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## A STUDY ON AWARENESS AND USAGE OF ICT AND OPEN EDUCATIONAL RESOURCES (OERS) AMONG COLLEGE STUDENTS IN RURAL PARTS OF INDIA

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#### ABSTRACT

This study aims to investigate college students' awareness, availability, and usage of ICT devices and open educational resources (OERs) for academic purposes. The researchers collected data from a stratified random sample of 600 students from rural areas in the Pudukottai district of Tamil Nadu, India, using a questionnaire. The survey found that most students were indirectly using OER in various forms but were not aware of it. The data was analysed using descriptive statistics, and it was found that while students had access to electronic devices and the internet, a lack of awareness about open educational resources was a significant issue. They reported being aware of OERs such as digital learning objects, open-access journals, streaming videos, and learning materials and frequently using them to get relevant learning material, stay up to date on their subject, know the trends in technical fields, watch teaching and learning sessions on online videos, and assist their personal learning. However, they faced challenges such as high internet costs, a lack of OERs in their subjects. The report suggests that, while they were aware of some OERs, they were not utilising them to their full potential. The study also found that guidance from staff, social media, and help from friends were the main ways students learned about OERs, and that teachers can greatly help by spreading more information about open educational resources to their students.

**Keywords**: Information and Communication Technology, Open Educational Resources, Open Access, Open Education, 5R, Sustainability of OER.

## 1. INTRODUCTION

Information and communication technology (ICT) is a vital element in today's educational environment. As society has evolved into an information-based society, ICT has become essential for the dissemination of knowledge and the advancement of education. Libraries serve as the primary source of knowledge and provide access to the necessary ICT infrastructure for retrieving information [1]. Additionally, open educational resources (OERs) are playing an increasingly important role in contemporary education provision [16]. OERs are teaching, learning, and research materials that are openly licensed to allow for their use in education. The goal of OERs is to promote equal access to education for all individuals, regardless of gender or social status. OERs support the creation, reuse, and sharing of resources for students and teachers [19]. This has encouraged researchers, teachers, and students to create their work under a Creative Commons license, allowing for free access to the content and promoting further research and

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development. OERs can help students with financial difficulties gain access to education, and they can also help teachers by providing more resources to use in their classrooms. Authors are intrigued to study the awareness and use of ICT and OER among rural students because of their limited means of facilities available. The National Education Policy 2020 emphasised the importance lifelong long learning through schools in villages with the support of ICT equipped classes and libraries. In this regard the study will shed light on the challenges of using OER among the college students.

#### 1.1 Definition of Information communication Technology and Open Educational Resources

Information and Communications Technology (ICT) refers to the hardware, software, applications, and networking elements that enable communication between individuals and groups [14]. This includes all the infrastructure and components that make up modern computers. While there isn't a universally agreed-upon definition of ICT, it is commonly understood to encompass all technology that facilitates communication and information exchange.

[22] According to UNESCO 2002, "open educational resources" (OER) are defined as learning, teaching, and research materials that are in the public domain or protected by copyright and published under an open license, such as a Creative Commons license. These resources allow for free access, reuse, repurposing, adaptation, and redistribution by others. OERs are available in any format or medium that is intended to promote access to education and support the creation and sharing of educational materials.

## **1.2 5R Open Educational Resources**

According to David Wiley [23], Users of Open Educational Resources (OERs) have five key rights:

- 1. Retain: the ability to keep and hold onto the OERs in various forms and ways.
- 2. Reuse: the ability to use the OERs in various forms and ways multiple times.
- 3. Revise: the ability to make changes or corrections to the OERs as needed for the intended use.
- 4. Remix: the ability to combine different types of OERs as desired for the intended use.

5. Redistribution: the ability to share and distribute the OERs in different ways.

These rights allow users to have flexibility and autonomy over how they use the OERs in their learning, teaching, and research activities [6].

## 2. SUSTAINABILITY OF OER

Open Educational Resources (OERs) promote quality education for all, provide lifelong learning opportunities, and enables all individuals, particularly women, to meet their educational needs and achieve gender equality [20]. OERs can provide free access to information on making cities and human settlements safer, more resilient, and more sustainable. It also supports sustainable consumption and production practices in education.

There is a growing interest in communitybased approaches to producing content and promoting the sharing and use of resources. To ensure the success and longevity of OER initiatives, it is important to first gain and maintains a critical mass of active and engaged users, improve usability, and enhance the quality of the resources created. A strong community can facilitate rapid diffusion and influence user behaviour, increasing the likelihood that users will return to the repository. Therefore, OER initiatives should not only focus on the "product" but also understand the needs of their user community and improve the value of OERs for various user groups [24].

