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RESEARCH ARTICLE

THE USE OF OPEN EDUCATIONAL RESOURCES IN TEACHER EDUCATION: A SURVEY OF THE INSTRUCTIONAL METHODS USED BY FACULTIES OF TRAINING COLLEGES

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ABSTRACT

Open Educational Resources (OER), is a term adopted at a UNESCO meeting in 2002. It implies the provision of educational resources, without any charge, for consultation, use, and adaptation by users for non-commercial purposes. The introduction of the internet combined with digitalized multimedia and its applications in education and industry have brought many changes to the educational landscape. In this context, the investigator conducted a survey to seek teachers of teacher students' intention to use Open Educational Resources, when the resources were used as a supplementary teaching-learning tool within a traditional class. Through user-reported self-assessment questionnaires of 35 training college teachers teaching at B.Ed courses offered by various institutes located in the Malappuram District of Kerala, required data was collected. The study reveals that though open educational resources can enhance the quality and standard of teaching-learning processes to a greater extent, due to the absence of proper awareness about Open Educational Resources, they are not properly used by teachers.

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INTRODUCTION

The term 'Open Educational Resources (OER), was first officially agreed upon by UNESCO in 2002. It was to describe the need for global commons generated by the collective brain power of the masses. That led to the global community coining of Open educational materials or courseware. Open educational resources imply the delivery of free digital platforms to be used as educational resources. It is available without any pay, for consultation, operation, and adaptation by users for non-commercial impetus. OER may include any tools, materials, methods or whole courses, course materials, programs of studies, textbooks, gushing videos, appraisal, software, etc. which are freely available on the internet. Open Educational Resources include learning content to be taught, tools required for the creation, distribution, and advancement of open learning content, and implementation resources with inherent related issues such as intellectual property licenses to boost open publishing of facts and figures, outline principles, and positioning of content that grant no-price ingress, re-utilize, re-purpose, re-modelling and re-division by others. The objective behind it is "to develop universal educative resources available for the whole of humanity" and "the hope that open resource for the future mobilizes the whole of a worldwide community of educators" (UNESCO, 2002). Policies of OER in the continuous development and upgrades policies. This study has a very influential role, particularly in Higher Education in developing countries.

The introduction of the internet combined with digitalized multimedia brought changes in all spheres of life. Its applications in education and industry have brought many changes to the educational landscape. It results in higher demands for online teaching and learning processes, powerful instruments to demonstrate and communicate professional accomplishments and share teaching subject matters, development, and restructuring of pedagogy, etc. That brings new roles for academicians such as the espousal of resource-based teaching and learning materials, conditions to combine technologies into teaching and learning, and to implement of Open Educational Resources strategies in order to magnify equity, quality, and share instruction technology assets, which are necessary to take part global surrounding of Higher education and to connect the increasing demand for tertiary education. The National Curriculum Framework 2005 of government of India has specific implications not only for the quality of the interchange but also for drastic upheavals of center-dominated mindsets that have inhibited qualitative improvement. It emphasizes the potential of educational technology in schools, in the teaching of subjects, in examinations, in research, in systemic reforms, and above all in teacher education, overcoming the conventional problems of scale and reaching online, anytime, anywhere. The benefits of available Open Educational Resources will not be properly used by teachers unless they are trained to use them. The study emphasizes on the necessity of introducing and training on how to use access resources and other Internet technologies in teacher preparation courses when the system is used as a supplementary, learning tool within the traditional class.

