DISTANCE LEARNERS' ENGAGEMENT WITH ELECTRONIC INFORMATION RESOURCES: INSIGHT FROM THE OPEN UNIVERSITY OF SRI LANKA

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This study explores the engagement of distance learners at the Open University of Sri Lanka with e-resources, focusing on their preferences, practices, and attitudes. It investigates the types of sources used, purposes of use, common information retrieval practices, perceptions of usability, and challenges faced. Despite the provision of various e-resources by the university and the transformative impact of electronic formats on education, empirical insights into the interaction of distance learners with these resources, both from the university and external websites, are lacking. This study aims to address this gap and proposes strategies to enhance e-resource utilization to better meet user information needs. The study employed a questionnaire survey method which included a sample of 100 undergraduates selected randomly from Kandy and Mature Regional centers according to convenient sampling method. The response rate was 73%. Findings indicate that the university's homepage serves as a primary information source due to its centralized and comprehensive nature. Social media platforms were found to be equally important. Students frequently access e-resources daily, primarily for educational purposes, with Google search being the most utilized tool, while keyword, subject and phrase search were the most often-used techniques. Students had positive perceptions about e-resources. Challenges include internet connectivity issues, information overload, inadequate search skills, and a lack of awareness of relevant resources. Recommendations are provided to enhance the e-resource environment for distance learners and adapt to the evolving digital landscape.

Keywords: E-resources, online resources, undergraduates, library services, library usage, information seeking behavior, E-learning.

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INTRODUCTION

The rapid evolution of electronic formats for information dissemination has profoundly impacted various sectors, including education. Academic institutions have embraced these advancements to enhance their services, particularly in the realm of distance education. Among them, the Open University of Sri Lanka (OUSL), a pioneering state-owned institution for distance learning, has significantly harnessed electronic publishing, storage, and delivery of information to improve its services. The provision of electronic information resources (e-resources) for distance learners has emerged as a critical focus at OUSL. Over time, the university has transitioned from employing VHS tapes and mass media to adopting CD-ROMs, Learning Management Systems (LMS), and online platforms to deliver educational content (Jayathilaka and Kulasekara, 2020).

The university's main website serves as a centralized hub for information seekers, offering comprehensive details about the university and its activities. It provides links to academic departments, programs, the library, the learning management system, and various other resources. The library's main page is administered by the main campus and plays a pivotal role in delivering e-resources to distance learners through the library network, which encompasses nine regional centers. The library's webpage facilitates access to the collection catalogue, online databases, e-books, subscribed content, open educational resources (OER), and the institutional repository.

Despite the abundance of electronic resources available, there remains a notable lack of empirical understanding regarding the information-seeking behaviours of distance learners, especially concerning e-resources. Gaining insights into students' behaviours when accessing and utilizing e-resources, whether provided by the university or external sources, is essential for improving the provision of such resources and related facilities effectively. This study aims to uncover students' usage patterns and attitudes toward electronic information, both academic and general, provided by the university as well as external websites. By addressing this research gap, the study aims to propose strategies for enhancing the utilization of e-resources to better meet the information needs of users. The research will primarily focus on two regional centres within the Open University, with particular attention given to the Faculty of Natural Sciences due to its significant role in student enrolment.

Established in 1980 under the University Act of 1978, the Open University of Sri Lanka holds a prime position as a national university in Sri Lanka. Operating under the framework of open and distance learning (ODL) methodologies, it offers academic programs that cater to a diverse range of learners.
The central campus, located in Nawala, Colombo, serves as the hub of activity. Beyond this, the university's services extend through an extensive network of regional and study centers throughout the island. These include nine regional centers situated in Colombo, Kandy, Matara, Anuradhapura, Jaffna, Batticaloa, Badulla, Kurunagala, and Rathnapura, along with an additional 19 study centers dispersed across the country. The provision of library services is a feature maintained at each of the nine regional centers.

In the forthcoming paragraphs, the authors aim to clarify key terms and concepts that were used in the research.
Electronic information resources (e-resources): These encompass information sources available in electronic formats, accessible both offline and online via intranet or internet platforms using devices such as computers, e-readers, tablets, and smartphones. Examples of e-resources encompass a wide

array of digital content, including electronic journals (e-journals), electronic books (e-books), online databases and web pages (LIS education network, 2023).

Social media as a e-resource: In the world of online learning, Connectivism stands out as a key theory developed by Siemens in 2005. It emphasizes how the internet has changed the way we learn and share information globally through the World Wide Web (WWW). This theory highlights how internet tools and platforms have opened up new opportunities for learning and exchanging knowledge worldwide. Importantly, Connectivism recognizes the crucial role of social media, using technology and online interactions to support learning. So, in this study, social media was considered as an important part of e-resources because it aligns with the principles of Connectivism.

