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Awareness And Utilisation Of Open Educational Resources Among Pupil Teachers In Balasore District

[1] Mausumi Dutta, [2]Snehasis Mohanty, [3]Pranabkanti Dutta

[1]Faculty in department of integrated B.Ed.-M.Ed.

MSCB University, Baripada

Abstract:

In the present age of digital education, OER act as useful resources that provide free learning materials, support modern teaching practices, and help learners study on their own. The study explores the awareness and utilisation of open educational resources among pupil teachers in Balasore district. The primary objectives of the study are to examine the awareness of OER among pupil teachers, compare this awareness across academic streams i.e. Arts and Science, analyse the extent of OER usage, and assess differences in usage between Arts and Science pupil teachers. A descriptive method was adopted, and 60 pupil teachers were selected as sample by using simple random sampling. Self-made awareness scale and standardised rating scales by N. Ojha and A. Surana were employed for data collection. The findings indicate that the pupil teachers of Balasore district have average awareness of OER, with no significant difference between science and arts groups. Similarly, both groups showed comparable levels of OER usage, indicating consistent utilization across streams.

Keywords: open educational resources (OER), pupil teacher, awareness

Introduction

Quality education depends fundamentally on the availability of quality resources. In the past, only a privileged few could afford such materials. Today, however, the internet offers a wealth of educational content spanning all levels of learning open to anyone eager to learn. This online content is not only accessible but also often freely available for everyone to read and study. Due to the integration of technology, sharing knowledge has become effortless for learners across the globe. A wealth of digital platforms now enables seamless exchange of ideas, information, and expertise. Open Educational Resources (OER) further enhance this accessibility by offering diverse platforms, portals, and applications that support connectivity from anywhere at any time (Ojha & Surana, 2023). Universal Declaration of

Human Rights (1948) in Article 26 affirms that everyone is entitled to education. It stipulates that primary education must be free and compulsory, while technical and professional training should be readily available, and higher education must be accessible to all on the basis of merit (United nations, 1948). Open educational resources (OER) are digital learning materials freely available on the internet. They can be accessed, downloaded, shared, and modified without cost, providing all learners with tools to enhance their understanding. OER provide users with significant freedoms under specific licensing terms, allowing use with minimal or no restrictions. A resource can qualify as an OER based on its license: if it carries an open license like Creative Commons or is in the public domain, it grants legal permission for free use, adaptation, and sharing. Resources explicitly designated as public domain can be used without any restrictions at all.

Teacher Education and Open Educational Resources

The rapid advancement of technology and the widespread availability of the Internet have given rise to various open educational practices, including online learning, e-learning, and distance education (Abri & Dabbagh, 2018).Teacher education in India is governed by several key statutory authorities, including the University Grants Commission (UGC)**,** theAll India Council for Technical Education (AICTE**)**, national council of educational research and training (NCERT) and theNational Council for Teacher Education (NCTE)**.**NCTE plays crucial role for strengthening teacher education and have introduced a range of digital platforms and e-resources like DIKSHA, e-Pathshala, NISHTHA, SWAYAM etc. to facilitate teaching and learning. For pupil teachers to make the most of digital tools in education, it is crucial that they not only have access to e-resourcesbut also develop strong awareness and skills in using them effectively.

Review of Related Literature

Open Educational Resources (OER) have gained significant attention in recent years for their potential to enhance teaching and learning. Several studies have explored the awareness and use of OER among educators and students.

Ojha and Surana (2023) investigated OER awareness and usage among stakeholders of teacher education and found significant differences based on program level, academic stream, gender, and locality. Similarly, Dsouza (2021) reported that while most respondents were aware of OER platforms such as SWAYAM, NPTEL, and Coursera, limited experience, difficulties in accessing relevant resources, and lack of understanding of copyright and licensing laws were major barriers to effective use. Postgraduate students' familiarity with OER was examined by Ndaago et al. (2025), who found that although OERs were accessible via platforms like Sakai and Moodle, many students lacked detailed knowledge of specific resources and their components. Garg and Burman (2024) highlighted that among B.Ed. students, SWAYAM-NPTEL and NCERT were the most utilized OERs, mainly for course materials, assignments, and general knowledge enhancement.

