

E-Resource Utilization and Information Literacy: Patterns, Purposes, and Problems among Undergraduate Students in a Private Higher Education Institution

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ABSTRACT

This study examined the electronic information resource (e-resource) utilization patterns, explicit academic motivations, and localized navigation barriers among undergraduate students at a private higher education institution (HEI) in the Philippines, to provide an empirical basis for optimizing digital library investments. Using a descriptive, retrospective document-analysis design, the study analyzed an existing institutional dataset consisting of 311 archived survey questionnaires collected during the 2025–2026 academic year across sixteen multidisciplinary academic programs. The findings revealed a pronounced discovery-use gap and collection polarization: the Philippine E-Journals (PEJ) platform accounted for the majority of student engagement (51.61%), well ahead of Google Scholar (30.87%) and EBSCOhost (7.40%). Undergraduate database interaction was largely transactional, driven primarily by compliance requirements for research papers (70.00%) and individual assignments (56.77%), and 64.52% of respondents rated the available collection as only “moderately relevant” to their research needs. A further, critical paradox emerged: although students reported high confidence in their baseline information technology (IT) skills, they encountered a substantial barrier when filtering search results, with the presence of irrelevant information identified as the most pervasive obstacle to effective database use. This difficulty was compounded by slow campus internet connectivity, while 56.13% of respondents had never received formal library training, and 90.00% left the program-adequacy item unanswered—a pattern consistent with students being unable to evaluate a service they had never experienced. The study concludes that substantial financial investment in commercial database subscriptions does not automatically translate into meaningful student engagement without structured instructional intervention. It is recommended that the institution establish a mandatory, credit-bearing Information Literacy Support (ILS) program, reallocate its e-resource budget based on actual usage data, formally embed targeted database tasks into course syllabi, and provide a dedicated, high-bandwidth Wi-Fi connection for the library’s electronic portals.

Keywords: Electronic Resource Utilization, Information Literacy Support, Private HEI, Database Noise, Platform Abandonment, Discovery-Use Gap, Retrospective Analysis

1. INTRODUCTION

Across the global higher education landscape, academic libraries have shifted decisively away from print-centered models toward integrated digital ecosystems. Electronic databases, digital repositories, and open-access portals now serve as the primary foundations for undergraduate knowledge acquisition and scholastic discovery. In pursuit of this shift, modern academic libraries commit substantial financial resources to maintaining subscriptions to these networks, aiming to provide students with uninterrupted, borderless access to academic literature.

However, a persistent institutional problem has surfaced alongside this technological transition: the mere presence of high-cost digital subscriptions does not automatically translate into meaningful student engagement or improved information literacy. Academic institutions in developing countries frequently encounter a frustrating paradox in which heavily funded e-resources remain underutilized or poorly navigated by the very students they were designed to support.

This issue manifests as a distinct operational concern at a private higher education institution in the Philippines, where a clear gap exists among student needs, technological infrastructure, and formalized instructional guidance. Undergraduates face specific challenges, ranging from unreliable on-campus internet connectivity and limited workspace availability to a lack of formal search-navigation training, contributing to widespread platform abandonment.

To address these gaps systematically, this study examines the e-resource utilization profiles, explicit search purposes, and localized navigation barriers among undergraduate users at the institution. The investigation is intended to provide the university library administration with actionable insight for designing a scalable, high-impact Information Literacy Support (ILS) program that bridges the gap between commercial database capabilities and undergraduate research proficiency, by first establishing a comprehensive empirical baseline.

Literature Review

The integration of electronic resources into academic libraries has considerably simplified information retrieval while simultaneously introducing new navigation challenges for undergraduate students. Across higher education institutions worldwide, digital databases are widely recognized as essential tools for cultivating research proficiency and supporting coursework (Ankrah & Atuase, 2018).

Despite these advantages, the literature consistently shows that platform acceptance depends heavily on both individual search efficacy and institutional infrastructure readiness. Although learners generally value the speed and convenience of digital databases, unmediated exposure to large, undifferentiated search indices readily produces information overload and related difficulties that undermine effective retrieval, particularly among users who have not received formal search training (Bawden & Robinson, 2009).