## 3. NEED OF THE STUDY

The purpose of this study is to investigate the potential contributions of Open Educational Resources (OERs) to higher education and to assess students' awareness and knowledge of OERs in the Pudukkottai district of Tamil Nadu, India, OERs provide access to resources from various educational institutions and can offer information on educational development in India [10]. Many students in the Pudukkottai district live in rural areas and face various obstacles to learning, such as low family income, lack of access to electricity, lack of personal computers, poor network connections, etc. This study aims to understand the daily challenges faced by college students in gaining free access to ICT tools and resources and the opportunities that exist in utilising OERs in

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terms of lifelong learning, and it also aim to produce some suggestions for overcoming the barricades.

## 4. LITERATURE REVIEW

There have been numerous research studies on Open Educational Resources (OERs) but there is a lack of research that specifically measures awareness and use of ICT devices and OERs among student users. According to Johnson et al. [7], 88% of participants who own at least one ICT device have access to the internet in some form, whether via mobile data, Wi-Fi, or broadband, on campus or at home. They found an increase in device ownership and internet access in South Pacific countries, and the majority of students had a positive attitude towards online learning.

According to Dhotre and Banubakode [4] institutions educational are incorporating innovative ICT infrastructure into their curriculum delivery, online curricula, and management systems for both students and teachers, resulting in a more prominent role for ICT in the classroom. However, the study by Saarinen [18] found that students with better ICT skills showed a stronger correlation between frequent ICT use and poorer learning results suggesting that advanced ICT students may use digital devices mechanically. It is suggested that parental control over the use of digital gadgets among students with ICT skills be implemented, as well as equal opportunity for all students, regardless of socioeconomic background.

Rahayu [15] found that OER was the most prevalent source of resources among students, but many were unable to benefit from them due to difficulties in writing answers in their native language using OER. Padhi [12] discovered that students intended to use OER for performance enhancement and ease of use, but encountered challenges in conducive conditions and positive social influence on OER use.

According to Todorinova and Wilkinson [21] professors may not be familiar with OER, show little enthusiasm for their production, and may not understand the difference between OER and other free online resources. Barriers to OER adoption include a lack of copyright knowledge, issues related to the quality of works, and a fear of exposure [17]. Based on the findings of Kumar et al. [8] recommendations for raising awareness about OER among academic communities include: increasing awareness among academicians, libraries and information professionals stepping forward to raise awareness in their respective fields; and conducting training, orientation, workshops, and awareness programs. Midha and Kumar's [9] study found that the majority of users are aware of OERs and have a favourable attitude towards them, indicating that academic communities are interested in using OERs and aware of their benefits.

# 5. THE MAIN OBJECTIVES OF THIS STUDY ARE

- 1. To assess the use and availability of ICT devices for educational purposes.
- 2. To understand the reasons for using the internet for accessing various educational resources.
- 3. To determine the level of awareness and understanding of Open Educational Resources (OERs) among college students.
- 4. To identify the specific purposes for which OERs are used by college students.
- 5. To identify any challenges faced by students in using ICT and OERs.
- 6. To determine the methods through which students gather knowledge about using OERs.

## 6. METHODOLOGY

This study aimed to investigate the usage and of Information Communication awareness Technology and Open Educational Resources (OER) among rural college students in Tamil Nadu, India. The sample was drawn from 12 colleges located in Pudukkottai District, which has a high proportion of students from rural areas. The colleges included were Annai Kathija Arts and Science Girls College, Arputha College of Arts and Science, Auxilium College of Arts and Science for Women, Ganesar College of Arts and Science, Government College of Arts and Science, Karambakkudi, Government Arts and Science College, Aranthangi, H.H. The Rajah's College, Jesu Arts and Science College, J.J. College of Arts and Science, Mahatma Arts and Science College, Naina Mohamed College of Arts and Science, and

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Sudharsan College of Arts and Science. Stratified random sampling is a method of sampling where the population is divided into subgroups or strata, and a random sample is taken from each stratum. This ensures that the sample is representative of the population as a whole and reduces the chance of bias in the sampling process. In this study, the population of rural college students in Tamil Nadu, India was divided into subgroups based on the colleges they attend. The researcher calculated the sample size using the Raosoft web tool, which recommended a sample size of 378 with a 5% marginal error and 95% confidence level, based on a population size of 21820 and a response distribution of 50%. After obtaining due permission, five departments were randomly selected for each college, ten students were chosen for each department, and the questionnaires were given. A sample of 600 undergraduate students was taken from the total population of students for this study. A short introduction to OER was conducted before distributing the questionnaire among the students. What is OER? and its use, and give some examples of OER platforms, since most of the students are indirectly using at least one resource of OER in their various forms but are not aware that they are using OER. Among the 600 students, 63 responded to the questionnaire in a way that was not completely covert, so they were omitted, leaving 537 responses for analysis in this study. The quantitative data collected was analyzed using descriptive statistics, including averages, standard deviations, and frequency counts, using SPSS version 26.

