

## **Leveraging ICT System User Utilization Experiences to Improve Library Services for Virtual and Distance Learners at Byte Size College in Botswana**

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### **Abstract**

Improving library services for virtual and distance learners requires understanding how users interact with ICT systems to ensure accessibility, inclusivity, and academic support. At Byte Size College in Botswana, limited ICT adoption, unreliable connectivity, and low digital literacy have contributed to underutilization of library services and a 5% annual attrition rate among students. This study sought to evaluate how virtual and distance learners utilize ICT systems and how their utilization experiences inform the enhancement of ICT-enabled library services. The Unified Theory of Acceptance and Use of Technology (UTAUT) guided the study, emphasizing performance expectancy, effort expectancy, social influence, and facilitating conditions as determinants of ICT adoption. The study employed a mixed methods approach with a descriptive survey design. The target population comprised library directors, staff, and distance learners, with a sample of 172 respondents selected through purposive, census, and random sampling. Data were collected using questionnaires, interviews, and document analysis. Reliability was confirmed through Cronbach's alpha ( $>0.7$ ), while validity was established by expert review. Quantitative data were analyzed using SPSS descriptive statistics, and qualitative data were thematically analyzed. Findings showed learners' ICT utilization experiences were moderately positive but inconsistent, with challenges in navigation, device compatibility, internet connectivity, and service responsiveness. Digital resources were adequate, but overall satisfaction was neutral. Both learners and staff highlighted the need for infrastructure upgrades, digital literacy training, responsive support, and integration of innovative tools such as AI and LMS platforms. The study concludes that sustainable improvement requires user-centered strategies supported by strong institutional policies. It recommends that Byte Size College administration and the ICT department prioritize stable connectivity, mobile-friendly platforms, continuous training, and comprehensive e-library policies. The study demonstrated how learners' utilization experiences can directly inform inclusive and innovative library service delivery in middle-level colleges.

**Keywords:** *ICT utilization, library services, virtual learners, distance education, Botswana*

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## 1. Introduction

Improving library services for virtual and distance learners requires leveraging ICT system user utilization experiences to ensure accessibility, efficiency, and inclusivity. Utilization experiences refer to perceptions, satisfaction, and challenges learners face when engaging with ICT-enabled library services, measured through indicators including frequency of usage, navigation ease, resource accessibility, user satisfaction, service awareness, inclusivity for special needs learners, and adequacy of technical and training support (Rizki et al., 2024; Essien et al., 2022). Negative experiences, poor connectivity, inadequate training, unfriendly interfaces, reduce service adoption, while positive experiences enhance engagement, equity, and academic success (Shehzadi et al., 2021). Understanding utilization experiences is central to improving library service delivery for distance learners.

Globally, developed countries have advanced significantly in ICT library integration. The United Kingdom provides 100% digital library access in public universities, enabling remote e-book and journal retrieval (Adeniyi et al., 2024). The United States employs open-access repositories and AI-driven platforms supporting research and teaching, minimizing physical library reliance (Bailey & Lie, 2020). South Korea and Singapore use artificial intelligence and big data analytics for personalized user experiences, while Australia has developed national repositories consolidating academic content across institutions (Kim, 2023; Choi, 2023; Stewart & White, 2023). These advancements demonstrate how user-centered ICT adoption enhances utilization and satisfaction.

Regionally, Africa faces ICT-enabled library challenges due to infrastructural and financial limitations. South Africa leads with approximately 78% of public universities offering digital libraries, though digital literacy gaps remain (Adeniyi et al., 2024). Zimbabwe reports less than 40% adoption due to high internet costs and poor infrastructure (Maphosa, Jita, & Dube, 2020). North African countries like Egypt and Algeria made progress but remain constrained by internet affordability (Ahmed, 2022). Nigeria has only 45% of universities operating fully functional digital libraries, reflecting weak infrastructure and underinvestment (Adeyemi, 2023). These disparities show African learner experiences are hindered by access, skills, and affordability barriers, undermining equitable service delivery (Mokgosi & Moakofi, 2022).

Locally, Botswana's ICT adoption in library services remains limited, especially in private institutions like Byte Size College, which faced 5% annual student attrition since 2020, largely due to remote digital resource access difficulties (Sello, 2020). Studies highlight inadequate ICT infrastructure, inconsistent connectivity, and low digital literacy as major constraints (Mokgosi & Moakofi, 2022; Kgathi, 2023). Despite government e-learning initiatives, implementation gaps persist in smaller institutions (Mothusi, 2023). Consequently, learner utilization experiences are characterized by frustration, underutilization, and dissatisfaction, requiring strategic ICT infrastructure investment, robust training programs, and user-centered design improvements.

## 1.1 Problem Statement

In an ideal academic environment, libraries are expected to integrate ICT systems to provide equitable and efficient access to resources for both on-campus and distance learners. However, at Byte Size College in Botswana, ICT adoption in library services remains limited, with utilization experiences of virtual and distance learners insufficiently understood. Studies highlight that learners often encounter difficulties such as inadequate ICT infrastructure, unreliable internet connectivity, and limited digital literacy, which hinder effective engagement with digital library resources (Mokgosi & Moakofi, 2022; Kgathi, 2023). Without addressing these challenges, students may experience reduced satisfaction, limited access to essential resources, and poor academic outcomes, further contributing to attrition rates that have risen by approximately 5% annually since 2020 (Sello, 2020).

