

# Awareness, Accessibility, and Utilization of E-Resources Among the Selected Students of City College of Calapan (CCC)

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## Abstract

This study examined the level of awareness, accessibility and utilization of e-resources among the selected students at City College of Calapan. The respondents consisted of 336 students selected from a total population of 2,097 enrolled across various academic programs. Using the descriptive-correlational design, data were gathered through a researcher-made questionnaire and analyzed using weighted mean and Pearson's  $r$  (product-moment correlation coefficient). The findings revealed that students have a high level of awareness of e-resources, particularly in terms of knowledge, functional and purpose awareness (overall weighted mean = 2.85). Similarly, accessibility to e-resources was found to be high across technical, institutional and user accessibility (overall weighted mean = 2.71). However, the extent of utilization of e-resources was generally low, especially in terms of purpose of use, frequency of use and depth of use (overall weighted mean = 2.37). Furthermore, the study found a moderate and statistically significant positive relationship between awareness and accessibility. In contrast, the relationships between awareness and utilization, as well as accessibility and utilization, were weak but still statistically significant and positive. These conclusions show that while students are generally aware of and have access to e-resources, these factors do not necessarily translate into frequent and purposeful utilization. In response, an action plan is proposed to strengthen functional awareness, improve user support, and encourage the integration of e-resources into academic tasks. Sustained efforts in these areas are necessary to ensure that e-resources become a more integral and effective part of students' academic experience. This study offers valuable insights to the librarians, IT staff, educators and college administrators in designing strategies to improve the effective use of e-resources in academic settings.

**Keywords:** E-resources, Awareness, Accessibility, Utilization, Descriptive-correlational research

## INTRODUCTION

Students' awareness, accessibility and utilization of electronic resources (e-resources) play a vital role in achieving academic success in higher education institutions. These factors influence how effectively students engage with the digital academic materials, particularly in an increasingly technology-driven learning environment. As the learning and research continue to move online, the e-resources have become an essential component of how students' study, complete academic tasks and develop the research skills. E-resources are broadly defined as information materials that are created, stored and distributed in digital form and can be accessed using computers or other electronic devices (Bano, 2022). These include e-

books, e-journals, e-newspapers, online databases, e-images, e-sounds and music collections. Platforms such as JSTOR, EBSCO, SpringerLink, GALE, PROQUEST and other Open Educational Resources (OERs) provide students and researchers with access to thousands of academic journals and scholarly materials across multiple fields (Ashikuzzaman, 2025). Compared to the printed materials, e-resources offer several advantages because they are digitally stored and easily accessible. Their benefits include fast updates, advanced search tools, interactive features, lower cost and availability in multiple file formats such as in PDF, HTML and EPUB (Francis, 2024).

The effective use of e-resources, however, depends not only on their availability but also on the students' level of awareness, accessibility and utilization. Awareness refers to the students' familiarity with the available resources. Accessibility involves their ability to reach and use these materials, and the utilization reflects how these e-resources are applied in academic work.

In the Philippine context, studies highlight the importance of these factors in supporting student learning. According to Roman et al. (2020), study emphasized the need to strengthen the students' awareness through orientation and training programs, while Leonido et al. (2024) found that students who actively utilized digital libraries demonstrated improved academic performance. Despite these benefits, challenges such as poor internet connectivity, limited institutional support and user-unfriendly platforms continue to affect the students' access and use of e-resources (Dayawon, 2025).

While these studies provide valuable insights, most have been conducted in the state universities with extensive access to subscribed databases and well-established digital infrastructures. However, limited studies have been conducted in local institutions with restricted access to e-resources, such as the City College of Calapan, where students primarily rely on the STARBOOKS and Open Educational Resources (OERs) provided through the library's Google Sites. Additionally, no study has yet been conducted at the City College of Calapan examining the students' awareness, accessibility and utilization of e-resources. With this, the researcher aims to assess the level of students' awareness, accessibility and utilization of e-resources and to examine the relationships among these variables. The study also seeks to develop an action plan to improve the students' engagement with e-resources. The findings will provide an empirical basis for enhancing e-resource services and supporting students in maximizing available digital learning materials for their academic and research needs.

