

Exploring the Use of Open Educational Resources by Students and Research Scholars of Central University of Tamil Nadu

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Abstract

This study discusses student engagement with Open Educational Resources (OER) among students of Central University of Tamil Nadu. It examines the awareness and use of OER among students, their level of engagement, the benefits they perceive and the challenges they face while accessing and using these resources. The study uses a descriptive survey research design using a structured questionnaire administered through Google Forms. Responses from 214 students were received in the survey, but 185 respondents who were aware of OER were selected for data analysis. The data were analysed using IBM SPSS, with both descriptive and inferential statistical techniques. The results suggest a high awareness of OER among students, with YouTube lectures and online courses being the most frequently used resources. Students engage moderately and have positive feelings about OER, especially regarding self-directed learning, better understanding of subjects, improving academic performance and reducing educational costs. On the other hand, challenges faced are related to the availability of quality OER, poor internet connectivity, lack of guidance and lack of awareness. Research shows that OER plays a significant role in helping students become successful and engaged in higher education.

Keywords

Open Educational Resources; Student Engagement; OER Awareness; Higher Education; Open Learning

1. Introduction

Open Educational Resources (OER) have evolved into a key component of contemporary higher education as they offer learning materials that are not only free and freely licensed but also support teaching and learning. These resources include lecture notes, videos, digital textbooks, and other educational materials that are free to use and distribute. The primary drivers for the increasing adoption of OER are improving access to education and lowering financial barriers to education for students (Cho & Permzadian, 2024; Barman et al., 2025). Research has indicated that OER is essential in the creation of an inclusive and flexible learning environment where students can access quality educational resources despite their social background (Sadrudin, 2022; Omoike & Oyelude, 2024). Additionally, OER help change traditional education systems by promoting openness, accessibility, and innovation in teaching practices (Fine & Read, 2020; Nagaiah & Thanuskodi, 2021).

Student engagement is one of the factors that can affect the success of the learning process, and OER can contribute to the development of students' engagement in the learning process. Using OER encourages student-centred learning by letting learners interact with content in flexible and meaningful ways (Batsurovska et al., 2025; Romero-Ariza et al., 2025). The use of OER has shown more motivation, better comprehension and academic performance among students. This is due to easier and flexible access to learning materials (Venegas Muggli & Westermann, 2019; Junasova et al., 2025). In addition, students' engagement is greatly impacted by their awareness and familiarity with open educational resources. Students who are more aware of these resources typically use them more successfully in their studies (Obinyan et al., 2023; Shams et al., 2020). Digital learning environments supported by

OER enhance collaboration, interaction, and overall learning experiences among students, according to studies (Christoforidou & Georgiadou, 2022).

However, despite the advantages of OER, some challenges may arise when implementing OER in higher education. For example, students may not be aware of OER, may lack digital skills, and may not get enough institutional support, all of which may affect students' engagement with OER (Omoike & Oyelude, 2024; Obinyan et al., 2023). Moreover, students' willingness to use OER materials for academic purposes may be influenced by concerns about their relevance, quality, and organization (Cho & Permzadian, 2024; Barman et al., 2025). The effectiveness of OER also depends on how well it is integrated into the curriculum and on teachers employing the right techniques and approaches (Batsurovska et al. 2025; Fine & Read, 2020). Therefore, it is important to examine how students engage with OER in specific institutional settings. The current study focuses on examining student engagement with OER at the Central University of Tamil Nadu in order to gain insight into patterns of usage, levels of engagement, and challenges encountered by students.

About Central University of Tamil Nadu

CUTN is a premier public university founded in Thiruvavur, Tamil Nadu by an Act of Parliament in 2009, with a focus on the development of higher education in India. The university occupies 516.76 acres of land and is made up of Neelakudi Academic Campus and Nagakudi Residential Campus which offer a peaceful and conducive environment to the students which number about 2,000. With 12 schools and 27 departments, CUTN offers over 60 programs in a variety of disciplines, including undergraduate, graduate, integrated, and doctoral courses. CUTN is renowned for its emphasis on transdisciplinary learning and research, and in the National Institutional Ranking Framework (NIRF) ranking for 2024, it was ranked at position 99 among top universities in India. CUTN also collaborates with institutions like the Madras School of Economics and the Sardar Vallabhbhai Patel International School of Textiles and Management, while providing students with robust infrastructure and access to digital learning materials like Open Educational Resources (OER).