This issue is especially pronounced in developing academic contexts, where infrastructure constraints intersect with uneven digital-literacy levels among students, often resulting in inconsistent or superficial database use.

Within Philippine private higher education specifically, these navigation barriers are compounded by technical friction and systemic instructional gaps. Local studies confirm that although academic libraries have moved quickly toward hybrid service models in recent years, institutional readiness and structured user-orientation frameworks have generally lagged behind software procurement (Esposito-Betan & Fresnido, 2022). Researchers have observed that unstable campus internet connections, insufficient physical workstations, and the absence of intentional keyword-search training continue to hinder access, pushing many undergraduates toward generic open-access web searches rather than specialized library databases (Malabanan et al., 2021).

A significant proportion of students also struggle to evaluate the relevance of retrieved content, leading to considerable frustration. Because formal information literacy orientation is rarely mandatory across academic programs, most private university students function as largely self-taught searchers, which constrains their academic performance and diminishes the institutional return on investment for costly database subscriptions (Esposito-Betan & Fresnido, 2022).

Conversely, recent Philippine evidence indicates that where structured information literacy instruction and librarian interaction are present, both are significantly and positively associated with students' research skills and academic achievement, underscoring instructional gaps—rather than resource availability—as the central lever for improving e-resource utilization (Muti & Geroy, 2025).

Research Questions

1. What is the demographic profile of the respondents in terms of academic program/major track and gender?
2. What are the electronic resource utilization patterns of the undergraduate students regarding:
 - 2.1 specific online databases and platforms utilized (e.g., Philippine E-Journals, EBSCOhost, Perlego); and
 - 2.2 frequency of database access?
3. What are the primary academic purposes or motivations behind the students' use of electronic databases, and how do students perceive the overall relevance of the available collection?
4. What is the perceived severity of the problems faced by undergraduate students in accessing electronic resources along the following dimensions:
 - 4.1 technical infrastructure (on-campus internet connectivity, library workstation availability);
 - 4.2 technical and information literacy skills; and
 - 4.3 data-filtering and content relevance?
5. How do the undergraduate students evaluate the delivery and adequacy of the library's formal Information Literacy Support (ILS) frameworks?
6. Based on the findings of the study, what scalable Information Literacy Support (ILS) program can be proposed to optimize digital library investments and improve student research proficiencies?

2. METHOD

Research Design

The study employed a descriptive, retrospective document-analysis design to systematically examine the patterns, purposes, and problems associated with e-resource utilization and information literacy support among undergraduate students, using an existing institutional dataset of archived survey responses.

Respondents and Sampling Technique

From the 4,086 undergraduate students enrolled across all academic programs at the institution for Academic Year 2025–2026, the study drew respondents through a combination of purposive and convenience sampling. The minimum required sample size was determined using the Raosoft sample size calculator, based on a total population of 4,086, a 95% confidence level, a 50% response distribution, and a 5% margin of error, yielding a recommended minimum sample of 351 respondents. Of the questionnaires distributed, 311 were completed and returned, constituting the final sample used for analysis. This sample corresponds to a margin of error of approximately 5.34% at the 95% confidence level, which was deemed acceptable for a descriptive study of this scope.

Instrumentation

Data were drawn from a structured, five-part survey questionnaire that underwent content validation and reliability review prior to its original administration:

- Part I: Usage of E-Resources
- Part II: Purpose of Using E-Resources
- Part III: Perceived Relevance and Value
- Part IV: Access Challenges and Problems
- Part V: Information Literacy Support (ILS)

Data Collection Procedure

Prior to data collection, permission to conduct the original study was secured from the concerned academic offices, and ethical clearance was obtained from the institution's Research Ethics Board. Checklist-type questionnaires were administered to identified respondents across the different academic programs, with respondents briefed on the purpose of the study and their rights as participants prior to completion. Completed questionnaires were collected, checked for completeness, and encoded for subsequent statistical analysis, forming the archived dataset used in the present retrospective analysis.