Research on higher education scholars, such as Sahu and Khunte (2025), revealed high awareness i.e. 92.54% and active use (82.09%) of OER, particularly through YouTube and Shodhganga, though challenges like poor internet access and concerns about authenticity remained. Arunkumar and Kannan (2020) also observed frequent OER usage among PG students, with most using resources daily or weekly for academic purposes. Studies in different geographical contexts, including Nigeria (Ojo et al., 2023; Obinyan et al., 2023), reported high student awareness and utilization of OER, particularly for lecture notes, journals, and courseware, though challenges such as limited skills and infrastructure issues were noted. In technical education, Rao (2022) found that faculty awareness was higher (98%) than student awareness (59%), indicating a gap in adoption among learners.

Finally, Rowell (2015) and Ozdemir and Bonk (2017) emphasized that while both students and teachers generally have a positive attitude towards OER, a lack of clarity regarding open licensing and differentiating OER from general digital contentlimits optimal use.

Statement of the Problem:

In the present era, Open Educational Resources (OERs) play a vital role in every educational institution**.** Therefore, it becomes essential to examine how pupil teachers in teacher education institutions make use of OERs and to what extent they are aware of them.

Therefore, the present study is stated as "Awareness and Utilisation of Open Educational Resources among Pupil Teachers in Balasore District."

Delimitation of the Study:

The study is delimited to 2 years govt. B.Ed. students of Balasore district only.

Objectives of the Study:

1. To study the awareness of OER availability among the pupil teachers.
2. To compare the awareness of OER with respect to academic stream i.e. arts and science among pupil teachers.
3. To analyze the use of OER with respect to stream i.e. arts and science among pupil teachers.

Research Question:

1. What is the level of awareness regarding the availability of OER among pupil teachers?

Hypothesis of the Study:

1. There is no significance difference between arts and science pupil teachers regarding awareness of OER.
2. There is no significance difference between arts and science pupil teachers regarding the use of OER.

Methodology:

The researcher adopted the descriptive method to investigate the awareness and utilisation of Open Educational Resources (OERs) among pupil teachers. The population of the study comprised all two-year B.Ed. students in Balasore district. From this population, the researcher selected a sample of 60 pupil teachers, consisting 30 from science stream and 30 from arts stream, through the simple random sampling technique. The self-made Awareness Scale of OER and the Rating Scale for Use of OER (developed by Namita Ojha under the supervision of Dr. Ajay Surana) were adoptedas tools for data collection. The collected data were analysed using the percentage and t-test as the statistical technique.

Data Analysis and Interpretation:

Objective 1- To study the awareness of OER availability among the pupil teachers.

To analyse this objective researcher has been used percentage as a statistical technique and the result has been explained below:

Table 1: Percentage analysis of awareness on open educational journal

Open educational journal	Not at all aware	Slightly aware	Average	Fully aware	Extremely aware
DOAJ	6%	26%	68%	0%	0%
Open access library	0%	3%	71%	23%	3%
Indian academy of science	38%	59%	3%	0%	0%
J Gate	0%	32%	58%	10%	0%
Open Springer	0%	21%	61%	18%	0%

Above data revealed that DOAJ records 68% at the average level, indicating limited awareness among pupil teachers. Open Access Library shows the strongest recognition, with 71% average, 23% fully aware and 3% extremely aware. In sharp contrast, the Indian Academy of Science reflects very poor awareness. J Gate demonstrates moderate awareness, with 58% average and 10% fully aware, though 32% fall into lower levels. Open Springer performs better, with 61% average and 18% fully aware.

Table 2: Percentage analysis of awareness on open educational Repositories

Open educational repositories	Not at all aware	Slightly aware	Average	Fully aware	Extremely aware
DOAR	7%	41%	52%	0%	0%
NROER	6%	15%	71%	8%	0%
NPTEL	5%	29%	64%	2%	0%
NDLTD	3%	56%	41%	0%	0%

The data on awareness of open educational repositories reveals that 71% reporting average awareness and 8% fully aware on NROER. NPTEL also demonstrates relatively strong awareness, as 64% fall under the average category, though a considerable 29% are only slightly aware and just 2% fully aware, suggesting limited in-depth understanding. DOAR shows moderate awareness, with 52% at the average level and 41% slightly aware, but none fully or extremely aware, reflecting restricted deeper familiarity. In contrast, NDLTD records the weakest awareness, as more than half (56%) are only slightly aware and 41% at the average level, with no respondents reaching higher categories.