5 %
95 %
21820
50 %

Figure 1: Sampling Calculate by Raosoft web tool

Table 1: Respondents in college wise								
Sl.N o	College Name	Over all studen ts	Responde nts	%	Cumulati ve Percenta ge			
1	Annai Kathija Arts and Science Girls College	950	49	9.1 %	9.1%			
2	Arputha College of Arts and Science	850	39	7.3 %	16.4%			
3	Auxilium College of Arts and Science for Women	1500	44	8.2 %	24.6%			
4	Ganesar College of Arts and Science	1320	44	8.2 %	32.8%			
5	Governmen t College of Arts and Science, Karambakk udi	1350	43	8.0 %	40.8%			
6	Governmen t Arts and Science College, Aranthangi	1580	48	8.9 %	49.7%			
7	H.H. The Rajah's College	4400	48	8.9 %	58.6%			
8	Jesu Arts and Science College	1500	48	8.9 %	67.5%			
9	J.J. College of Arts and Science	4500	47	8.8 %	76.3%			
10	Mahatma Arts and Science College	1520	39	7.3 %	83.6%			
11	Naina Mohamed College of Arts and Science	700	47	8.8 %	92.4%			
12	Sudharsan College of Arts and Science	1650	41	7.6 %	100%			
	Total	21820	537	100 %				

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Table 1 shows the distribution of respondents across different colleges. It includes information on the overall number of students at each college, the number of respondents from that college, the percentage of respondents from that college out of the total, and the cumulative percentage. The table shows that 49 respondents, or 9.1% of the total, came from Annai Kathija Arts and Science Girls College, which has 950 overall students. 39 respondents, or 7.3% of the total, came from Arputha College of Arts and Science, which has 850 overall students. This pattern continues for the remaining colleges listed, with the last college, Sudharsan College of Arts and Science, having 41 respondents, or 7.6% of the total, out of a total of 1650 overall students. The total number of respondents across all colleges is 537, which is 100% of the total.

Table 2: Cross tabulation of respondents gender,Age\_Group, and year of studying

Gender * Age Group * Year of Studying								
Cross tabulation								
		A	ge G	roup		Total	%	
	r of		19-	22-	25			
Purs	uing	>18	21	24	<			
	М	4	13	3	-	20	3.7	
1 <sup>st</sup> Y	F	26	33	13	-	72	13.4	
	Total	30	46	16	-	92	17.1	
	М	-	14	15	3	32	6	
2 <sup>nd</sup> Y	F	2	66	28	-	96	17.9	
	Total	2	80	43	3	128	23.8	
	М	-	53	4	-	57	10.6	
3 <sup>rd</sup> Y	F	-	256	4	-	260	48.4	
	Total	-	309	8	-	317	59	
	М	4	80	22	3	109	20.3	
Total	F	28	355	45	-	428	79.7	
	Total	32	435	67	3	537	100	

Table 2 provides a breakdown of the respondents' gender, age group, and year of study. A total of 537 individuals participated in the survey, with 109 identifying as male and 428 as female. This high representation of females is likely due to the fact that four of the colleges surveyed were women's institutions, while the remaining institutions were co-educational. The age group distribution was as follows: 32 respondents were

under the age of 18, 435 (81%) were in the 19–21 age range, 67 were between 22 and 24, and only three were 25 or older. Additionally, the respondents' year of study was recorded. The survey had 92 first-year students, 128 second-year students, and 317 third-year students, with the highest number of respondents being from the third year.

Table_3.	The usage	of the	internet	on	cammus
Tuble-J.	The usuge	0 ine	merner	on	cumpus

Are you using internet in your campus	Percentage
Yes	60 %
No	40 %
Total	100 %

According to the data presented in Table 3, 60% of survey respondents regularly use the internet on campus. The remaining 40% do not use the internet on campus regularly. In today's digital age, access to the internet is crucial for gathering information. Therefore, it is important for institutions to ensure that everyone has access to the internet. As Pimdee and Leekitchwatana [13] argue, teachers should incorporate internet-based learning experiences to foster interactions among students, educators, and peer groups that promote mutual learning and research needs.