Covid pandemic made a total swift or replacement from the physical process of face-to-face education. Or it accelerated our dependence into an online manner without waiting for further time. During the isolation period, the whole education system underwent a clumsy exercise. Due to that, the existing systems were forced to adopt the new situation. The new National Education Policy-2020 (NEP-2020) has been announced recently by the Ministry of Education (MoE), Government of India, has a re-creation ingredient for these issues. Some of the main focus of the policy were to furnish; ingress, justice, value, and accessibility. Those main focuses can be achieved only through forming an environment of learning by combining a number of techno pedagogical devices that are freely and openly available. Due to various reasons, a larger chunk of Indian society was unable to get a quality education during the earlier years. NEP addresses those and intends to provide education to those sections including underprivileged sections of society through open educational resources which are accessible to all students even in very remote areas. So open education resources through digital learning in the context of the National Education Policy 2020 deserve much importance. If we analyse the development of present system of OER we can see that it is the modified distance learning is reshaped by the OER. The earlier form of distance education was correspondence and Continuing Education courses. Now a days the way of imparting knowledge in these courses is modified and reshaped by digital open educational resources. The launch of the OER in digital form by the National Programme on Technology Enhanced Learning (NPTEL) in 2003 is the first digital attempt in India. It was financed by the then MHRD, Government of India. It was a joint venture of IITs and IISc. Through this program, NPTEL offered education and educational resources to all engineering aspirants in the country. And from March 2014, it started open online courses accessible to everyone other than the IIT fraternity. Other important pioneering OER initiatives in India were eGyan Kosh of IGNOU, which is stand ill in existence, Vidyanidhi – a digital library and e-scholarship portal for theses and dissertations. Vidyanidhi is the University of Mysore's national digital library initiative, but this portal is now unavailable. National Mission for Education through Information and Communication Technology (NME-ICT), in association with IIT Bombay, took the Open Source Courseware Animations Repository (OSCAR) initiative, which is a repository of web-based, interactive animations for teaching various concepts and technologies. This will be an autonomous body set up by the government to form a platform where exchanging of idea can take place. This multi-way communication will definitely enhance the learning experience. The central government, state government, and several institutions will also be a part of this ecosystem, making it more comprehensive.

OBJECTIVES OF THE STUDY

- To study the ways of using Open Educational Resources by teachers teaching in B.Ed colleges.
- To find out the awareness of teachers towards the Open Educational Resources that can be used for enriching teaching-learning process.
- To find out the extent to which B.Ed Faculty members currently integrate Open Educational Resources into their instructional methods.
- To promote the ways of integration of Open Educational Resources in to the curriculum and the expansion of B.Ed courses.
- To make suggestions for the better application of Open Educational Resources in social sciences teaching at B.Ed courses.

DESIGN OF THE STUDY

The study targeted a group of teachers who teaches at B.Ed training colleges offered by various institutes located in the Malappuram District of Kerala. The descriptive survey method was applied. For collecting the data a total of 35 questionnaires were distributed to the teachers by the investigator. Completed inventories were collected within one week. It is confirmed that the relevant ethics and approvals have been obtained. Statistical measures and techniques used for this

study include the computation of percentages and ranks. To study awareness index was calculated. For a diagrammatic and graphical representation of data line graphs and bars, diagrams were also used.

ANALYSIS OF DATA

As in all other aspects of life, awareness of Open Educational Resources is the first important factor that prompts a teacher to use it for enriching classroom activities. For the sake of seeking the genuine endowment of teachers in enriching their classroom using Open Educational Resources, the investigator attempted to find out the percentage of that how many number of Teachers who are well aware, vaguely aware, and not aware of some of the Open Educational Resources available through the internet. Here, vague awareness means that they have some idea, but it is not clear. For bringing this fact out, a question was given in the questionnaire '*following are few Open Educational Resources that can be used by teacher educators. Among them mark those resources, which are aware, not aware, and vaguely aware to you. And if you are aware of any other Open Educational Resources other than those given below please write them (at least few of them if there are many) on the open place*'. For further analysis, the investigator also constructed groups on the basis of teacher's awareness. The obtained answer to the above question was analysed and summarized in Table 1 and Diagram 1 (Teachers' awareness towards Open Educational Resources). It is from Table-1 and Diagram-1 that those items that belong to well aware which were known to all participants were respectively Courseware and Learning Resources, Institutional Repositories, National Repositories, Search Engines, University Directories. It was followed by Virtual Libraries/Subject Gateways, Reference Management & Writing Assistance Tools, e-Journals, e-Books, e-Print Archive, Patents and Standards, e-Journal Databases. These were the items marked in the vague awareness group. Web- Based Tools Children's home learning, Competitions/ Corporate training/ test software were the items that included in not aware category. The table-1 and diagram-1 reveals that a high majority of teachers are not aware of a large chunk of Open Educational Resources that are freely available to them through the internet.