## **LITERATURE REVIEW**

### **Level of Awareness of E-Resources**

Awareness of e-resources involves more than simply knowing which tools exist or having internet access. According to Alordiah et al. (2023), awareness is explained as having familiarity with facts and ideas acquired through learning and real-life experience. Asha (2023) reported that students at an agricultural university in Uttar Pradesh demonstrated a moderate level of awareness of e-resources, they were aware of their existence but lacked a full understanding of their functions, highlighting the need for additional orientation and training. However, Jaganbabu et al. (2023) also found that students at DMI institutions were aware of e-books and other electronic resources for accessing course content and references, but they were less familiar with navigating all the features of the various platforms.

Additionally, Humbhi (2023) noted that when both teachers and students are aware of electronic resources, they can effectively use these tools to enhance research, teaching and learning activities. Berestok (2023) emphasized that awareness enables higher education students and faculty to leverage technological tools that support distance learning, foster interactivity, and integrate with other ICT applications. Similarly,

Alam et al. (2021) highlighted that both awareness and proper use of these resources are critical for effective learning and for improving academic performance.

### **Level of Accessibility of E-resources**

Zhang et al. (2020) defined accessibility as the extent to which users can efficiently and effectively reach and use digital resources, including e-resources and open educational materials. Accessibility encompasses not only the availability of resources but also the technical, institutional and user-related factors that influence their use. Research suggests that even when digital collections are extensive, users often encounter barriers to access. Device limitations and high data costs can restrict access to online resources (Rahiem, 2020), while students may also face slow downloads, poor platform performance and insufficient availability of computers (Armah & Cobblah, 2021). Furthermore, Pursan et al. (2023) emphasized that providing technical support for information technology is crucial for enhancing student satisfaction, as it enables students to navigate, access, and use digital tools effectively.

Meanwhile, in terms of institutional accessibility, Bahader et al. (2021) identified limited IT infrastructure in Pakistani university libraries as a major institutional barrier and recommended that universities, with government support, upgrade ICT facilities and provide specialized training for library professionals to better assist users. Murithi et al. (2020) also emphasized that insufficient guidance in accessing resources, coupled with difficulties in filtering and navigating databases, further limits students' effective use of e-resources. Bahader also emphasized that librarian-led training can enhance user guidance and improve students' capacity to access and utilize e-resources effectively.

### **Level of Utilization of E-resources**

Electronic resources are academic materials designed to support teaching, learning, and research activities in higher education (Okunoye, 2021). These resources are commonly used by students for writing projects, completing school assignments, and preparing class notes, reflecting the integral role of digital materials in supporting various aspects of academic coursework (Rosales, 2024).

Across the reviewed studies, e-journals, databases and search engines are primarily used to support research activities, curriculum development and self-directed learning. Ali (2020) observed that the use of e-resources significantly enhances teaching effectiveness and research productivity in academic institutions. Similarly, Wadugera and Marasinghe (2025), in their study of library users at the Postgraduate Institute of Management, found that users primarily accessed e-resources to fulfill assignment and research requirements rather than for personal development or skill-building. This suggests that academic necessity remains the main driver of e-resource use. Khan and Tyagi (2025) further emphasized that effective utilization relies not only on students' awareness but also on consistent engagement, underscoring the need for targeted training and initiatives to promote regular use of e-resources.

## **METHODOLOGY**

### ***Research Design***

This study employed a descriptive-correlational research design to examine the levels of awareness, accessibility and utilization of e-resources among selected students at City College of Calapan, as well as to explore the relationships among these variables. This design was chosen based on the recommendation of Bhandari (2021), who highlights its effectiveness for describing variables as they occur naturally and for investigating potential relationships without manipulating them.

### ***Sources of Data***

The primary source of data for this study was the responses gathered from selected students of City College

of Calapan who were enrolled during the 2nd semester of the Academic Year 2025–2026.

**Population of the Study**

The population of this study consisted of all undergraduate students enrolled at City College of Calapan (CCC) during the 2nd semester of Academic Year 2025–2026, with a total of 2,097 students. Since it was not feasible to collect data from the entire population, a sample of 325 students was determined using a 95% confidence level and a 5% margin of error, calculated with the Raosoft Sample Size Calculator. To ensure the proportional representation across academic programs, stratified random sampling was employed, with academic programs serving as the strata. Respondents were then randomly selected within each program according to their proportion of the total population.