Table 4: Daily internet usage patterns of the respondents and their mode of access to the internet

A cross-tab of daily in usage and n access to interne	ternet node of the	The per of acc Wi-Fi	Total %		
	Below 2 hours	8 %	0.2%	42.6%	50.8%
The percentage of daily internet usage	3-4 hours	9.7%	0.4%	25.5%	35.6%
	5-6 hours	2.4%	-	8%	10.4%
	More than 7 hours	0.4%	-	2.8%	3.2%
Total	%	20.5%	0.6%	79%	100%

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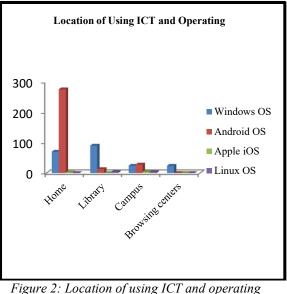
Table 4 presents the daily internet usage patterns and mode of access among the respondents in the study. The majority of respondents, 50.8%, indicated that they use the internet for less than 2 hours per day. 35.5% indicated that they use it for 3-4 hours per day, 10.4% for 5-6 hours per day, and 3.2% indicated that they use it for more than 7 hours per day. In terms of internet connection, 79% of the respondents use mobile data, 20.5% said they use Wi-Fi, and only 0.6% said they use broadband. The large number of students using mobile data suggests the use of mobile learning (M-learning), which is education through social media using personal mobile devices such as tablets and smart phones to access learning materials through mobile apps, social interactions, and online educational hubs. M-learning is flexible and allows students to access education anywhere and anytime [3]. Mlearning apps have gained popularity and have become a typical occurrence in modern educational systems, particularly with the deployment of Mlearning initiatives [2].

#### Table 5: Location of using ICT (Information and Communication Technology) and the most commonly used operating system.

A cross-ta of location ICT and commor operating	n of using the most ily used	The per commo Windo	Tot al %			
		ws OS	id OS	iOS	os	
	Home	13	51.2	0.4	0	64. 6
The percenta	Library	16.8	2.4	0	0.7	19. 9
ge of location	Campu s	4.5	5.2	0.7	0.6	11
of using ICT.	Browsi ng centres	4.5	0	0	0	4.5
Tota	1 %	38.7	58.8	1.1	1.3	100

Table 5 and Figure 2 highlights the usage of ICT devices and the location of usage among the respondents in the study. 64.6% of the respondents indicated that they primarily use ICT devices at home; 19.9% reported using them at the library; 11% reported using them on campus; and 4.5%

reported using them at browsing centres. In terms of operating system, 58.8% of respondents said they use Android, 38.7% said they use Windows, 1.1% said they use Apple iOS, and 1.3% said they use Linux OS. The highest usage of ICT devices is at home, and the most commonly used operating system is Android. The second-most-used location is the library, which suggests that while colleges provide access to ICT resources, students may not be utilising them to their fullest potential.



system

Table 6: Internet i	sing fo	r the	Stud	y purp	ose	
[1- Do Not Use, 2	2- Unce	ertain	i, 3- 1	Less I	Frequ	ently,
4- Frequently, 5-	Aost Fr	eque	ntly]			

Particu lar	1 %	2 %	3 %	4 %	5 %	M ea n	Me dia n	M od e	Std. Dev iatio n
data Transf er	1 1. 2	1 3. 2	1 3. 2	2 6. 8	3 5. 6	3. 62	4.0 0	5	1.37 3
Voice/ video comm unicati on	3. 2	4. 8	1 2. 8	2 8. 7	5 0. 5	4. 18	5.0 0	5	1.03 9
To researc h purpos e	1 1	9. 9	2 2. 9	2 5. 9	3 0. 4	3. 55	4.0 0	5	1.30 9
Access ing	1 7.	1 5.	2 1.	2 6.	1 9	3. 13	3.0 0	4	1.37 5

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als									
partici									
pate in	1	1	3	2	1	3.	3.0		1.23
discuss	3.	4.	1.	2 5.	4.	14	0	3	6
ion	4	3	7	9	7	14			0
forum									
Access									
and									
share									
the	1	1	1	1	3	•	1.0		1 4 4
compe	3.	1.	1 5.	9.	3 9.	3.	4.0	5	1.44 6
titive	6	9	1	7	7	60	0		6
exam									
materi									
als									

Table 6 presents the reasons why students are using the internet for study purposes, as measured by a Likert scale (1: Do not use, 2: Uncertain, 3: Less Frequently, 4: Frequently, and 5: Most Frequently). The first reason listed is "data transfer" and its mode value is 5, indicating that this activity is "Most Frequently" used by the respondents. The second reason is "voice or video communication" and its mode value is also 5. The third reason is "for research purposes" and its mode value is also 5. The fourth reason is "for accessing study materials" and its mode value is 4, indicating that this activity is "Frequently" used by the respondents. The fifth reason is "participate in the discussion forum" and its mode value is 3, indicating that this activity is "Less Frequently" used by the respondents. The sixth reason is "access and share competitive exam materials" and its mode value is 5. These results suggest that while students are using the internet for certain study-related activities, there may be areas where internet usage could be improved to enhance their learning experience, as 17.7% of students are not using the internet to access study materials, and some students are not using the internet for study purposes at all. Therefore, it is important to provide support and training to these students to help them utilise the internet for study purposes.