2. Review of Literature

Cho and Permzadian (2024) conducted a meta-analysis to determine the impact of Open Educational Resources (OER) on student academic performance. The research work involved analysing various previous research works comparing OER-based courses and textbook-based courses. The results showed that the implementation of OER increased course completion rates while producing a small positive effect on student academic performance. The authors concluded that open educational resources (OER) can reduce educational expenditures while maintaining or slightly improving student learning outcomes in higher education.

Barman et al. (2025) assessed the Scope and Future of Open Educational Resources in a comparative study across major platforms. The study contrasted non-governmental platforms such as Khan Academy and Coursera with government-supported platforms such as NPTEL and SWAYAM. The results showed that government platforms focused on issues such as course availability, certificate issuance and offering content in multiple languages, while non-governmental platforms emphasized self-paced learning and interactive learning. According to the research, both government and non-governmental OER platforms play an important role in increasing open access to education.

Fine and Read (2020) conducted a study to investigate factors influencing students' perceptions of Open Educational Resources (OER) in higher education settings using a quantitative survey design. Students who had been part of a course that used OER were surveyed for data collection. The data was analysed using statistical techniques. Findings showed that students mostly had positive views of OER, primarily because it was affordable and accessible. Effective integration of OER is important, as evidenced by the study's findings that students who felt more engaged in their classes and enjoyed the online learning environment tended to view OER more favourably.

Nagaiah and Thanuskodi (2021) studied how college students of Alagappa University, India use Open Educational Resources (OER). The study aimed to understand students' awareness, usage patterns and barriers to accessing OER. The study used a survey method and found that out of 245 questionnaires sent via WhatsApp and Gmail using Google Forms, 121 responses were received. The results showed

that most students frequently use OER for learning, highlighting their importance in facilitating access to learning resources.

Venegas Muggli and Westermann (2019) examined the impact of Open Educational Resources (OER) on first-year university students' learning in mathematics. The researchers compared the use of OER on student learning, specifically the use of Khan Academy and open textbooks. The researchers examined test scores, attendance, and teacher and student perceptions using quantitative and qualitative methods. Findings revealed that students who used Khan Academy performed better on exams. The study found that OER resources used effectively led to increased student engagement, which resulted in better academic progress for college students.

Omoike and Oyelude (2024) investigated how distance learning students at the University of Ibadan in Nigeria perceive and use Open Educational Resources (OER). They conducted a survey and collected data through a questionnaire from undergraduate students. The study found that students were familiar with OER and had positive attitudes towards using OER for learning. Common examples of resources used were open access journals, learning modules and YouTube, while lack of institutional support and technological facilities were perceived by students as major challenges.

Batsurovska et al. (2025) conducted research on the use of Open Educational Resources (OER) in student-centered learning approaches in higher education. The study design used was an experimental study design. They used OER tools such as educational videos, e-textbooks, online explanations, and modular tests for teaching. The results showed that students who used OER outperformed those in the traditional learning group in terms of learning outcomes and engagement, demonstrating the usefulness of OER in improving education.

Christoforidou and Georgiadou (2022) examined how educators and students in higher education understand and use Open Educational Resources (OER) materials. The study showed that educators are aware of OER and frequently use it to share content, while students, especially undergraduate students, are less aware of and understand OER. Therefore, the authors emphasize that universities should develop measures and awareness campaigns to make the use of OER more effective and widespread in the institution.

Romero-Ariza et al. (2025) studied teachers' perceptions about Open Educational Resources (OER) and students' motivation and meaningful learning as outcomes of the use of OER. The research revealed that OER facilitate flexible and collaborative teaching by enabling teachers to adapt and share resources. The authors came to the conclusion that while OER promotes active learning and increases student engagement, its successful implementation necessitates institutional support and adequate teacher training.