Data Analysis

The archived data were analyzed using descriptive statistics, specifically frequency distribution and percentage computation, to summarize the patterns, purposes, and problems of e-resource utilization and information literacy among the respondents. These tools allowed the researcher to present the data clearly and to identify trends across the different variables and academic programs included in the study.

Compliance with Ethical Standards

This study adhered to the ethical standards required for research involving human participants. The original research proposal was submitted to the concerned offices of the institution for review and approval prior to implementation, and certification was secured from the University Academic-Research Ethics Board (UA-REB) to ensure that the study's design, procedures, and instruments complied with established ethical guidelines, including the protection of respondents' rights, confidentiality, and informed consent.

Limitations of the Study

First, the sampling approach constrains the generalizability of the findings. The actual sample of 311 respondents fell slightly short of the Raosoft-recommended minimum of 351, resulting in a marginally higher margin of error (5.34% instead of 5%).

Second, the study was conducted at a single private higher education institution, which limits the external validity of the findings. Institutional factors such as subscribed databases, library systems, and technological infrastructure are specific to this institution and may not be replicated elsewhere; the results may therefore not generalize to institutions with different resources and student demographics.

Third, the research instrument and design limit the depth of the data collected. The checklist-type questionnaire, analyzed through frequency counts and percentages, captures general patterns of e-resource use but not the underlying reasons or context behind student responses. While the instrument underwent content validation, it did not undergo formal reliability testing. Additionally, as a descriptive, cross-sectional, self-reported study, it cannot establish causal relationships and remains subject to potential social desirability bias.

AI Declaration

The author used artificial intelligence (AI)-assisted writing tools solely to improve sentence construction, grammar, clarity, and readability of the manuscript. The AI tools were not used to generate, analyze, interpret, or fabricate the research data, findings, or conclusions. The author reviewed, verified, and assumed full responsibility for the final content of the manuscript.

3. RESULTS

Table 1

Distribution of Respondents by Academic Program

Academic Program	Frequency (f)	Percentage (%)
BS Accountancy/AIS	56	18.65
BS Information Technology	39	12.54
BS Civil Engineering	34	10.93
BS Nursing	26	8.36
BS Tourism Management	24	7.72
BS Architecture	21	6.75
BS Psychology	20	6.43
BS Hospitality Management	15	4.82
BEED/BSED	12	3.86
BS Human Services	11	3.54
BS Criminology	11	3.54
AB Communication	9	2.89
Computer Engineering	9	2.89
BS Pharmacy	8	2.57
BSBA Marketing Management	6	1.93
BS Industrial Engineering	4	1.29
Total	311	100.00

Table 1 presents the distribution of respondents across the institution's sixteen academic programs. Respondents were most heavily represented by BS Accountancy/AIS ($f = 56$, 18.65%), followed by BS Information Technology ($f = 39$, 12.54%) and BS Civil Engineering ($f = 34$, 10.93%). The remaining respondents were distributed across the other thirteen programs, ranging from BS Nursing (8.36%) and BS Tourism Management (7.72%) down to BS Industrial Engineering, which recorded the smallest share ($f = 4$, 1.29%). This spread indicates that while the sample achieved broad representation across the institution's program offerings, engagement was concentrated among business, technology, and

engineering-related tracks—a pattern that should be considered when generalizing the findings across all disciplines.

Table 2

Distribution of Respondents by Gender

Gender	Frequency (f)	Percentage (%)
Female	170	54.84
Male	112	36.13
No Response	29	9.03
Total	311	100.00

Table 2 shows the gender distribution of the respondents. Female students comprised the majority of the sample ($f = 170$, 54.84%), followed by male students ($f = 112$, 36.13%). Notably, 29 respondents (9.03%) did not disclose their gender, a nonresponse rate that should be taken into account when interpreting any gender-related patterns elsewhere in the findings.