aware,	4- a	ware	e, 5-	very	awai	re]			-
Partic ular	1	2	3	4	5	M ea n	Me dia n	M od e	Std. Dev iatio n
Open Cours eware	2 0. 7	2 5. 1	3 7. 2	1 3	3. 9	2. 54	3.0 0	3	1.07 7
Instit ution al Repo sitori es	1 5. 8	2 6. 3	3 5. 4	1 7. 5	5	2. 70	3.0 0	3	1.08 7
Onlin e Tutor ials	1 0. 2	1 8. 2	3 2	2 7. 6	1 1. 9	3. 13	3.0 0	3	1.15 4
Digit al Learn ing Objec ts	6. 5	1 7. 5	2 1. 6	4 1. 2	1 3. 2	3. 37	4.0 0	4	1.11 4
Open Acces s Journ als	1 4. 2	1 9. 4	2 5. 5	3 0. 5	1 0. 4	3. 04	3.0 0	4	1.21 8
Strea ming Video s	7. 3	1 1. 7	2 9. 4	3 0. 7	2 0. 9	3. 46	4.0 0	4	1.15 7
Learn ing Mater ials	1 1	1 6. 8	2 3. 6	3 0. 4	1 8. 2	3. 28	3.0 0	4	1.25 2
NDL	1 3. 4	1 7. 1	2 8. 7	2 5. 5	1 5. 3	3. 12	3.0 0	3	1.25 0

 Table 7: Aware of the following Open Educational

 Resources

 [1- Not aware, 2- Little aware, 3- Moderately

Table 7 presents the level of awareness of different types of Open Educational Resources (OER) among the respondents in the study. The table lists different types of OER and the percentage of respondents who reported being not aware as (1), little aware as (2), moderately aware as (3), aware as (4), very aware as (5) for each type of OER. The mean, median, mode, and standard deviation are also provided for each type of OER.

The results show that the majority of respondents reported being moderately aware and aware. (37.2%) of Open Courseware, (35.4%) Institutional Repositories, (32%) of online tutorials,

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(28.7%) of NDL website are being moderately to aware. And respondents response for (41.2%) of Digital Learning Objects, (30.5%) of Open Access Journals, (30.7%) of Streaming Videos, (30.4%) of Learning Materials, are being aware but the same time (20.7%) of respondents not aware about Open Courseware, 15.8% of respondents are not aware about Institutional Repositories 14.2 % of respondents are not aware about Open Access Journals These results suggest that there is a general level of awareness among the students about OER, but there is still room for improvement in terms of increasing awareness and usage of certain types of OER, such as Open Courseware, Institutional Repositories, Open Access Journals.

The results of the table-7 show that students have a general level of awareness about open educational resources (OER), but there is still room for improvement. The majority of respondents reported moderate awareness for Open Courseware, Institutional Repositories, and online tutorials, while a larger proportion reported being aware of Digital Learning Objects, Open Access Journals, Streaming Videos, and Learning Materials. However, there are still a significant percentage of respondents who are not aware of Open Courseware, Institutional Repositories, and Open Access Journals.

The data suggests that there is a need for greater promotion and awareness-raising about the availability and potential benefits of OER. The mean, median, and mode values for most OER types are relatively low, and the standard deviation values show a significant variation in the level of awareness among the respondents. This highlights the need for providing training and support to students to help them effectively access and utilize different types of OER.

Frequ		, 5-1		Freq			.55170	1	,,
Parti cular	1	2	3	4	5	M ea n	Me dia n	M od e	Std. Devi atio n
To get relev ant learn ing mate rial	1 0. 2	1 7. 9	2 7. 6	3 0. 7	1 3. 6	3. 20	3.0 0	4	1.18 5
To make use of OER in my assig nmen t	8. 8	1 9. 4	3 2. 2	2 8. 3	1 1. 4	3. 14	3.0 0	3	1.12 4
To beco me up to date in my subje ct	5. 6	1 5. 8	2 6. 8	3 8. 9	1 2. 8	3. 37	4.0 0	4	1.07 5
To know the trend s in techn ical fields	7. 3	1 9. 9	2 8. 5	3 1. 8	1 2. 5	3. 22	3.0 0	4	1.12 2
To assist perso nal learn ing	7. 1	1 4. 2	2 4. 4	3 6. 9	1 7. 5	3. 47	4.0 0	4	1.42 3
To watch teachi ng and learni ng sessio n on online video s	6. 9	1	2 3. 8	3 0. 7	2 7. 6	3. 61	4.0 0	4	1.19 4

[1- Do not use, 2- Uncertain, 3- Less Frequently, 4-Frequently, 5- Most Frequently]