For constructing teacher's awareness groups, 3 category values were formed. And the category value of each item marked by each participant was counted. And based on the percentage of the total score of each category of each participant, the researcher divided the participants into three groups. Viz. well aware, vaguely aware, and not aware. The three groups of participants and their percentage group value with weight age is given in table- 1.2. (Group point value). E.g. for participant one, Category 1. Courseware and learning resources. Total items considered were 23. So maximum score is $23 \times 3 = 69$. Obtained score = $20 \times 3 = 60$. I.e. It belongs to groups 46-69. Therefore belongs to the group of well aware. So respondent 1 in category 1 grade is equal to Well Aware. If Vague aware, Maximum score = $23 \times 2 = 46$. And Minimum score is 23. So vague awareness group is 23-46. And those participants who obtained a score below 23 are counted in the not used group. Aiming to have a detailed exploration regarding the use of open Educational Resources, the above question was followed by another i.e., *Mark 'X' on those Open Educational Resources used by you from the above box. And you are free to add items on the dashed lines that have not been mentioned here*. The conclusion came to this question is summarized in diagram table-1.3 (Use of open educational resources by teachers) and Diagram-1.2 (Use of Open Educational Resources by teachers). Courseware and Learning Resources, Institutional Repositories, National Repositories, Search Engines, University Directories were the most used OERs by teachers. It was followed by Virtual Libraries/Subject Gateways, Reference Management & Writing Assistance Tools, e-Journals, e-Books, e-Print Archive, Patents and Standards, e-Journal Databases were the items that are used but not effectively used. . Web- Based Tools Children's home learning, Competitions/ Corporate training/ test software were the items that used by the teachers. The table-1.2 and diagram-1.2 reveals that a high majority of teachers are not used a large part of Open Educational Resources that are freely available to them through the internet. To find out that is there any relationship

exists in between the awareness about OER and OER used by teachers, the correlation function returns that is the correlation coefficient, to determine the relationship between a measures of the order in a system, was used. The pearsonian co-efficient correlation was used here. The formula used for this study was

$$r = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2} \sqrt{\sum(y-\bar{y})^2}}$$

Where, \bar{x} - mean of X variable
 \bar{y} - mean of Y variable

The correlation function measures how the variables teacher's awareness and use of OER are related. The study found that the use of OER by teachers for teaching learning purpose is quite

Table.1.1. Group point value

GROUP POINT PERCENTAGE	WEITAGE	GROUP
32-48	3	Well Aware
16-32	2	Vague Aware
Less than 16	1	Not Aware

In proportion to their knowledge and awareness about OER. The correlation function value of 'Well Aware' in table 1.1 and 'Effectively Used' in table number 1.1 has a very strong highly positive value i.e., 0.979852453 which indicates that there is a strong positive relationship exists between awareness and use of OER. And correlation function value for 'Vague Awareness' and 'Used but not effectively' is 0.638064677 also indicate a moderate positive linear relationship between the two variables. The correlation coefficient to determine the relationship between two properties, 'Not aware' and 'Not used' IS 0.164544782 indicates a very weak but positive coefficient of correlation exists in between the two variables. With the objective of finding out those activities that prompted teachers to be aware of Open Educational Resources, a question was raised. The question was 'how do teachers come aware of Open Educational Resources?' 'The informants were asked to provide as much Table 1.1 information as they like. So multiple responses were collected. These responses were recorded and later compiled. The percentages were attached and ranks were allocated to them in such a manner that the most replicated comeback was given the 1st rank and the least replicated comeback the last rank. The obtained frequency of responses to questions from teachers' points of view was given in table 1.4 (Sources of awareness creation about Open Educational Resources) and diagram- 1.3 (Sources of awareness creation about Open Educational Resources).