Distance Learner and Distance Learning Mode: This method of instruction diverges from traditional classroom settings, leveraging technologies such as the internet, email, and mail for instructional purposes (Merriam-Webster Dictionary, 2023).

In the forthcoming literature review section, authors delve into the information-seeking behaviours of local conventional university students with regard to e-resources, revealing their patterns of information seeking and engagement.

Review of the Literature

In the context of Sri Lankan universities, several studies have shed light on the usage patterns of electronic information resources by students. Punchihewa (2008) focused on students at The University of Moratuwa and found a correlation between internet experience and the utilization of online resources. Additionally, students with more experience in conducting academic research tended to use online databases more frequently. Key factors influencing material selection included awareness and convenience. This study emphasized the vital role played by library guides, websites, staff, alert services, and instructional tours in promoting online resources provided by the library.

A study conducted at the University of Peradeniya, revealed that final-year Arts undergraduates primarily relied on search engines like Google rather than specialized databases or full-text resources when working on their dissertations. A majority of respondents had never used the library's webpage to access e-resources, and only 10% were familiar with the library's available electronic resources. The study highlighted a critical issue: undergraduates often struggle with information literacy skills, hindering their ability to search for and effectively use information (Premaratne, 2017).

Moreover, Lavanya and Santharooban (2018) explored the online usage patterns of students, at the Faculty of Agriculture Science, Eastern University, Sri Lanka. Their research revealed that internet use was prevalent among students for both educational and entertainment purposes. Online resources become fundamental for learning and research activities. However, not all students possessed the necessary skills to access these resources effectively, emphasizing the importance of analysing usage patterns before implementing awareness programs.

Moving forward to 2019, Jayakanantha and Jeyraj examined postgraduate students' intentions to utilize electronic information resources at the Eastern University, Sri Lanka. Their findings emphasized that facility terms (ease of navigation etc.) positively correlated with students' intentions. However, computer experience had a neutral effect on students' prospects of using these resources. The study demonstrated complex relationships among various factors influencing students' intent and behaviour regarding electronic information resources, highlighting the need for a comprehensive understanding of their usage.

In summary, these studies collectively highlight the challenges and opportunities associated with improving the utilization of electronic information resources among Sri Lankan students. While a few studies on the use of e-resources by the OUSL community were conducted in the past decade, it is worth noting that there is a lack of recent research in this area.

Problem statement

While the Open University of Sri Lanka has made significant investments in e-resources for distance learners, there remains a conspicuous gap in understanding how these students seek information and utilize these resources. Despite the transformative impact of electronic formats on education, empirical insights into the interaction of distance learners at OUSL with e-resources, provided both by the university and external websites, are lacking. This dual knowledge gap poses a challenge to effectively providing e-resources and related facilities to meet the information needs of users optimally.

Objectives

The present study seeks to provide insights into distance learners' engagement with electronic information resources at the Open University of Sri Lanka, with a specific focus on students from the Faculty of Natural Science (FNS) at the Kandy Regional Centre (KRC) and Matara Regional Centre (MRC). The study aims to achieve the following objectives:

1. Assessing the usage patterns of e-resources by distance learners of OUSL.
2. Identifying the information searching and retrieval practices among distance learners.
3. Exploring the attitudes of distance learners towards e-resources.

Specific objectives of the study were formulated as follows:

1. To identify the types of e- resources used by students and the frequency of usage
2. To identify the pathways, tools and techniques employed in information search and retrieval
3. To identify the preferences for and challenges of using e- resources

By addressing these objectives, this study aims to bridge the existing knowledge gap and contribute valuable insights for optimizing the use of e-resources in the context of distance learning at the Open University of Sri Lanka.

METHODOLOGY

The study focused on the Kandy and Matara Regional Centers of the Open University of Sri Lanka as these centers had the highest student enrolments. The primary target population for this research was undergraduate students from the Faculty of Natural Sciences (FNS). Since FNS students represented the largest user group of the center as well as the library, they were selected as the study's population. A quantitative survey method was used with a structured close ended questionnaire as the research tool to collect data from the FNS students who visited the two regional centre libraries of the OUSL.
Conducting research in distance learning institutions often presents challenges related to low response rates due to the nature of distance education. Moreover, most teaching activities had transitioned to online modes as a result of the demanded practice during the COVID-19 pandemic period. Therefore, physical visits to the library were not mandatory, making it difficult to collect data through traditional means. To address these challenges, a convenient sampling method was employed. A total of 100 questionnaires were distributed to students who visited the library at the Kandy and Matara Regional Centers. After careful screening to remove incomplete and inappropriate responses, a total of 73 completed questionnaires were considered for data collection. The data collected through the questionnaires were primarily analysed using MS- Excel and presented as descriptive statistics.