Table -8: Purpose of using Open Educational Resources

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Table 8 lists the purposes for which students use Open Educational Resources (OER) using the Likert scale, we measure the following values: 1. Do not use. 2: Uncertain, 3: Less Frequently, 4: Frequently, and 5: Most Frequently. The first one is "to get relevant learning material" and its mode value is 4. The value of 4 indicates that the statement is "Frequently." The second one is "to make use of OER in my assignments," and its mode value is 3. The third one is "to become up to date in my subject," and its mode value is 4. The fourth one is "to know the trends in technical fields," and its mode value is 4. The fifth one is "to assist personal learning," and its mode value is 4. The sixth one is "to watch teaching and learning session on online videos" and its mode value is 4. These results suggest that students are frequently making use of OER for various purposes such as getting relevant learning material, making use of OER in assignments, staying up-to-date in their subjects, and assisting their personal learning. It also indicates that students are using OER for learning the trends in technical fields and watching teaching and learning sessions on online videos. However, there is still room for improvement in terms of increasing awareness and usage of OER and providing training and support to students to help them effectively access and utilize OER.

## Table – 9: Challenges faced by students in using ICT and OER

[1- strongly disagree, 2- disagree, 3- neutral, 4agree, 5- strongly agree]

ugree,	5 50	rong	iy ug	sicej					
Parti cular	1	2	3	4	5	M ea n	Me dia n	M od e	Std. Devi atio n
Fina ncial Probl ems	7. 6	1 8. 8	2 9. 4	2 9. 8	1 4. 3	3. 24	3.0 0	4	1.14 8
high cost of inter net acces s	8. 9	1 7. 9	2 0. 5	3 3. 9	1 8. 8	3. 36	4.0 0	4	1.22 6
lack of traini ng	1 4. 5	2 4. 8	2 7. 9	2 1. 8	1 1	2. 90	3.0 0	3	1.21 6

							1001		
lack of techn ical know ledge	6. 9	1 5. 8	3 0. 5	3 1. 7	1 5. 1	3. 32	3.0 0	4	1.11 9
lack of facili ties	8. 2	2 1. 6	3 5. 4	2 2. 5	1 2. 3	3. 09	3.0 0	3	1.12 0
lack of perso nal comp uter hinde rs my free acces s	8. 4	2 1. 8	2 7. 4	2 9. 1	1 3. 4	3. 18	3.0 0	4	1.16 0
I wast e too much time while brow sing due to poor netw ork	1 1. 9	1 7. 7	2 4. 4	2 8. 3	1 7. 7	3. 22	3.0 0	4	1.26
I am ignor ant of OER facili ties	5. 6	1 8. 2	2 9. 2	3 1. 5	1 5. 5	3. 33	3.0 0	4	1.12 0
I am not famil iar with OER webs ites	9. 7	1 5. 1	4 0. 2	2 3. 3	1 1. 7	3. 12	3.0 0	3	1.10 8
I do not have the techn ical skills for the use of OER	5	1 8. 4	3 7. 6	2 9. 4	9. 5	3. 20	3.0 0	3	1.01

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These results suggest that there are several barriers to student use of ICT and OER, including financial and technical constraints. It is important for institutions to address these barriers and provide support to students in order to increase the access and usage of these resources.

Table 10: Students gather knowledge about using
OER

Particulars	Respondents Percentage	Ranking
Guidance from staff	77.5	1
Through Social Media	70.6	2
Helps from friends	70.2	3
Online user guide	59.2	4
Guidance from Librarian	54.6	5
Orientation programme	36.7	6

Table-10 presents the ways in which students gather knowledge about using open educational resources. Staff guidance is important in using OER because the benefits of OER are most likely used in academic professions such as improving learning quality, digitized, customized, and flexible learning, and information dissemination. Gathering knowledge is highly possible through social media and friends; additionally, it works as a user-friendly process; thus, they are inextricably linked. OER can be retrieved both on campus and remotely. It also ensures fair access to all students without any discrimination, is free, and reduces the financial burden on students. OER can be easily accessed through social media from smart phones; hence, it secured the second position, and the present cohort focuses much more on smart learning technology than traditional learning to progress their competency skills. OER plays a significant role in library professionals' work, which helps them provide their selective dissemination services in a better way. Focusing on the orientation programme and providing proper training about the employment of OER will be more helpful in gathering and publicising the knowledge; this can be possible through conducting more webinars, workshops, and practical training on the usage of OER among students.

have time	0	6	8	1	4	27	0	5	9
there is inade quate avail abilit y of hard ware and softw are	4. 7	1 8. 2	2 9. 2	3 1. 1	1 6. 8	3. 38	3.0 0	4	1.10 8
there is lack of OER s in my subje ct	6. 5	1 5. 5	2 6. 6	3 3. 1	1 8. 2	3. 41	4.0 0	4	1.14 4
there is a lack of prop er traini ng	6. 9	1 0. 8	3 1. 7	3 0. 7	1 9. 9	3. 46	4.0 0	3	1.13 1
	Ta	able	9 1	ists	the	chall	enges	face	d by

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students in using ICT and OER. The table uses the Likert scale to measure the level of agreement with the statements provided, with 1 indicating "strongly disagree" and 5 indicating "strongly agree." The mean, median, mode, and standard deviation are also provided for each statement.