Sadrudin (2022) conducted a semi-systematic literature review to investigate the benefits and drawbacks of Open Educational Resources (OER) for learning communities. The study showed that OER helps with open learning, knowledge sharing and lifelong education. However, there are still problems such as limited awareness, absence of supportive policies, copyright concerns, and lack of sufficient capacity to adapt and reuse resources that hinder their effective use. To improve this situation, the author recommends stronger institutional policies, training and institutional support for the use of OER.

Junasova et al. (2025) explored undergraduate students' experiences and perceptions of Open Educational Resources (OER) at Canadian universities. The study aimed to explore students' experiences with different types of OER and how this influenced their confidence levels. Results showed that students were more confident in their ability to use open educational resources (OER), such as websites and podcasts, for learning. The study suggests that greater use of OER can increase student engagement and support learning.

Shams et al. (2020) conducted a study to explore the use of Open Educational Resources (OER) and the benefits of OER for university students in Pakistan. According to the study, a large number of students used OER to enhance their academic understanding and support their learning. In addition, students perceived that OER had a positive impact on collaborative learning and the availability of educational

materials. However, challenges such as poor internet connectivity, lack of technical skills, and limited awareness hindered the effective use of OER.

Obinyan et al. (2023) investigated student awareness and the use of Open Educational Resources (OER) at selected universities in Nigeria. They collected data from undergraduate students via questionnaires using a survey method. The results indicate that students are aware of OER and use them for academic purposes. However, issues such as inadequate internet access, low awareness, and a lack of institutional support hinder students' ability to use OER effectively.

Objectives of the study

- 1) To examine the level of awareness and understanding of OER among students of the Central University of Tamil Nadu.
- 2) To identify the types and frequency of OER used by students for academic purposes.
- 3) To study how students engage with Open Educational Resources (OER).
- 4) To access the perceived benefits of OER in improving learning and academic performance
- 5) To identify the challenges faced by students in accessing and effectively using OER.

3. Methodology

A descriptive survey research design was used to examine student engagement with Open Educational Resources (OER) among students at the Central University of Tamil Nadu. Data was collected using a structured questionnaire via Google Forms. A total of 214 responses were received, and from this total, 185 respondents who were aware of OER were selected for in-depth analysis. The questionnaire collected data on demographic characteristics, OER awareness, types and frequency of OER usage, student engagement, perceived benefits, and challenges of OER use. The collected data was then analysed using IBM SPSS software. Descriptive analysis was performed using frequency, percentage, mean, and standard deviation, and the reliability of the engagement scale was assessed using Cronbach's Alpha. To check the relationship between gender and OER awareness, Chi-square test was used, and One-Sample t-test was used to determine students' attitudes towards the benefits of OER.

4. Results and Discussion

Table 4.1: Distribution of Respondents by Gender and Level of Study

Gender	Undergraduate	Postgraduate	PhD/Research Scholar	Total
Male	35	60	20	115
Female	19	60	20	99
Total	54	120	40	214

Table 4.1 shows that total 214 respondents attended the survey, which involved 115 male respondents, consisting of 35 undergraduates, 60 postgraduates, and 20 PhD scholars. Followed by 99 female respondents, consisting of 19 undergraduates, 60 postgraduates, and 20 PhD scholars. Male and female both shared equal number of PG students and PhD scholars.

Table 4.2: Distribution of respondents by Level of Study and Discipline

Level of Study	Science	Arts & Humanities	Commerce & Management	Total
Undergraduate	48	6	0	54
Postgraduate	73	40	7	120
PhD/Research Scholar	16	20	4	40
Total	137	66	11	214

Table 4.2 shows the distribution of respondents by level of study and discipline. Across all level of study, most of the respondents were from Science. 137 respondents (64.0%) from Science, followed by 66 respondents (30.8 %) from Arts and Humanities. In Undergraduate and Postgraduate, most of the respondents were from Science, while among PhD/Research scholars most of the respondents were from Arts and Humanities. Overall, the study was conducted across diverse academic backgrounds, with a strong domination of respondents from Science.