RESULTS AND DISCUSSION

To comprehensively assess electronic resource utilization and practices by distance learners, various facets were explored: types and frequency of access, platforms and devices used, retrieval and storage techniques, and the purpose behind access. Attitudes of users were assessed in relation to usability preferences and challenges encountered.

Demographic Information
The study achieved a commendable response rate of 73%. The highest volume of responses came from Level 5/final year students (53%), followed by Level 4 (24.7%) and Level 3 (21.9%), respectively. In terms of subjects studied, 30% were pursuing Chemistry, 21% Botany, 19% Zoology, 13% each in Physics and Computer Science, with only 2% studying Mathematics. Among the respondents, 52% were under 25 years of age, and a majority (45) were females. A significant proportion, 72%, of the students were unemployed.

Types of e-resources used by students
The most utilized resource among OUSL students was found to be the university's webpage (Table 1). While in the absence of specific research evidence to support this particular finding, it's not uncommon for a university's homepage to serve as a primary information source due to its centralized and comprehensive nature.

Following the university webpage, YouTube and social media emerged as the next popular information sources among students. This aligns with previous research both locally and abroad, which has highlighted the widespread popularity of social media as an information source among students (Hettige *et al.*, 2022).

In contrast, academic databases and e-journals were reported as being used occasionally or infrequently by students. This could be attributed to the absence of a mandatory research component in the undergraduate course, which might reduce the students' need to extensively reference research literature. Similar trends have been observed in conventional universities, where even with a research component, specialized databases are underutilized by university students regardless of their disciplines (Hettige, *et al.*, 2022 ; Fernando & Weerakoon, 2023; Premarathne, 2017; Wijetunge and Peiris, 2017). This limited usage might be linked to a lack of awareness or motivation to explore new knowledge sources.

The percentage of students using e-books was notably low at 5.4%. Generally, it appears that students turn to e-books on an as-needed basis. According to Vithana (2015), the limited availability of freely accessible e-books may contribute to this low usage. However, it is important to note that several Open Educational Resources (OER) platforms offer free access to e-books. Further research is needed to delve into the underlying reasons for this low adoption among students.

Table 1: Types of e-resources used by students.

Types	Mean	%	Response	Mean range
OUSL web page	5.67	14.3	Usually, most of the Time	(5.30-6.14)
YouTube	5.20	12.3	Frequently	(4.44-5.29)
Social Media	4.85	10.5		
e - books	4.13	5.4	Sometimes	(3.58-4.43)
Other web pages	4.00	10.7		
Online Documents	3.97	12.9		
e-mail	3.83	11.8		
Academic database	3.46	11.2	Occasionally	(2.72 - 3.57)
e - journals	2.68	5.6	Rarely	(1.87 - 2.71)
Support Software	2.54	5.4		

Frequency of using e-resources

The study found that a majority of students, comprising 58%, reported daily access to some form of e-resources. Additionally, 34% of students accessed e-resources once to a few times a week, while a smaller segment, approximately 10%, exhibited infrequent access to e-resources (Table 2).

Similar findings in the local context support this high daily e-resource access tendency among university students. For example, Sritharan's study (2018) conducted at the University of Colombo provides a noteworthy example, revealing that 70.5% of postgraduate students accessed electronic resources daily, while 21.6% used electronic resources once a week.

Table 2: Frequency of using e- resources

Frequency	Number	%
Daily	43	58.90
Two or three days in a week	22	30.14
Once a week	3	4.11
Monthly	2	2.74
Very rarely	2	2.74
No answer	1	1.37

Platforms and devices used to access e-resources

Students were asked to rate the frequency of their e-resource access locations on a scale ranging from 1 (very rarely) to 5 (most often). It was found that the most popular method for accessing e-resources was through personal mobile devices, irrespective of location. Following this, accessing e-resources from home ranked as the next common method. Occasionally, students utilized the library and computer labs, while internet cafes and departmental labs were rarely used (Table 3).

These findings are consistent with Lavanya and Shantharooban's study in 2018, which investigated university students and similarly found that a majority accessed the internet through smartphones (79%), with 72.1% accessing it from home or their hostels, and 39% within library premises.