**Instrumentation and Validation**

The primary instrument used in this study was a self-developed questionnaire designed to gather data on students’ use of e-resources. To ensure content validity, the instrument was reviewed by experts in library science, research, methodology, and statistics, who evaluated each item’s clarity, relevance, and appropriateness. Their feedback was incorporated into the final version. After approval from the research adviser, a pilot test was conducted. Reliability was assessed using Cronbach’s Alpha, which showed excellent internal consistency for awareness (0.914), and good internal consistency for accessibility (0.897) and utilization (0.855).

**Data Gathering Procedure**

A formal letter was submitted to the College Administrator to request permission to conduct the study among the selected students. Upon approval, the researcher coordinated the schedule for administering the survey. Respondents were chosen using stratified random sampling and the questionnaire was distributed via Google Forms. Before completing the survey, respondents were informed of the study’s purpose and objectives and assured that participation was entirely voluntary. In compliance with the Data Privacy Act of 2012, confidentiality and anonymity were strictly maintained, and no personally identifiable information was collected. Lastly, all data were compiled, encoded and analyzed using appropriate statistical techniques to address the research objectives.

**Statistical Treatment of Data**

The following statistical tools were used:

1. Weighted mean and ranking were used to describe the a) level of awareness of e-resources in terms of knowledge awareness, functional awareness and purpose awareness; b) level of accessibility of e-resources in terms of technical accessibility, institutional accessibility and user accessibility and c) extent of utilization of e-resources in terms of purpose of use, frequency of use and depth of use.
2. Pearson’s r Moment Correlation Coefficient was used to determine the relationship between the level of awareness of e-resources, level of accessibility of e-resources and extent of utilization of e-resources.

**RESULTS AND DISCUSSION**

**1. Level of Awareness of E-Resources**

**Table 1 Level of Awareness of E-Resources**

<i>Scale</i>	<i>Domains</i>	<i>Weighted Mean</i>	<i>Verbal Interpretation</i>	<i>Rank</i>
<i>Awareness of E-Resources</i>	<i>Knowledge Awareness</i>	2.93	<i>High</i>	1
	<i>Functional Awareness</i>	2.75	<i>High</i>	3

	<i>Purpose Awareness</i>	2.86	<i>High</i>	2
<b>OVERALL</b>		<b>2.85</b>	<b>High</b>	

Table 1 presents the overall level of awareness of e-resources among students at City College of Calapan was high, with a composite weighted mean of 2.85. This suggests that, generally, students have a strong understanding of e-resources across the domains of knowledge, functional and purpose awareness. Among the domains, Knowledge Awareness ranked highest, with a weighted mean of 2.93, indicating that students are most familiar with the existence and features of the e-resources available to them. Purpose Awareness followed with a weighted mean of 2.86, showing that students are generally aware of why and how to use these resources strategically for learning and research. Functional Awareness ranked third, with a weighted mean of 2.75, suggesting that while students recognize the tools, there is still further improvement in effectively navigating and applying them for academic tasks.

Generally, the findings highlight that Knowledge Awareness stands out as the strongest domain, reflecting the students confidence in identifying and recognizing available e-resources. This familiarity may be attributed to prior exposure and guidance from instructors and librarians, which helps students understand and utilize the resources that support their academic activities. However, the results also point to areas needing further development, particularly in Functional Awareness and certain aspects of Purpose Awareness, such as using Starbooks to support evidence-based arguments. These findings suggest that students would benefit from additional guidance and training. College librarians can play a crucial role by conducting orientations, demonstrations and hands-on training to help students navigate and use e-resources more effectively, ensuring they fully realize the resources’ academic potential. This study is supported by Ankamah et al. (2022), who noted that awareness enables access to current and reliable information essential for scholarly work. Additionally, Li et al. (2025) emphasized that digital literacy is critical for translating awareness into effective academic application.