Table 4.3: Devices Used by Student for Learning

Device	Frequency	Percentage %
Laptop	128	60.3
Mobile Phone	121	56.5

Tablet	6	2.8
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The study shows that laptops are mostly used device for learning among students (60.3%), followed by mobile phones (56.5%). Tablets were used by very less students (2.8%). These suggest that student is using laptops and tables for accessing learning materials and OER, highlighting the need for digital platform and educational resources which can be effectively used through mobile phones and laptops.

Table 4.4 Awareness of Open Educational Resources

Awareness	Frequency	Percentage %
Yes	185	86.4
No	29	13.6
Total	214	100

Table 4.4 indicates that out of 214 respondents most of the respondents in the study were aware of Open Educational Resources. 185 (86.4%) were aware of Open Educational Resources, only a small proportion of students 29 (13.6) were unaware of Open Educational Resources. This indicate that higher awareness of OER among students of Central University of Tamil Nadu, which suggest that students use open educational materials for their academic purpose. But the minor percent of students who are unaware of OER shows that their still need of further awareness and orientation programs on OER.

Table 4.5: Association between Gender and Awareness of Open Educational Resources

Gender	Aware	Not Aware	Total
Male	94 (81.7%)	21 (18.3%)	115 (46.3%)
Female	91 (91.9%)	8 (8.1%)	99 (53.7%)
Total	185 (86.4%)	29 (13.6%)	214 (100%)

The Chi-square test was conducted for understanding the association between Gender and Awareness of Open Educational Resources among students. The test proved that there is statistically significant association between gender and OER awareness ($\chi^2 = 4.706$, $df = 1$, $p = 0.030$). 91.9% of female students and 81.7% of male students were aware of OER. It was reported that female students had higher level of awareness comparing to male students. Since p-value is less than 0.05, it was revealed that gender has a significant role on students' awareness of OER.

Table 4.6: Sources of Awareness about Open Educational Resources

Source of Awareness	Frequency	Percentage%
Internet	96	51.9%
Faculty	48	25.9%
Friends	25	13.5%
Library	13	7.0%
Workshops/Training	3	1.6%
Total	185	100%

Table 4.6 indicates the source through which students became aware of Open Educational Resources. Mostly students learned about OER through Internet (51.9%), making it the major source of awareness. After Internet, Faculty (25.9%) had a great part in promoting OER. Some of the students reported that they become aware of OER through Friends (13.5%) and Library (7.0%). Only 1.6% of students chose Workshops/Training as their source of awareness. These findings reveal that digital platforms and faculty member play a significant role in promoting awareness about OER.