These results indicate that students, as distance learners, do not strongly rely on university facilities such as libraries and computer labs for e-resource access. This is reasonable, considering that most students only visit the University for Mandatory Activities such as exams, while the bulk of their learning occurs in their personal spaces. Nonetheless, the researchers explored students' perceptions of the infrastructure facilities provided by the University for e-resource Access. Among all respondents, 28 (38.36%) expressed satisfaction with these facilities, while 17 (23%) were dissatisfied. The remaining 37% held neutral views, neither entirely satisfied nor dissatisfied.

Table 3: Platforms and devices used to access e- resources

Places	Mean	Response	%
Personal mobile devices any where	4.21	Most Often	20.61
Home	3.86	Often	21.62
Library	3.22	Sometimes	17.23
Computer Laboratory	2.88	Sometimes	19.59
Internet café	2.00	Rarely	5.41
Department computer lab	1.78	Very Rarely	15.54

Purposes of using e-resources

The purposes of utilizing e-resources were categorized into three groups and analysed using Lickert mean values. The results revealed that e-resources were predominantly employed for educational purposes, with a mean score of 2.68. They were moderately used for communication (mean score of 1.77) and least utilized for entertainment (mean score of 1.66). These findings emphasize that in a university environment, the primary use of e-resources is for academic purposes, aligning with previous research (Habiba & Chowdhry, 2012).

Furthermore, the study delved into the specific activities for which e-resources were utilized. Based on the weighted mean of a 5-point Likert scale, it was evident that students frequently used e-resources to update their subject knowledge and complete assignments. Additionally, e-resources were occasionally used for gathering information for research projects. However, they were rarely employed for tasks like writing research papers and serving as communication channels (Table 4).

Table 4: Educational activities for which student use online resources

Edu. purposes	Mean	Response	%
Update subject knowledge	4.03	Often	21.3
To write Assignments	3.76	Often	22.3
Find information for research projects	3.27	Sometimes	18.8
As resources sharing channel	2.31	Rarely	20.1
To write a research paper	2.11	Rarely	17.6

Tools and techniques used by students to access and utilize e-resources

In the online environment, students utilize various tools to access information, including search engines, websites, and databases. Table 5 illustrates the popular tools employed by respondents. Notably, Google search emerged as the most frequently used tool by students to access online resources. Additionally, students reported frequent use of the OUSL website to find resources. Given OUSL's role as a distance-mode university, its homepage serves as a hub for information dissemination, offering access to numerous resources and the Learning Management System (LMS).

However, students rarely utilized the library website and academic databases to access resources (Table 5). This trend aligns with findings from other local studies, which also highlighted that students primarily rely on the popular search engine Google for accessing e-resources, with limited use of academic databases (Wijetunge & Peiris, 2017).

Table 5: Tools used by students to access e-resources

Paths /Tools	Mean	Response	%
Google search	4.58	Most often	23.51
Via OUSL web page	3.71	Often	21.52
Google Scholar Search	2.66	Sometimes	15.56
Via Library web page	2.45	Rarely	16.23
Academic data bases	2.36		14.57
Other	1.88		8.61

Table 6 shows students' preferences for different search techniques, evaluated on a five-point Likert scale ranging from "most often" to "very rarely." Keyword and subject-based searching emerged as the most frequently used techniques for information retrieval. Phrase searching was also employed frequently, while searching by publication title was an occasional practice. Conversely, searching by author was rarely used as a retrieval option.

Table 6: Techniques used by students to search online resources.

Access techniques	Mean	Response	%
Using Keywords	4.30	Most often	23.27
By subject	4.00	Most often	25.71
Typing the exact phrase	3.44	Often	22.45
Publication title	2.93	Sometimes	16.33
By author	2.03	Rarely	12.24

To gain a comprehensive understanding of how students utilize the e-resources they access, the study also examined methods of resource utilization. Results presented in Table 7 indicate that the most employed method was downloading and saving resources to external or internal storage devices. Reading, taking printouts, or uploading to cloud storage were practiced sometimes. However, emailing resources were found to be a rarely used method of sharing among students.

Table 7: Methods of making use of online resources.

Usage technique	Mean	Response	%
Download and save in storage devices (Pen, Hard drive)	4.53	most often	22.45
Screen reading (without saving)	3.24	sometimes	22.45
Take Printout	3.06		18.37
Upload on to cloud storage (Google drive, one drive)	2.63		18.37
Email	2.35	rarely	18.37

Students' attitudes regarding usability of e-resources

The study explored the students' perceptions regarding the usefulness of e-resources for their academic activities. Results indicate that a significant majority, comprising 79%, consider e-resources to be highly useful, while 19% find them somewhat useful. A portion of the respondents did not express a clear opinion on this matter.