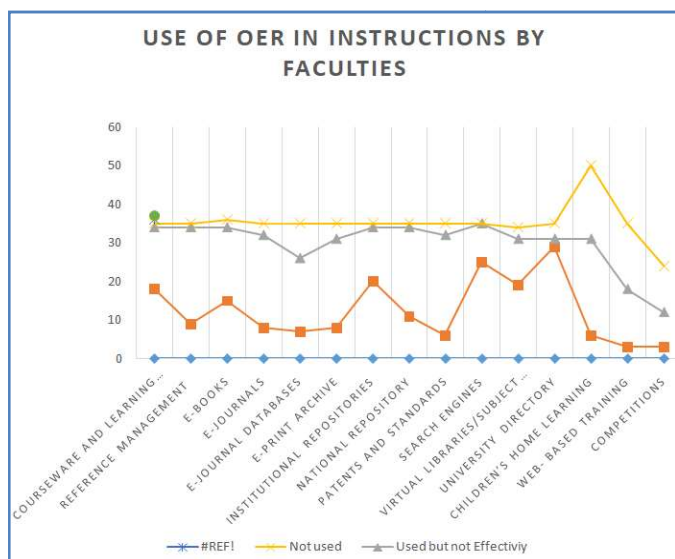


Diagram 1.1. Teachers' awareness index of open educational resources

It is clear from the table that 65% of teachers became aware of educational resources through self-study and internet surfing. Since it was the most responded item it was given the first rank. It was followed by magazines, journals, or other publications(11), students (111), special programs organized for awareness creation(VI), pre-service and in-service teacher training courses (V), co-workmates/other teachers(IV), institute management/principle(VII), TV, newspapers, and other dailies(VIII), awareness got from information literacy courses(IX), attending special works seminars/class ass(X). The least responded item was awareness got from others (from parents/relatives or friends) with a percentage of 2.75. Table- 1.5 and Diagram- 1.4 regards the responses to the query 'what are the problems that prevent you from using Open Educational Resources to enrich your task of educating?' An informant was free to supply as many responses as they like. The conclusion emerges from the above analysis light on the difficulties faced by teachers in introducing Open Educational Resources in training colleges.97.14% of the respondent opined that lack of pre-service/in-service training to use Open Educational Resources was the major obstacle. It was followed by another factor i.e., non-compulsion to use Open Educational Resources either from authority or from the student's community. 71.43% of teachers were with this view. Other factors that prevented teachers from using OER were respectively from their order of percentages from the highest to the lowest were lack of specially trained teachers to train teachers(25.71), constraints within the curriculum(22.86), lack of convenient timing(22.86), lack of infrastructure facilities(20.00), lack of a proper mechanism to motivate to use OER (11.43), lack of knowledge about meet OER(8.57), helplessness to find out a most suitable strategy for adopting OER(5.71), and personal constraints(2.86). It is from Table-1 and Diagram-1 that those items that belong to well aware which were known to all participants were respectively Courseware and Learning Resources, Institutional Repositories, National Repositories, Search Engines, University Directories. It was followed by Virtual Libraries/Subject Gateways, Reference Management & Writing Assistance Tools, e-Journals, e-Books, e-Print Archive, Patents and Standards, e-Journal Databases. These were the items marked in the vague awareness group. Web- Based Tools Children's home learning, Competitions/ Corporate training/ test software were the items that included in not aware category. The table-1 and diagram-1 reveals that a high majority of teachers are not aware of a large chunk of Open Educational Resources that are freely available to them through the internet. The correlation function measures how the variables teacher's awareness and use of OER are related. The study found that the use of OER by teachers for teaching learning purpose is quite in proportion to their knowledge and awareness about OER. The correlation function value of 'Well Aware' in table 1.1 and 'Effectively Used' in table number 1.1 has a very strong highly positive value i.e., 0.979852453 which indicates that there is a strong positive relationship exists between awareness and use of OER. And correlation function value for 'Vague Awareness' and 'Used but not effectively' is 0.638064677 also indicate a moderate positive linear relationship between the two variables. The correlation coefficient to determine the relationship between two properties, 'Not aware' and 'Not used' IS 0.164544782 indicates a very weak but positive coefficient of correlation exists in between the two variables.

FINDINGS OF THE STUDY

- Except in certain reference software- like dictionaries, encyclopaedias and Wikipedia teachers are either not aware or they have no clear cut awareness.
- All teachers except three had marked that they have used some reference software like dictionaries, encyclopaedias and Wikipedia in enriching their teaching learning process. But the percentage of using those Open Educational Resources other than mentioned above is less than 50%. It reveals that high majority of teachers are away from using a large chunk of Open Educational Resources available to them.
- Teachers marked that the OER used by them is quit in proportion to the OER which `are aware to them.