**2. Level of Accessibility of E-Resources**

**Table 2 Level of Accessibility of E-Resources**

<i>Scale</i>	<i>Domains</i>	<i>Weighted Mean</i>	<i>Verbal Interpretation</i>	<i>Rank</i>
<i>Accessibility of E-Resources</i>	<i>Technical Accessibility</i>	2.80	<i>High</i>	1
	<i>Institutional Accessibility</i>	2.78	<i>High</i>	2
	<i>User Accessibility</i>	2.55	<i>High</i>	3
<b>OVERALL</b>		<b>2.71</b>	<b>High</b>	

Table 2 shows the students’ level of accessibility of e-resources revealed an overall weighted mean of 2.71, which was “high.” This indicates that students at City College of Calapan generally have a good level of access to electronic resources, which contributes to a positive learning experience by enabling efficient information retrieval, supporting independent learning and enhancing research and academic engagement, although some areas still need improvement. Among the three domains, Technical Accessibility ranked the highest with a weighted mean of 2.80, showing that students can access and use e-resources with minimal technical barriers. Factors such as device availability, connectivity, system

reliability and platform functionality contribute to this ease of use. The institutional accessibility followed as ranked 2, with weighted mean of 2.78, indicating that students can access and appreciate the educational resources and subscription databases provided by the City College of Calapan library. This domain reflects the institution’s support in making e-resources available, ensuring that students have the guidance and services needed to use them effectively. On the other hand, the domain of User Accessibility ranked last, with a weighted mean of 2.55. While it is still rated as “high,” this indicates a need to further enhance user accessibility, particularly in terms of ease of navigating platforms and ensuring they are user-friendly. Providing adequate support and guidance will help the students perform tasks efficiently, reducing confusion and difficulties when using the e-resources.

Generally, the accessibility of e-resources plays a crucial role in their effective utilization. No matter how aware the students are of the existing e-resources, if they experience difficulties navigating the platforms or using the tools, they cannot fully benefit from them. These findings align with previous research indicating that even when digital collections are available, technical, infrastructural and usability challenges can limit effective access (Bosah et al. 2025; Onobrakpor et al., 2023; Kieti et al., 2022). Enhancements such as structured resources, clear metadata and supportive tools can further improve accessibility and maximize the benefits of e-resources (Mosha, 2025; Jiyane & Nevondo, 2025).

**3. Level of Utilization of E-Resources**

**Table 3 Level of Utilization of E-Resources**

<i>Scale</i>	<i>Domains</i>	<i>Weighted Mean</i>	<i>Verbal Interpretation</i>	<i>Rank</i>
<i>Utilization of E-Resources</i>	<i>Purpose of Use</i>	2.49	<i>Low</i>	2
	<i>Frequency of Use</i>	2.00	<i>Low</i>	3
	<i>Depth of Use</i>	2.60	<i>High</i>	1
<i>OVERALL</i>		2.37	<i>Low</i>	

As shown in table 3, the level of utilization of e-resources was low, with a composite weighted mean of 2.37. This indicates that, in general, students at City College of Calapan demonstrate limited utilization of available electronic resources. Among the domains, Depth of Use obtained the highest weighted mean of 2.60, interpreted as High, and ranked first. This suggests that although students may not frequently use e-resources, those who do tend to utilize them more thoroughly or meaningfully. On the other hand, Purpose of Use garnered a weighted mean of 2.49, interpreted as Low, ranking second. This implies that students may not be maximizing e-resources for diverse academic purposes such as research, assignments or independent learning. Lastly, Frequency of Use received the lowest weighted mean of 2.00, also interpreted as Low, ranking third. This finding indicates that students do not access or use e-resources regularly.

Overall, the results suggest that while students may demonstrate adequate depth when they engage with e-resources, the limited frequency and purpose-driven use contribute to the generally low level of utilization. This may imply a need for enhanced awareness programs, training or improved access to encourage more consistent and purposeful use of e-resources among students. Moreover, study of Cahyono and Naningrum (2024) highlights that the effectiveness of e-resources depends on regular use, which improves access to current and credible literature and enhances learning efficiency and research quality. In addition, Dlamini & Tsabedze (2025), stated that to address these issues, orientation programs

and information literacy workshops have been recommended to increase students’ proficiency and utilization of e-resources.