E-resources possess several features that appeal to students. In the questionnaire, students were asked to rate their agreement with various features. The findings reveal that students strongly agree that e-resources excel in making information easier to find. Additionally, they agreed that provision of multimedia, up-to-date content, and ease of comprehension are attractive attributes. However, the reliability of content remains a subject of debate, and in this study, students indicated that they only moderately accept reliability as a feature (Table 8).

Table 8: Students' perception about the attractiveness of e-resources

Feature	Mean	Response	%
Easy to find information	4.37	strongly agree	26.27
Multimedia (audio/video facilities)	3.76	agree	21.19
Easy to understand	3.73		19.07
Up to datedness	3.59		12.29
Reliability of content	3.15	moderately agree	8.47
Coverage (amount of content)	2.43	somewhat	12.71

Within the questionnaire, students were asked to self-assess their computer skills, revealing that a majority, comprising 74%, believe their computer skills to be good, while 9.6% consider them excellent, and 6.8% find their skills satisfactory. The remaining respondents deemed their skills as fair. This data suggests that these students are generally competent in using computers and the internet. With this context in mind, the study proceeded to evaluate the difficulties encountered by students when accessing e-resources.

Table 9 highlights that the primary challenge students faced in accessing online resources was the difficulty in establishing connections to the internet and online resources. Respondents also acknowledged that an excessive amount of unwanted information posed a challenge. Furthermore, they reported that a lack of browsing and searching skills, coupled with unawareness of relevant resources, impeded their access to e-resources. These issues are common among university students, as evidenced by both local research (Lavanya & Santharooban, 2018; Premarathne, 2017) and foreign research (Ankrah & Atuase, 2018).

Table 9: Difficulties perceived by students when accessing e- resources

Difficulties	Mean	Response	%
Difficult to connect	4.15	agree	14.52
Too much unwanted information	3.86		13.70
Lack of browsing and searching skills	3.62		7.12
Unaware of relevant resources	3.48		8.49
Time Consuming	3.44		8.77
Language barriers	3.38	moderately	6.58

CONCLUTION

This study offers valuable insights into how distance learners at the Open University of Sri Lanka utilize, prefer, and encounter challenges with e-resources. These resources come from both the university itself and external sources. Notably, the university's web page and social media platforms emerged as the most frequently accessed resources, while e-books, e-journals, and academic databases saw limited use. A significant majority of students exhibited a strong tendency to access e-resources daily, primarily for educational purposes, particularly to update their subject knowledge and prepare for assignments. Google search stood out as the most commonly used tool for accessing online resources, with common search methods being keyword, subject, and phrase searching.

Moreover, students held positive perceptions about the utility of e-resources for their academic pursuits, emphasizing attributes such as ease of information retrieval, multimedia capabilities, currency of content, and user-friendly interfaces. However, the issue of content reliability did raise some moderate concerns. Given that these students are distance learners, it's important to note that the preferred mode of accessing e-resources was through personal mobile devices. Nevertheless, they expressed satisfaction with the facilities provided within the university. Despite their self-reported computer skills, students encountered several challenges while accessing e-resources. Foremost among these challenges was the difficulty in establishing internet and online resource connections. Additionally, students cited issues such as information overload, insufficient browsing and search skills, and a lack of awareness about relevant resources as hindrances to their e-resource access.

These findings shed light on the evolving landscape of e-resource utilization among distance learners, emphasizing the critical role of user-friendly interfaces for mobile devices, connectivity, and

information literacy skills. Addressing these challenges will be vital for OUSL and similar institutions to enhance the accessibility and utility of e-resources, ultimately enriching the educational experience of their students.

RECOMMENDATIONS

Given that the students are distance learners, it is crucial to adapt recommendations to their specific circumstances. Information literacy programs should be customized to equip distance learners with effective online research skills, considering they access e-resources from various locations and networks. Emphasis should also be placed on content reliability assurance, ensuring that commonly used e-resources meet rigorous quality standards. User-friendly interfaces must cater to the diverse devices and locations distance learners utilize for resource access. Awareness campaigns and resource guides tailored for distance learners should highlight the wealth of available online resources and provide guidance for remote access. Establishing accessible technical support services that are available regardless of location is essential, as is promoting collaborative learning opportunities among distance learners to share best practices. Regular surveys and feedback mechanisms should capture the evolving needs and challenges of distance learners. Resource sharing through partnerships with online libraries and databases, should be explored. Finally, a comprehensive, long-term e-resource management strategy should be designed, focusing on the unique requirements of distance learners, and aligning with evolving technologies to enhance their remote learning experiences. These recommendations collectively aim to create an enriched e-resource environment that empowers distance learners and aligns with the evolving digital landscape.

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