Figure 4.1: Frequency of OER Usage among Students

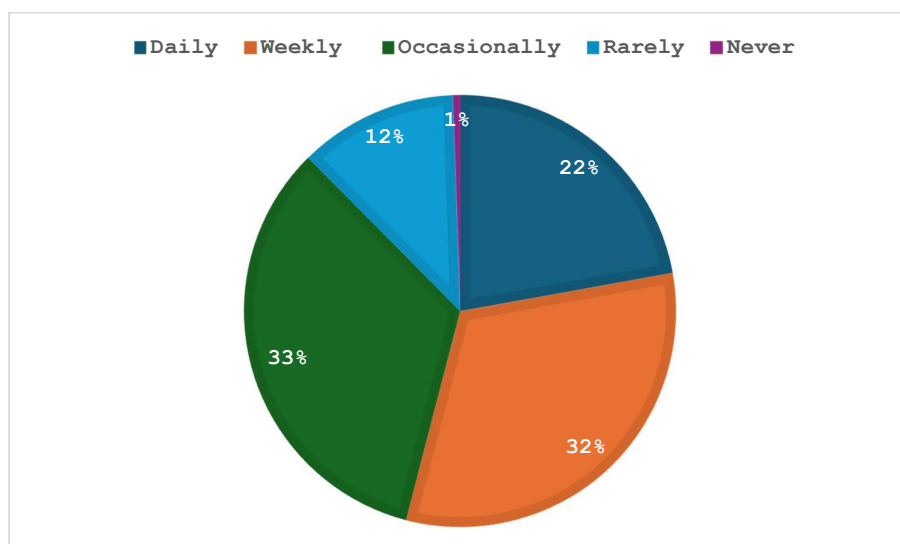


Figure 4.1 indicate that there is a wide use OER among students of Central University of Tamil Nadu. A large proportion of students (33%) use OER occasionally, while a one-third of students (32%) use of OER weekly. Another important number of students (22%) use OER daily, showing that regular integration of OER in academic activities. The percentage of respondents who never used OER was very low (1%). The result demonstrate that more than half of the respondents use OER either weekly or daily, pointing out that students are adopting OER are more for their academic purposes.

Table 4.7: Ranking of OER Types Used by Students

OER Type	Usage (%)	Mean	Rank
YouTube Lectures	80.5%	4.03	1
Online Courses	68.6%	3.43	2
Open Access Journals	45.4%	2.27	3
Open Textbooks	43.2%	2.16	4
Lecture Notes	33%	1.65	5

Table 4.7 demonstrates the ranking of OER types based on their usage by students. The most utilized OER material indicated by students are YouTube Lectures (80.5%), followed by Online Courses (68.6%). This practice by the students denotes that they prefer multimedia and interactive learning resources over traditional text-based materials. Other OER types such as Open Access Journals, Open Textbooks, Lecture notes reported less usage compared to YouTube Lectures and Online Courses.

Table 4.8: Student Engagement with Open Educational Resources

Sl. No.	Statement	Mean	Standard Deviation	Rank
1	I explore multiple OER platforms	3.95	0.80	1
2	I regularly use OER in my studies	3.86	0.86	2
3	I download/save OER for future use	3.85	0.94	3
4	I integrate OER with classroom learning	3.84	0.84	4
5	I actively interact with OER content	3.82	0.83	5
6	I share OER with peers	3.78	0.88	6
7	I participate in online courses	3.74	0.98	7
8	I critically evaluate OER before using	3.63	0.91	8

Table 4.8 shows the level of student engagement with Open Educational Resources (OER). The engagement scale included eight items. Based on the Cronbach's Alpha coefficient (0.824), the measure has a good degree of reliability. This means that the scale is a dependable tool for measuring student engagement with OER and can be used for more statistical analysis.

The mean score of 3.81 (SD = 0.68) on the whole suggests a moderate level of engagement with OER among students. The mean scores for each of the items were as follows: "I explore multiple OER platforms" scored a mean of 3.95 (SD = 0.80), indicating that students engage in exploring learning resources from multiple OER sites. This was followed by "I regularly use OER in my studies" (Mean = 3.86, SD = 0.86) and "I download/save OER for future use" (Mean = 3.85, SD = 0.94), reflecting regular and purposeful use of OER. Then again, the lowest mean score was for "I critically evaluate OER before using" (Mean = 3.64, SD = 0.91), indicating that students are not as engaged in the evaluation of OER's quality and trustworthiness before using them.

Overall, the findings seem to suggest that students are pretty engaged with OER, for learning purposes, but could improve on their ability to assess the quality of the source material being utilised. The high reliability of the test proves the credibility of these findings.

Table 4.9: Perceived Benefits of Open Educational Resources

Sl. No.	Statement	Mean	Standard Deviation	Rank
1	OER supports self-learning	4.36	0.61	1
2	OER saves study cost	4.31	0.71	2
3	OER improves my understanding of subjects	4.31	0.58	3
4	OER provides flexible learning opportunities	4.29	0.64	4
5	OER improves academic performance	4.26	0.68	5
6	OER increases my interest in learning	4.10	0.75	6

A One-Sample t-test was performed to examine students' perceptions of the benefits of Open Educational Resources (OER). This test was conducted to check whether the overall mean score of perceived benefits is higher than the neutral midpoint value 3.00 on the five-point Likert scale. For this purpose, the following hypothesis were prepared.