Table 3

E-Resource Platforms Utilized by Students for Academic Work

Database / Platform	Frequency (f)	Percentage (%)
Philippine E-Journals (PEJ)	160	51.61
Google Scholar	96	30.87
EBSCOhost	23	7.40
Perlego	14	4.50
ResearchGate	3	0.96
AI Tools (General)	3	0.96
Google Classroom	1	0.32
Dola	1	0.32
Tourism-Specific Databases	1	0.32
NIH / PubMed	1	0.32
ChatGPT	1	0.32
None	1	0.32

Table 3 details the specific e-resource platforms students reported using for academic work, an item that allowed multiple responses. The Philippine E-Journals (PEJ) was the dominant platform, cited by more than half of the respondents ($f = 160$, 51.61%). Google Scholar was the second most utilized resource, cited by nearly a third of respondents ($f = 96$, 30.87%), followed at a considerable distance by EBSCOhost ($f = 23$, 7.40%) and Perlego ($f = 14$, 4.50%). A long tail of platforms—including ResearchGate, general

AI tools, Google Classroom, PubMed, and ChatGPT—were each cited by three or fewer respondents ($\leq 0.96\%$), and a single respondent reported using no e-resource platform at all. This pattern indicates heavy reliance on one locally curated platform and one general-purpose academic search engine, with markedly lower and highly fragmented engagement across the institution's other subscribed and open-access databases.

Table 4

Primary Academic Purposes and Motivations behind E-Database Access

Academic Purpose / Motivation	Frequency (f)	Percentage (%)	Rank
Research Papers	217	70.00	1
Individual Assignments	176	56.77	2
Group Projects	69	22.26	3
Class Discussions	46	14.84	4
Others	2	0.65	5

Table 4 summarizes the primary academic purposes that motivate students' use of e-databases. Research papers emerged as the leading motivation, cited by 70.00% of respondents ($f = 217$), followed by individual assignments ($f = 176$, 56.77%). Group projects ($f = 69$, 22.26%) and class discussions ($f = 46$, 14.84%) were considerably less common drivers of database use, while a small number of respondents ($f = 2$, 0.65%) cited other, unspecified purposes. These results suggest that database access is concentrated around graded, individually accountable requirements rather than collaborative or open-ended academic exploration.

Table 5

Frequency of Accessing E-Resources

Frequency of Access	Frequency (f)	Percentage (%)
Daily	44	14.15
2–3 times a week	79	25.40
Once a week	44	14.15
Monthly	84	27.01
Rarely/Never	60	19.29
Total	311	100.00

Table 5 presents how frequently students access e-resources. Access was fairly dispersed across the frequency categories: the largest proportion of respondents accessed resources monthly ($f = 84$, 27.01%), followed by those accessing resources two to three times a week ($f = 79$, 25.40%). Daily access and once-a-week access were each reported by 14.15% of respondents ($f = 44$ each), while nearly one-fifth of the sample ($f = 60$, 19.29%) reported rarely or never accessing e-resources. This distribution indicates that

frequent, habitual database use is not yet the norm among undergraduates, with a substantial segment of the population engaging with e-resources only sporadically or not at all.

Table 6

Perceived Overall Relevance of Available Electronic Databases

Perceived Relevance Level	Frequency (f)	Percentage (%)
High: The resources consistently meet my research needs	90	29.03
Moderate: The resources are helpful but sometimes lack specific content	200	64.52
Irrelevant: The resources do not align with my field of study	8	2.58
Do not know: I am not familiar enough with the content to judge	9	2.90
No Response	4	0.97
Total	311	100.00

Table 6 reports students' perceived overall relevance of the available electronic databases. Most respondents rated the resources as only moderately relevant, describing them as helpful but sometimes lacking specific content ($f = 200$, 64.52%). Less than a third of respondents ($f = 90$, 29.03%) rated the resources as highly relevant, consistently meeting their research needs, while a small minority found the resources irrelevant to their field of study ($f = 8$, 2.58%) or felt unable to judge their relevance due to unfamiliarity with the content ($f = 9$, 2.90%); four respondents (0.97%) did not answer this item. The concentration of responses in the "moderate" category suggests that although the library's e-resource collection is broadly useful, it does not yet fully address the specialized research needs of many students across the institution's sixteen academic programs.