Table 3: Percentage analysis of awareness on open educational database

Open educational database	Not at all aware	Slightly aware	Average	Fully aware	Extremely aware
ERIC	5%	43%	52%	0%	0%
Open Thesis.org	2%	5%	38%	53%	2%
Shodhganga	0%	0%	2%	86%	12%
OATD	35%	49%	15%	1%	0%
Google Scholar	0%	0%	9%	91%	0%

Data in the table reveals that Shodhganga and Google Scholar show the highest recognition, with 86% and 91% of respondents fully aware, and Shodhganga further supported by 12% extremely aware. OpenThesis.org also enjoys strong familiarity, with 53% fully and 2% extremely aware. In contrast, ERIC is moderately known, with most respondents only slightly (43%) or averagely aware (52%), and OATD records the lowest recognition, as 84% remain in the not at all or slightly aware categories.

Table 4: Percentage analysis of awareness on open educational e-books libraries

Open educational e-books libraries	Not at all aware	Slightly aware	Average	Fully aware	Extremely aware
OpenStax college	12%	48%	39%	1%	0%
Open textbook library	0%	38%	62%	0%	0%
BC Open Ed.	39%	43%	18%	0%	0%
Project Gutenberg	9%	38%	52%	1%	0%

The data reveals that Awareness of the Open Textbook Library and Project Gutenberg are the most recognized, with 62% and 52% of respondents respectively at the average level of awareness, though higher familiarity remains limited. OpenStax College reflects moderate recognition, as nearly half (48%) are slightly aware and 39% average. In contrast, BC OpenEd records the weakest visibility, with 82% either not at all or only slightly aware and only 18% at the average level.

Table 5: Overall percentage analysis of various OER

Awareness of various OER	Not at all aware	Slightly aware	Average	Fully aware	Extremely aware
Open libraries	6%	2%	70%	22%	0%
Open journals	0%	3%	82%	12%	3%
Open repositories	2%	9%	61%	18%	10%
Open database	0%	3%	38%	58%	1%
Open e-books	0%	23%	69%	8%	0%

Open journals record the strongest awareness, with 82% average and 15% in higher levels. Open libraries also perform well, with 70% average and 22% fully aware. Open repositories show a balanced spread, with 61% average and nearly 30% in higher levels. Open databases differ, with only 38% average but a majority (58%) fully aware, indicating concentrated deeper familiarity. Open e-books show weaker awareness, as 23% are slightly aware and 69% average, with few at higher levels. The above data is depicted below;