**4. Relationship Between the Students’ Level of Awareness of E-resources and the Level of Accessibility of E-resources**

**Table 4 Relationship Between the Students’ Level of Awareness of E-resources and the Level of Accessibility of E-resources**

<i>Independent</i>	<i>Dependent</i>	<i>Pearson’s r<sup>a</sup></i>	<i>p-value</i>	<i>Decision</i>	<i>Interpretation<sup>b</sup></i>
<i>Awareness</i>	<i>Accessibility</i>	.491 (moderate)	<.001	<i>Reject H<sub>0</sub></i>	<i>Significant</i>

As indicated in Table 4, the relationship between the students’ level of awareness of e-resources and the level of accessibility of e-resources was analyzed using Pearson’s correlation coefficient. The analysis yielded a correlation value of  $r = 0.491$ , which indicates a moderate positive relationship between the two variables. The  $p$ -value  $< .001$ , thus leading to the rejection of the null hypothesis  $H_0$ . The result shows that this relationship is statistically significant, confirming that higher awareness of e-resources is associated with better accessibility. The findings implied that awareness of e-resources such as knowledge, functional and purpose awareness was positively associated with accessibility, including technical, institutional and user accessibility. Students with higher awareness were more likely to access the e-resources effectively, supporting better academic performance, independent learning and information literacy.

This study reinforces the findings of Osenghale (2023) and Mahalingan and Sivakumar (2024) which indicated a positive relationship between awareness and accessibility of e-resources. As awareness increases, accessibility tends to improve, facilitating more effective utilization of these digital materials.

**5. Relationship Between the Students’ Level of Accessibility of E-resources and the Level of Utilization of E-resources**

**Table 5 Relationship Between the Students’ Level of Accessibility of E-resources and the Level of Utilization of E-resources**

<i>Independent</i>	<i>Dependent</i>	<i>Pearson’s r<sup>a</sup></i>	<i>p-value</i>	<i>Decision</i>	<i>Interpretation<sup>b</sup></i>
<i>Accessibility</i>	<i>Utilization</i>	.375 (weak)	<.001	<i>Reject H<sub>0</sub></i>	<i>Significant</i>

As illustrated in Table 5, there exists a weak yet statistically significant positive relationship between the students’ level of accessibility of e-resources and their extent of utilization, with a Pearson’s  $r$  value of .375. The  $p$ -value  $< .001$  confirms the statistical significance of this relationship, leading to the rejection of the null hypothesis. This indicates that students with greater access to e-resources through better technical support, institutional availability or personal user access have tended to make more frequent and effective use of these resources, even though the overall strength of the relationship is weak. The findings suggest that students’ access to e-resources, including technical, institutional, and user accessibility is closely linked to their utilization of these resources. When accessibility is higher, students tend to engage with e-resources more frequently, use them for diverse academic purposes and apply them more

effectively in their studies. This highlights the importance of providing robust access to digital resources to support meaningful academic use.

This is supported by the study of Osinulu (2020) highlighting that accessibility and the utilization of e-resources have a strong relationship. Limited access, caused by issues such as poor internet connectivity, insufficient training and technical barriers, can hinder the actual usage of e-resources. This underscores the importance of improving both infrastructure and support mechanisms to ensure that students can effectively access and utilize e-resources for academic purposes.

**6. Relationship Between the Students’ Level of Awareness of E-resources and the Level of Utilization of E-resources**

**Table 6 Relationship Between the Students’ Level of Awareness of E-resources and the Level of Utilization of E-resources**

<i>Independent</i>	<i>Dependent</i>	<i>Pearson’s r<sup>a</sup></i>	<i>p-value</i>	<i>Decision</i>	<i>Interpretation<sup>b</sup></i>
<i>Awareness</i>	<i>Utilization</i>	<i>.359 (weak)</i>	<i>&lt;.001</i>	<i>Reject H<sub>0</sub></i>	<i>Significant</i>