Null Hypothesis (H_0): The students do not perceive any benefits from Open Educational Resources (Mean = 3.0).

Alternative Hypothesis (H_1): The students do perceive benefits from Open Educational Resources (Mean > 3.0).

Based on the analysis, the result showed that the overall mean score was 4.27 (SD = 0.51), which was much higher than the neutral value. The One-Sample t-test showed that this difference was statistically significant, $t(184) = 33.82$, $p < 0.001$. Because the p-value was less than 0.05 significance level, the null hypothesis was rejected, and alternative hypothesis was accepted.

The findings revealed that students recognised OER as highly beneficial for their learning and academic activities. This mean score demonstrates that students think OER help them to better understand subjects, facilitates self-learning, provides opportunities for flexible learning, boost academic performance, and reduce educational costs. The result showed a strong positive attitude towards OER among students. Therefore, conclude that OER can be considered an effective tool to enhance student learning and academic success in higher education.

Table 4.10: Challenges Faced by Students in Accessing and Using OER

Challenges	Frequency	Percentage (%)	Rank	Severity Level
Difficulty finding quality content	109	58.9	1	High
Poor internet connectivity	96	51.9	2	High
Lack of guidance	68	36.8	3	Moderate

Lack of awareness	66	35.7	4	Moderate
Lack of digital skills	39	21.1	5	Low
Language issues	23	12.4	6	Low

Table 4.10 provides an overview of the main problems faced by students when using Open Educational Resources (OER). The most commonly reported issue was difficulty finding quality content, with 58.9% of respondents marking it as a barrier. Poor internet connectivity (51.9%) ranked second and was also considered a high difficulty, which points to the fact that a robust technology platform is essential for the proper use of OER. The third and fourth highest were lack of guidance (36.8%) and lack of awareness of OER (35.7%), both challenges of moderate severity indicating that a reasonable number of respondents would benefit from more institutional guidance and increased institutional awareness of OER. In contrast, challenges of lower severity were reported by a small proportion of respondents, including lack of digital skills (21.1%) and language issues (12.4%). Overall, the findings suggest that students primarily struggle to find high-quality OER materials and access them through reliable internet access, not due to a lack of digital skills. This highlights the need for better resource organization, awareness efforts, and technological support within the university.

5. Recommendations

Based on the study findings, the following recommendations are put forward:

- 1) Universities need to conduct regular awareness programs and workshops to educate students about Open Educational Resources (OER) and encourage them to use these resources.
- 2) Faculty members must promote and incorporate OER into their lectures and teaching practices.
- 3) Libraries should guide and provide access to OER platforms and reliable quality educational resources.
- 4) The university should improve Internet connectivity and digital infrastructure to enable seamless access to OER.
- 5) Students themselves should be trained to carefully evaluate the quality and credibility of OER before using it for academic tasks.
- 6) Large-scale institutional support and policies need to be in place to encourage the effective adoption and use of OER across all academic disciplines.

6. Conclusion

The results of the study revealed that students of the Central University of Tamil Nadu are highly aware of Open Educational Resources (OER), as the majority of students reported that they frequently use OER for their studies. The most preferred types of OER are YouTube lectures and online courses which show students' preference for multimedia and interactive learning resources. In addition, research results show a moderate level of student engagement with OER through exploration of different platforms, use of OER in studies, and storage of OER resources. Students felt that OER are very helpful for self-study, better understanding of subjects, better academic performance, learning flexibility and reducing expenses in education. The Study also identified barriers to successful use of OER. Some of the barriers identified are difficulty in finding quality OER, poor internet connectivity, lack of guidance on using OER and limited awareness of OER. Overall, the study concludes that OER strongly supports student learning and engagement. However, more support from institutions is needed to fully realize their benefits.

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