The results show that the majority of respondents reported that they face challenges in accessing OER due to financial problems (29.4%), high cost of internet access (20.5%), lack of training (27.9%), and lack of technical knowledge (30.5%). Additionally, many students reported that the lack of personal computer hinders their free access (27.4%), and that they waste too much time while browsing due to poor network (24.4%). The majority of the students also reported that they are ignorant of OER facilities (29.2%), not familiar with OER websites (40.2%), and don't have the technical skills for the use of OER (37.6%).

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## 7. CONCLUSION

Education is a fundamental right for all individuals, In response, many nations are taking steps to ensure that everyone has access to education. One such initiative is the use of Open Educational Resources (OERs). This study aimed to understand the awareness and usage of OERs among rural students. Samples of 537 students were surveyed and it was found that over three-quarters of students had access to electronic devices such as mobile phones and laptops. However, despite having access to electronic devices and the internet, a lack of awareness about OERs was found to be a significant issue. Students reported being aware of OERs such as digital learning objects, open-access journals, streaming videos, and learning materials, and frequently used them to get relevant learning material, stay up-to-date on their subject, know the trends in technical fields, watch teaching and learning sessions on online videos, and assist their personal learning. However, they used OERs rarely or occasionally for other factors. This indicates that while students were aware of some OERs, they were not utilizing them to their full potential. The major obstacle they faced was high cost of internet, poor network connections, lack of personal computers, and lack of awareness about OERs in their relevant subjects.

The study also found that guidance from staff, social media, and help from friends were the main ways students learned about OERs, and that teachers could greatly help by spreading more information about open educational resources to their students. Furthermore, it was found that librarians can also play a vital role in familiarizing students and teachers with OERs. Therefore, it is suggested that students should have more time in the library as part of their curriculum and that librarians should conduct orientation, workshops, and special programs to familiarize students and teachers with OERs.

Future research in this area could benefit from developing clear, standardized instructions and refining the concepts of OER dependence. This could lead to the development of instruments that yield more useful and prevalent data. The same study on different population such as tribal community can provide a different perspective on the use of OER and ICT.

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## REFERENCES

- [1] Alagu, A., & Thanuskodi, S. (2018). Awareness and Use of ICT among Undergraduate Students of Rural Areas in Dindigul District: A Study. *Library Philosophy and Practice*, 2018. <u>https://digitalcommons.unl.edu/cgi/viewcontent.</u> <u>cgi?article=5452&context=libphilprac</u>
- [2] Al-Rahmi, A. M., Al-Rahmi, W. M., Alturki, U., Aldraiweesh, A., Almutairy, S., & Al-Adwan, A. S. (2022). Acceptance of mobile technologies and M-learning by university students: An empirical investigation in higher education. Education and Information Technologies, 1-22. <u>https://link.springer.com/article/10.1007/s10639</u> <u>-022-10934-8</u>
- [3] Alturki, U., & Aldraiweesh, A. (2022). Students' perceptions of the actual use of mobile learning during COVID-19 pandemic in higher education. Sustainability, 14(3), 1125. <u>https://doi.org/10.3390/su14031125</u>
- [4] Dhotre, S., & Banubakode, A. (2021). Use and Challenges of ICT for Classroom Teaching. In Digital Literacy and Socio-Cultural Acceptance of ICT in Developing Countries (pp. 291-301). Springer, Cham. <u>https://link.springer.com/chapter/10.1007/978-3-030-61089-0 18</u>
- [5] Duncan, G. J., & Magnuson, K. (2012). Socioeconomic status and cognitive functioning: moving from correlation to causation. *Wiley Interdisciplinary Reviews: Cognitive Science*, 3(3), 377-386. https://doi.org/10.1002/wcs.1176
- [6] Heck, T., Kullmann, S., Hiebl, J., Schröder, N., Otto, D., & Sander, P. (2020). Designing Open Informational Ecosystems on the Concept of Open Educational Resources. *Open Education Studies*, 2(1), 252-264. https://doi.org/10.1515/edu-2020-0130
- [7] Johnson, J. B., Reddy, P., Chand, R., & Naiker, M.
   (2021). Attitudes and awareness of regional Pacific Island students towards elearning. *International Journal of Educational*