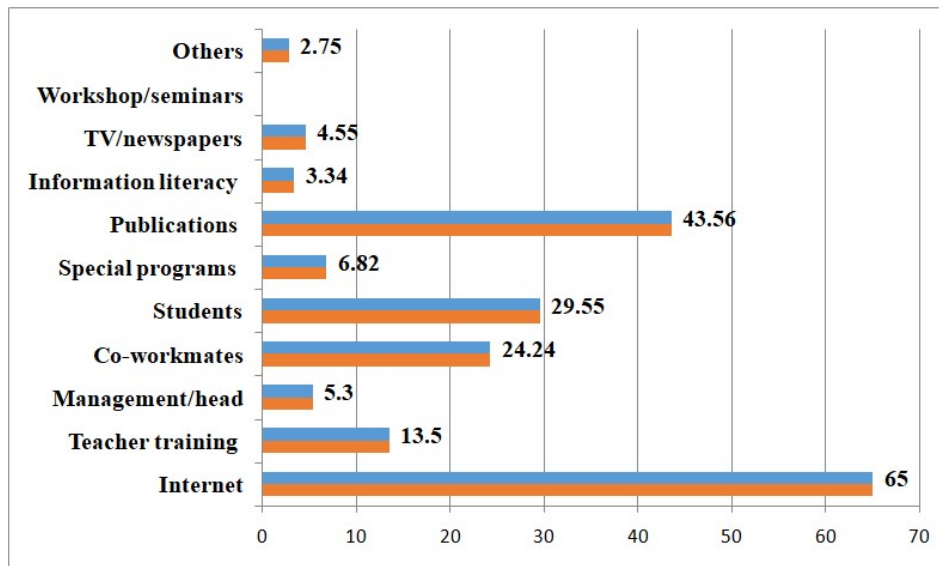


Diagram 1.2. Sources of awareness creation about open educational resources

Table 1.2 Teachers' use towards open educational resources

SL.No.	Available OER	Well aware	Effectively Used	Vague aware	Used but not Effectively	Not aware	Not used
1	Courseware and Learning Resources	35	35	0	0	0	0
2	Reference Management	20	17	13	12	2	2
3	e-Books	17	14	12	4	3	3
4	e-Journals	19	16	13	16	4	4
5	e-Journal Databases	12	16	18	18	5	5
6	e-Print Archive	16	18	15	15	4	4
7	Institutional Repositories	35	35	0	0	0	0
8	National Repository	35	35	0	0	0	0
9	Patents and Standards	13	14	19	19	3	3
10	Search Engines	35	35	0	0	0	0
11	Virtual Libraries/Subject Gateways	23	20	9	12	3	3
12	University Directory	35	35	0	0	0	0
13	Children's home learning	7	6	27	3	1	26
14	Web- Based Training	5	7	5	20	10	10
15	Competitions	9	12	13	13	13	10
Correlational value		0.979852		0.54100321		0.332474	

Source: computed from field study

Table 1.3. Sources of awareness creation about open educational resources

SL.No.	SOURCES OF AWARENESS CREATION	% TEACHERS	RANK
1	Self-study and Internet surfing	65.00	I
2	Pre-service and in-service teacher training	13.50	V
3	Through institutional management/head	5.30	V11
4	Through co-workmates/ other teachers	24.24	IV
5	Through students	29.55	111
6	Special programs organised for awareness creation	6.82	V1
7	Through magazines, journals, or other publications etc.	43.56	11
8	Awareness got from information literacy courses	03.34	1X
9	Through TV, newspapers, and other dailies etc.	04.55	V111
10	Attending special workshop/seminars/classes	03.03	X
11	Others	02.75	X1

Source: computed from field study

The study find out that teachers have used some of the Open Educational Resources and the resources used by them are respectively reference software, specific subject software, exam, quiz and assessment resources, classroom aid resources, children's home learning resources, computer games, edutainment resources, digital library resources, web-based training resources, competitions training software, corporate training resources, institutional repositories and specific class software's.

Sources of awareness creation about Open Educational Resources from the highest percentage of responses to the lowest were respectively internet surfing, magazines, journals, or other

publications, students, special programs organized for awareness creation, pre-service and in-service teacher training, co-work mates/other teachers, institute management/principal, through TV, newspapers, magazines, etc., special workshop/seminars/classes and others. 66.5% of teachers became aware of Open Educational Resources through internet surfing. In the case of 2.75% of teachers, the awareness was created by parents/relatives, or friends. 7 Difficulties faced by teachers for introducing Open Educational Resources in training colleges respectively in order of percentages from the highest to the lowest were lack of pre-service/in-service training to use Open Educational Resources (97.14%), non-compulsion to use Open Educational Resources either from authority

or from student's community (71.43%), for using OER lack of specially trained teachers to train the teachers(25.71), constraints within the curriculum(22.86), lack of infrastructure facilities(20.00), lack of a proper mechanism to motivate to use OER (11.43), lack of knowledge about available OER(8.57), helplessness to find out a most appropriate strategy for adopting OER(5.71), and personal constraints(2.86). The analysis concludes that many of the problems and difficulties identified by National Curriculum Framework 2005 for introducing Educational Technology in Indian schools exist even in training colleges and the students of these training colleges being the next generation teachers, implementation of Educational Technology and OER in training colleges deserves much more concern and must bring in to practice in all teachers training colleges.

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