As revealed in Table 14, there is a weak but statistically significant positive relationship between the students’ level of awareness of e-resources and the extent of their utilization with the Pearson’s r value of .359. A p-value of < .001 indicates that this relationship is statistically significant, leading to the rejection of the null hypothesis. This suggests that students with higher awareness of available e-resources tend to use them more, although the increase in utilization is moderate. The findings further imply that awareness of e-resources, encompassing aspects such as knowledge, functional and purpose awareness, is associated with utilization behaviors including the purpose of use, frequency of use, and depth of use. In other words, students who are more knowledgeable about available e-resources, understand how to use them effectively and can recognize their relevance are more likely to access these resources frequently, use them for meaningful academic purposes and engage with them more deeply in their studies. These findings are aligned with the Ashaver et al. (2024) and Kumar (2023) study, which found a positive correlation between awareness and utilization of e-resources, with higher awareness associated with more frequent and extensive use for academic and research purposes.

**7. Proposed Action Plan**

**Table 6  
Action Plan**

<b>Areas of Concern</b>	<b>Objectives</b>	<b>Strategies/ Activities</b>	<b>Person Involved</b>	<b>Time Frame</b>	<b>Budget</b>	<b>Indicators of Success</b>
Awareness of E-resources	Enhance the students knowledge, functional skills, and purpose-driven	- A continuous e-resource awareness program will be implemented	College Librarian, Library Staff, College Administrator, and Students	-Every semester	₱20,000 annually (Library Operational Fund for printing, certificates,	95% participation and engagement, with improved awareness of

	understanding of e-resources	through semester-start orientation on STARBOOKS and OERs, supported by student-led tutorials and a weekly E-Resource Bulletin via the library Google Site and email to enhance students' knowledge, navigation skills, and academic use of e-resources.			materials, digital promotion)	STARBOOKS and OERs.
Accessibility of E-resources	Ensure all students can reliably access and use e-resources	-A support system will be implemented through continuous monitoring of platform performance, regular student feedback collection, and provision of access guides, FAQs, and tutorial videos, complemente	College Librarian, IT Personnel, Library Staff, and Students	Monthly feedback review, weekly updates, and periodic micro-training sessions.	₹30,000 annually (Library Fund / ICT Support Fund for website maintenance, video production and system monitoring tools)	95% system availability, satisfaction, independent access, and reduced technical issues.

		d by periodic micro-training sessions to enhance students' skills in navigating and using e-resources.				
Utilization of E-resources	Increase the frequency, depth, and purpose-driven use of e-resources	-An enhancement program will be implemented through continuous monitoring of students' e-resource usage, integration of e-resources in faculty-led activities such as workshops and case-based learning, and a recognition system for students who demonstrate consistent and meaningful use of STARBOOKS and Open Educational Resources	College Librarian, Faculty Members, Program Heads, IT Personnel and Students	-Ongoing monitoring, midterm and end-of-semester workshops, and semester-based recognition	₱25,000 annually (Library Fund for certificates, small incentives, workshop materials)	95% increase in usage, outputs, and participation, resulting in improved utilization of e-resources

		(OERs).				
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## CONCLUSIONS

Based on the findings, the study drew the following conclusions:

1. Students are generally aware of e-resources such as STARBOOKS and Open Educational Resources (OERs), but their understanding is mostly limited to recognition rather than deeper functional use. This suggests the need to further strengthen their ability to fully maximize these platforms
2. Students have generally high accessibility to e-resources, supported by reliable technical infrastructure and institutional provisions. However, user accessibility such as clear instructions and guidance for navigation, remains an area needing improvement.
3. The extent of utilization of e-resources is generally low, particularly in terms of frequency and purpose of use. This indicates that even if students are aware of and can access these resources, they do not consistently integrate them into their academic activities.
4. There is a positive relationship between awareness and accessibility, suggesting that students with greater knowledge of e-resources are more likely to access them effectively.
5. Accessibility and awareness positively influence utilization, but the weak strength of these relationships suggests the need for strategies to increase engagement, integrate e-resources into curriculum and better provide consistent support.
6. Students demonstrate meaningful use and critical engagement with e-resources but a synthesis into original academic outputs remains limited.
7. Implementing the proposed action plan is recommended to further improve and enhance students' awareness, accessibility, and utilization of e-resources at City College of Calapan (CCC).

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