Table 7

Perceived Severity of Problems Faced in Accessing Electronic Resources

Problem Area / Dimension	1 (Not Problem)	2 (Minor Problem)	3 (Moderate Problem)	4 (Major Problem)
4.1 Technical Infrastructure				
a. Insufficient library workstations	102	98	70	29
b. Slow or unreliable internet connectivity	66	99	83	59
4.2 Technical and Literacy Skills				
a. Lack of information technology (IT) skills	116	107	60	23
4.3 Data-Filtering and Relevance	83	112	120	33

The data measuring these user-friction metrics reveal an intricate combination of infrastructure bottlenecks and analytical hurdles. Under the technical infrastructure dimension, slow or unreliable internet connectivity emerged as the single most critical disruption on campus: a combined 142 students flagged connectivity as a substantial issue, comprising 83 who rated it a Moderate Problem and 59 who rated it a Major Problem. By contrast, insufficient library workstations proved to be a smaller barrier, with most students rating it as either Not a Problem ($f = 102$) or a Minor Problem ($f = 98$), suggesting that many undergraduates rely on personal mobile devices or laptops rather than library computers to access e-resources.

Under technical and literacy skills, the data reveal notably high self-reported confidence: 116 respondents indicated that a lack of baseline IT skills was Not a Problem at all, and 107 considered it only a Minor Problem, leaving a combined 83 respondents who felt moderately or severely deficient in this area.

This technological confidence, however, stands in contrast to the results for data-filtering and relevance. A large cluster of 120 respondents rated the presence of irrelevant information within databases as a Moderate Problem, with an additional 33 rating it a Major Problem. This discrepancy points to a clear analytical paradox: while students feel comfortable navigating web browsers and search interfaces (reflecting low general IT barriers), they encounter a considerable obstacle when constructing effective search strategies or filtering large result sets to locate high-quality, full-text sources.

Table 8

Evaluation of Library Information Literacy Support Frameworks

Evaluation Metric Indicator	Frequency (f)	Percentage (%)
Receipt of Formal Training/Orientation		
Yes	129	41.48
No	175	56.27

Evaluation Metric Indicator	Frequency (f)	Percentage (%)
No Response	7	2.25
Perceived Adequacy of Current ILS (Sub-sample)		
Adequate	20	6.43
Inadequate	12	3.86
No Response / Not Applicable	279	89.71
Total Baseline	311	100.00

Table 8 highlights a significant gap in instructional delivery across the institution. Regarding the direct receipt of formal training or orientation, a clear majority of participants ($f = 175$, 56.27%) reported that they had never received formal training on how to navigate the library's electronic information resources; only 129 respondents (41.48%) confirmed having gone through a library orientation, and 7 (2.25%) left the item blank. This widespread absence of instruction helps explain the high data-filtering frustration documented in Table 7.

The data on perceived adequacy of the current ILS reveal an even more pronounced pattern of non-response. Of the full 311-respondent baseline, only 32 individuals answered this sub-question, with 20 rating the support as adequate and 12 rating it as inadequate; a substantial majority ($f = 279$, 89.71%) skipped the item entirely. This extreme non-response rate strongly suggests that because most undergraduates have never interacted with a formalized library literacy program, they were simply unable to evaluate its institutional quality or adequacy—reinforcing the conclusion that private HEI students operate predominantly as self-taught searchers and confirming the need for scalable, mandatory, syllabus-integrated information literacy instruction.

4. DISCUSSION

This section discusses the findings in relation to each research question, drawing on the 2025–2026 archived dataset to surface a multi-layered behavioral and structural picture of the institution's digital library ecosystem.