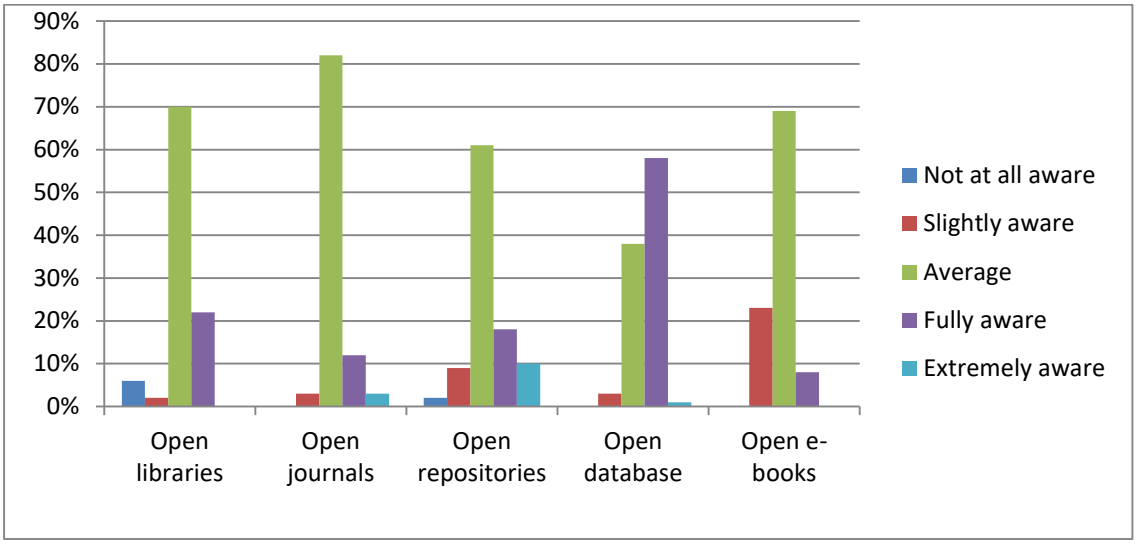

Fig 1: Graphical representation of overall percentage of various OER

Objective 2- To compare the awareness of OER with respect to academic stream i.e. arts and science among pupil teacher.

Hypothesis (H_0): There is no significance difference between arts and science pupil teachers regarding awareness of OER.

Table 6: Comparison of OER awareness among science and arts pupil teachers

Stream	N(sample size)	Mean	S.D	't' value (calculated)	Table value of 't' at		Remark
					0.05 level	0.01 level	
Science	30	90.83	18.53	0.626	1.67	2.66	Null hypothesis accepted (not significant)
Arts	30	93.46	22.91				

The table compares the awareness of Open Educational Resources (OER) between science and arts pupil teachers. The mean awareness score for science pupil teachers is 90.83 with a standard deviation of 18.53, while for arts pupil teachers the mean score is93.46 with a standard deviation of 22.91. The calculated t-value is 0.626, which is lower than the critical t-values at both the 0.05 level and 0.01 level when degree of freedom 58. This indicates that the difference in OER awareness between science and arts pupil teachers is not statistically significant**.** Therefore, the null hypothesis is accepted.

Objective 3- To analyze the use of OER with respect to stream i.e. arts and science among pupil teachers.

Hypothesis (H_0): There is no significance difference between arts and science pupil teachers regarding the use of OER.

Table 6: Comparison of OER uses among science and arts pupil teachers

Stream	N(sample size)	Mean	S.D	't' value (calculated)	Table value of 't' at		Remark
					0.05 level	0.01 level	
Science	30	59.63	8.99	0.256	1.67	2.66	Null hypothesis accepted (not significant)
Arts	30	62	6.84				

The table compares the use of Open Educational Resources between science and arts pupil teachers. The mean of OER usage score for science and arts pupil teachers is 59.63 and 62, with a standard deviation of 8.99 and 6.84 respectively. The calculated t-value is 0.256, which is much lower than the critical t-values at both the 0.05level and 0.01 levels. This shows that the difference in OER usage between science and arts pupil teachers is not statistically significant. Therefore the null hypothesis is accepted.

Findings of the Study

The findings of the study are;

1. The pupil teachers of Balasore district have average awareness of the availability of Open Educational Resources (OER).
2. The awareness of Open Educational Resources (OER) among science and arts pupil teachers was found to be similar, with no statistically significant difference between the two groups, leading to the acceptance of the null hypothesis.
3. Findings indicate that there is no notable difference between arts and science pupil teachers of Balasore district in terms of OER usage.

Suggestions for Further Research

Based on the findings of this study, several directions for future research are recommended. Further research can be undertaken by expanding the study to include a larger sample of pupil teachers or covering multiple districts to examine regional variations in OER awareness and usage. Studies could focus on subject-specific awareness to identify particular gaps in arts, science, or other disciplines. The effectiveness of training programs or workshops in enhancing OER knowledge and usage can also be explored. Additionally, qualitative studies using interviews or focus groups may reveal barriers and challenges faced by pupil teachers. Research could examine how OER is integrated into teaching practices and its impact on student learning, as well as comparative studies between pupil teachers and in-service teachers. Such studies would provide valuable insights for improving OER adoption and effective utilization among teachers.

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