	130	1.88	2
	OER Directory developed by COL	123	1.78	3

Obstacles to OER Use

The respondents are asked to rate the 16 statements describing the factors that hinder the creation and use of Open Educational Resources. The six important factors ranked in order by the respondents are listed below.

1. Lack of Internet access to students of ODL
2. Lack of awareness among students
3. Lack of separate funding for OER Creation
4. Fear of low recognition for OERs

5. Lack of Institutional Policy for OER
6. Sharing materials incurs loss to the institution

Study by Jhagiani and others (2016) on OER use by faculty at British Columbia, has listed difficulty in locating relevant OERs, quality of OER and time as the three important barriers. However, in India, where penetration of Internet is low especially for the distance students from rural areas using OERs is not very convincing. Hence lack of Internet Access and awareness of OERs among students are ranked as the major barriers. As seen from the analysis, the faculty awareness of OERs is also not very significant and therefore creation of awareness at various levels of the Open University system becomes important. A significant proportion of the respondents still feel that lot of money in invested in developing the material and sharing them incurs loss to the institution. Hence, separate funding for creation of OERs is required.

Sustainable Use of OER

Respondents identified the below mentioned statements as relevant for sustainable use of Open Educational Resources.

1. Creation of OER Repositories
2. Undertaking activities for creating awareness among students, faculty and institutions about OERs
3. Promoting efforts to create Open Educational Resources in vernacular languages

Creation of OER Repositories is an important task. Building Common Intellectual Capital that can be accessed without any restrictions by all is not an easy task.

Discussion

Creation and use of OERs requires a culture of sharing. Research and experiences show that the acceptance of OER demands a culture of sharing, valuing innovative and social-network-based forms of learning, and encouraging novel pedagogical models (OPAL, 2011). The Open Access initiatives of NMEICT project of IITs of India and the e-patashala initiative of NCERT are some important contributions from India to OERs. The content in these repositories is created by experts in different disciplines and hence can be relied for their quality. Open universities can encourage their faculty to re-mix and re-use the content and offer them to the students. The Open Universities over the years have developed rich and valuable Self Instructional Material and audio and video lessons for the benefit of students. However, the fear of loss of money, monopoly over copyrights hinders them from sharing these resources for public good. Creation of a common OER Repository by collaboration of all the Open Universities will not only encourage the teachers to contribute to OER but also will help to save money and avoid duplication of effort by individual institutions.

For Sustainable use of OERs, the first requirement is that academics and learners become familiar with OERs, as is the case with Wikipedia. John Seely Brown (Brown, 2000), writing about learning in a digital age, suggested electricity as an apt analogy for the impact of the Internet and the Web. According to him, Michael Faraday built a small generator that produced electricity, but it took a long time for the invention to stabilize. Once it took hold, it pervaded and changed all spheres of life. Similarly, OERs also will gain acceptance once people become aware of the benefits and as technology penetrates it will become a commonplace item of everyday life. Integrating OERs into the curriculum will help to improve awareness about OERs among the students. Use of OERs for developing lessons and delivering lectures; introducing more openness in pedagogy and encouraging open educational practices are important for sustainable use of OERs.

This can be made possible if Government takes keen interest and envisage clear cut policies for creation and use of OERs. Not only allocation of separate funding is required but Government should encourage participation and research in OERs by recognizing and rewarding the OER efforts.

Conclusion

Several factors interplay in the acceptance of Open Educational Resources. The Technology Acceptance Model developed by Fred Davis has been a widely used model to explore the acceptance of technology. According to this model, a new technology or concept will be accepted by the users if they are convinced about the usefulness and if they can use the technology with ease. This in turn determines the actual use. However, in case of OERs, associated technologies like – availability of Internet access; skills of locating, searching and evaluation of OERs are very much required. Awareness about OERs should percolate through different levels of education system, from academics to the learners. OERs should become part of the pedagogy and teaching-learning process for the sustainable use of OERs.

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 Dr. G.Saroja has published more than 40 papers in reputed journals and conference proceedings, edited three books. She has contributed research papers to National & International Conferences not only in Library & Information Science but also in the field of Open Distance Education. She visited London, Brunei Darussalam to attend International Conferences organized by Commonwealth of Learning in 2008 and 1998 respectively.

Four M.Phil. & Three Ph.D. candidates were awarded research degrees under her research guidance. She has specialized in Research Methods for Library sciences and IT applications in libraries. She has conducted two National Seminars and one three day workshop on behalf of the department.

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