Demographic Profile

The respondent profile (Tables 1 and 2) shows that engagement with the survey, and by extension with the library's e-resources, was concentrated among students from business, information technology, and engineering-related programs, with BS Accountancy/AIS, BS Information Technology, and BS Civil Engineering together accounting for over 42% of the sample. Female students made up the majority of respondents (54.84%), consistent with typical enrollment patterns at the institution. Because engagement was not evenly distributed across all sixteen programs, the discovery-use gap discussed below may be more or less pronounced in programs with smaller representation in this dataset, a consideration that should inform how the proposed ILS program is scaled across disciplines.

Utilization Patterns: Platforms and Frequency

The data on platform selection (Table 3) show a marked polarization in usage. The Philippine E-Journals (PEJ) commands the majority of student engagement (51.61%), well ahead of Google Scholar (30.87%) and considerably ahead of EBSCOhost (7.40%) and Perlego (4.50%). This hyper-localized preference is consistent with local research showing that when institutions establish hybrid infrastructure, student preferences often gravitate toward familiar, contextually specific, or faculty-mandated domestic indexes (Malabanan et al., 2021). The comparatively low penetration of subscribed international databases such as EBSCOhost and Perlego suggests underutilization of these commercial licenses relative to their cost, which has direct implications for the institution's return on investment in digital collections (Esposito-Betan & Fresnido, 2022).

Frequency of access (Table 5) further nuances this picture: while roughly 40% of students access e-resources at least two to three times a week, a combined 46% access resources only monthly or rarely/never. Infrequent access is consistent with the transactional, deadline-driven usage pattern discussed below and suggests that, for a substantial share of the student body, e-resource engagement is episodic rather than habitual.

Purposes, Motivations, and Perceived Relevance

Evaluating the academic drivers of use (Table 4) confirms that student database interaction is predominantly transactional and compliance-driven. The heavy concentration of usage toward research papers (70.00%) and individual assignments (56.77%), relative to collaborative formats such as group projects (22.26%) or class discussions (14.84%), supports the broader assertion that undergraduates treat digital databases as narrowly targeted academic utility tools rather than as environments for open-ended intellectual exploration (Ankrah & Atuase, 2018). This goal-driven pattern of information-seeking behavior directly shapes how students perceive the overall relevance of the available collection (Table 6): because their queries are dictated by narrow, immediate course requirements, a majority of respondents (64.52%) rated the library's collection as only "moderately relevant." This indicates that while the currently subscribed platforms are broadly useful, they often fail to provide the specialized or granular subject-specific depth required across all of the institution's major programs.

Access Problems: Infrastructure, Skills, and Data-Filtering

The core operational challenge facing the institution becomes clear when the access-problem data (Table 7) are read alongside the information literacy findings (Table 8). Students reported high confidence in their basic technological competencies, with most indicating that a lack of baseline IT skills was not an obstacle. This technical comfort, however, does not extend to database mechanics: the presence of irrelevant information within databases was flagged as a substantial, widespread bottleneck (120 Moderate Problems, 33 Major Problems). This contrast points to a critical analytical insight—students are proficient digital natives when it comes to handling interfaces, but many experience considerable difficulty extracting refined, high-quality, full-text results from scholarly search systems without prior instruction (Bawden & Robinson, 2009). This structural issue is compounded by local infrastructure realities: because

students appear to bypass library workstations in favor of personal laptops and mobile devices (as suggested by the comparatively low severity ratings for workstation availability), unreliable Wi-Fi directly disrupts active research sessions and likely contributes to premature platform abandonment (Malabanan et al., 2021).

Evaluation of Information Literacy Support

Most critically, the fact that 56.13% of the student body has never received formal information literacy instruction, paired with a striking 90.00% non-response rate on the program-adequacy item, indicates that the majority of undergraduates at this private HEI function as largely self-taught searchers (Esposito-Betan & Fresnido, 2022). This uninstructed, self-directed pattern of searching plausibly explains the severe data-filtering difficulties documented under RQ4. It also stands in contrast to evidence from other Philippine institutions where structured information literacy instruction and librarian interaction are positively associated with stronger research skills and academic performance (Muti & Geroy, 2025), reinforcing that the absence of formal instruction—rather than any deficiency in student aptitude or in the library’s collection—is the most direct explanation for the discovery-use gap identified in this study.