 $\frac{15^{th}}{^{C}} \frac{\text{May 2023. Vol.101. No 9}}{^{C}}$ 

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*Technology in Higher Education*, *18*(1), 1-20. <u>https://educationaltechnologyjournal.springerop</u> en.com/articles/10.1186/s41239-021-00248-z

- [8] Kumar, A., Baishya, D., & Deka, M. (2021). Open Educational Resources (OER) issues and problems experienced by social scientists of select higher educational institutions in India. Library Philosophy and Practice (e-Journal). <u>https://digitalcommons.unl.edu/libphilprac/5625</u>
- [9] Midha, M., & Kumar, J. (2022). Users' Awareness and Usage of Open Educational Resources in Central Universities of North India. DESIDOC Journal of Library & Information Technology, 42(1). https://publications.drdo.gov.in/ojs/index.php/djl it/article/view/17304
- [10] Nagaiah, M., & Thanuskodi, S. (2021). Utilization of open educational resources (OERs) among college students affiliated to Alagappa university in India. *Linguistics and Culture Review*, 5(S3), 1384-1399. <u>https://doi.org/10.21744/lingcure.v5nS3.1822</u>
- [11] Orr, D., Rimini, M., & Van Damme, D. (2015). Open Educational Resources: A catalyst for innovation, educational research and innovation. Paris: Organisation for Economic Co-operation and Development (OECD). https://digitalcommons.unl.edu/parasittext/5/
- [12] Padhi, N. (2018). Acceptance and usability of OER in India: An investigation using UTAUT model. Open Praxis, 10(1), 55-65. <u>https://www.learntechlib.org/p/182381/.</u>
- [13] Pimdee, P., & Leekitchwatana, P. (2022). Appropriate internet use behavior (AIUB) of Thai preservice teachers: a hierarchical linear model (HLM) analysis. *International Journal of Instruction*, 15(1), 489-508. https://doi.org/10.29333/iji.2022.15128a
- [14] Pratt, M. K. (2019). What is ICT (Information and Communications Technology)? SearchCIO. Retrieved November 10, 2022, from <u>https://www.techtarget.com/searchcio/definition</u> /ICT-information-and-communicationstechnology-or-technologies
- [15] Rahayu, U., & Sapriati, A. (2018). Open educational resources based online tutorial model for developing critical thinking of higher Distance Education Students. *Turkish Online Journal of Distance Education*, 19(4), 163-175. <u>https://doi.org/10.17718/tojde.471914</u>
- [16] Rets, I., Stickler, U., Coughlan, T., & Astruc, L. (2022). Simplification of open educationa 1 resources in English. *Open World Learning*, 89. <u>https://DOI:10.4324/9781003177098-8</u>

- [17] Rodés, V., Gewerc-Barujel, A., & Llamas-Nistal, M. (2019). University teachers and open educational resources: Case studies from latin America. *International Review of Research in Open and Distributed Learning*, 20(1). <u>https://doi.org/10.19173/irrodl.v20i1.3853</u>
- [18] Saarinen, A. I., Lipsanen, J., Hintsanen, M., Huotilainen, M., & Keltikangas-Jarvinen, L. (2021). The use of digital technologies at school and cognitive learning outcomes: A populationbased study in Finland. *International Journal of Educational* Psychology. https://doi.org/10.17583/ijep.2021.4667
- [19] Schaffert, S., & Geser, G. (2008). Open educational resources and practices. *eLearning Papers*, 7,14-19. <u>https://www.oerknowledgecloud.org/archive/me</u> <u>dia14907.pdf</u>
- [20] Tlili, A., Nascimbeni, F., Burgos, D., Zhang, X., Huang, R., & Chang, T. W. (2020). The evolution of sustainability models for Open Educational Resources: Insights from the literature and experts. *Interactive Learning Environments*, 1-16. <u>http://sli.bnu.edu.cn/uploads/soft/201124/2\_201</u> 4185631.pdf
- [21] Todorinova, L., & Wilkinson, Z. T. (2020). Incentivizing faculty for open educational resources (OER) adoption and open textbook authoring. *The Journal of Academic Librarianship*, 46(6), 102220. doi: 10.1016/j.acalib.2020.102220
- [22] Unesco. (2002). Open educational resources. UNESCO.org. Retrieved November 10, 2022, from <u>https://www.unesco.org/en/communicationinformation/open-solutions/open-educationalresources</u>
- [23] Wiley, D. (2007). Defining the "Open" in Open Content. International Journal of Educational Telecommunications, 13(1), 1-16. <u>http://opencontent.org/definition/</u>
- [24] Yuan, L., MacNeill, S., & Kraan, W. G. (2008). Open Educational Resources-Opportunities and challenges for higher education. <u>https://www.oerknowledgecloud.org/archive/OE</u> <u>R Briefing Paper.pdf</u>