Conclusion

Based on the empirical evidence drawn from the 2025–2026 institutional dataset, and organized in relation to the study’s research questions, this study concludes the following:

Respondents were drawn from across all sixteen academic programs at the institution, though engagement was concentrated among business, information technology, and engineering-related tracks (RQ1); any resulting program-level differences in e-resource use should be examined further before the proposed interventions are scaled institution-wide.

A distinct structural gap exists between resource discovery and resource use within the institution’s digital library platform (RQ2). Despite investment in a range of commercial database subscriptions, student usage remains heavily concentrated on a single, locally curated index—the Philippine E-Journals—supplemented mainly by Google Scholar, with substantially lower and often only monthly or occasional engagement with the institution’s other subscribed international databases. This suggests that the breadth and depth of available e-resources remain significantly underutilized relative to institutional investment.

Student database use is predominantly transactional and compliance-driven rather than exploratory, concentrated on research papers and individual assignments (RQ3), and this narrow pattern of engagement helps explain why the majority of students rate the available collection as only moderately relevant to their needs.

While undergraduate students demonstrate a high degree of technical comfort with digital devices and platforms, this familiarity does not translate into the foundational, strategic information literacy competencies necessary for effective academic research (RQ4). Many students lack the skills to construct effective search queries, apply advanced filtering techniques, and critically distinguish high-quality

scholarly literature from irrelevant or low-value results, revealing a clear gap between technical fluency and information literacy competence—one that is compounded by unreliable campus internet connectivity.

The institution's delivery of Information Literacy Support (ILS) remains under-integrated into the academic experience, functioning as an optional activity rather than a universal component of the curriculum (RQ5). As a result, more than half of the student population proceeds through their academic programs without formal instruction in information literacy, contributing to platform abandonment and a diminished return on the institution's digital library investments.

Taken together, these findings underscore the need for a more structured, mandatory approach to information literacy instruction to bridge the gap between resource availability and effective student utilization—the basis for the scalable ILS program proposed in response to RQ6 below.

Recommendations

In direct response to RQ6, and to bridge the gap between commercial database capabilities and undergraduate research proficiency identified above, the following recommendations are proposed:

1. Establish a Mandatory, Credit-Bearing Information Literacy Program

The University Library, in coordination with the Vice President for Academic Affairs, should convert library orientation from an optional activity into a mandatory, credit-bearing course (e.g., a one-unit module embedded in a general education or research subject). This program should focus on practical skills such as constructing effective search keywords, using Boolean operators, and applying database filters. Making this training compulsory for all students directly addresses the widespread difficulty in locating relevant, high-quality research materials documented under RQ4 and RQ5.

2. Embed Database Use into Course Requirements

Academic deans and program chairs—particularly in high-enrollment programs such as Accountancy, Information Technology, and Civil Engineering—should work with library staff to incorporate specific database use into course syllabi. Rather than allowing students to default to general internet searches, course requirements should specify the use of licensed platforms such as EBSCOhost and Perlego for research assignments. This would encourage habitual use of the university's paid subscriptions, addressing the underutilization identified under RQ2, and reduce reliance on unvetted online sources.

3. Reallocate the E-Resource Budget Based on Actual Usage Data

The University Librarian should use the utilization data from this study to inform future budget decisions. Subscriptions to consistently underused international database bundles should be reviewed for reduction or elimination, while funding should be redirected toward high-demand

local platforms such as the Philippine E-Journals, as well as specialized databases suited to the institution's largest academic programs. This ensures that library spending reflects the actual usage patterns documented under RQ2 and RQ3.

4. Improve Technical Access and Mobile Convenience

The Information Technology Department should provide a dedicated, high-speed Wi-Fi connection for accessing the library's e-resource platforms, directly addressing the connectivity issues identified as a major barrier under RQ4. In addition, the library should install simple visual guides and QR codes in study areas and lounges to allow students to quickly access e-resources using personal devices, improving accessibility and convenience for the many students who appear to favor their own devices over library workstations.

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