World over, positive utilization experiences—such as ease of access, reliable navigation systems, and adequate user training—have been linked to enhanced learner engagement and improved academic success (Kim, 2023; Stewart & White, 2023). Yet, in many African contexts, including Botswana, such experiences are constrained by infrastructural and capacity challenges (Maphosa, Jita, & Dube, 2020; Ahmed, 2022). At Byte Size College, little is known about how learners currently utilize ICT systems and the extent to which their experiences can guide the enhancement of ICT-enabled library services. This gap underscores the need for empirical investigation to inform strategies that strengthen user-centered digital library services and ensure equitable support for virtual and distance learners.

## 1.2 Research Objectives

- i. To evaluate how virtual and distance learners at Byte Size College in Botswana utilize ICT systems,
- ii. To assess the extent to which user utilization experiences inform the enhancement of ICT-enabled library services.

## 2. Literature Review

### 2.1 Empirical Review

Utilization of ICT systems by virtual and distance learners critically determines digital library service effectiveness. Utilization experiences are assessed through measurable indicators, including frequency of usage, accessibility of e-resources, navigation ease, user satisfaction, resource awareness, inclusivity for disabled learners, and adequacy of technical support and training (Rizki et al., 2024; Essien et al., 2022). Positive experiences, intuitive platforms, timely training, and reliable connectivity encourage sustained engagement, while negative experiences like system outages, limited awareness, or insufficient digital skills lead to underutilization (Shehzadi et al., 2021; Khana, 2020). Understanding these experiences is essential for enhancing ICT-enabled library services.

Globally, countries demonstrate varying progress in aligning user experiences with improved services. UK universities report full ICT integration with high student satisfaction in remote journal and database access (Adeniyi et al., 2024). The United States embraces open-access repositories and AI-driven platforms for enhanced navigation and personalization (Bailey & Lie, 2020). South Korea and Singapore employ virtual assistants and big data analytics to optimize experiences (Kim, 2023; Choi, 2023). Australia's national repositories consolidate resources across institutions, promoting equitable access (Stewart & White, 2023). These

examples illustrate how positive utilization experiences inform continuous service enhancement.

Regionally, African institutions face infrastructural and economic barriers negatively shaping user experiences. South Africa provides digital library access in 78% of universities, but digital literacy gaps reduce effective utilization (Adeniyi et al., 2024). Zimbabwe has less than 40% of universities offering e-libraries, citing poor infrastructure and costly internet (Maphosa, Jita, & Dube, 2020). Egypt and Algeria invested in ICT integration but face affordability challenges (Ahmed, 2022). Nigeria has only 45% of institutions offering fully functional e-libraries (Adeyemi, 2023). These findings show African learners' experiences are shaped by access inequities, infrastructure deficits, and weak policies.

In Botswana, ICT adoption in academic libraries remains inconsistent, particularly in private institutions like Byte Size College, which reported 5% annual student attrition since 2020, attributed to remote library access challenges (Sello, 2020). Studies highlight barriers including unreliable internet, inadequate infrastructure, and low digital literacy (Mokgosi & Moakofi, 2022; Kgathi, 2023). Despite government e-learning initiatives, implementation gaps persist, undermining distance learner experiences (Mothusi, 2023). These realities emphasize investigating how learners utilize ICT systems at Byte Size College and how experiences can inform service improvement.

## 2.2 Theoretical Review

This study is underpinned by the Unified Theory of Acceptance and Use of Technology (UTAUT), which explains how users accept and utilize ICT systems. The theory posits that four key constructs—performance expectancy, effort expectancy, social influence, and facilitating conditions—shape user behavior and actual system usage (Venkatesh et al., 2003). In the context of virtual and distance learners, performance expectancy relates to the perceived usefulness of ICT-enabled library services in supporting academic success, while effort expectancy reflects the ease of navigating digital platforms. Social influence emphasizes the role of peers, staff, and institutional culture in motivating system usage, and facilitating conditions refer to the availability of infrastructure, training, and support mechanisms. The UTAUT model is therefore relevant in evaluating how learners at Byte Size College utilize ICT systems and in assessing how their utilization experiences can guide improvements in ICT-enabled library services (Mokgosi & Moakofi, 2022).

## 3. Methodology

This study was conducted at Byte Size College in Botswana, a private tertiary institution with increasing virtual and distance learners facing ICT adoption challenges in library services (Sello, 2020). The research adopted a mixed methods approach using a descriptive survey design to evaluate learner utilization experiences and implications for enhancing ICT-enabled library services (Mokgosi & Moakofi, 2022).

The target population comprised library directors, library staff, and virtual and distance learners. Two library directors were purposively selected due to their strategic ICT decision-making role, while all library staff were included through census sampling. Distance learners were sampled using simple random sampling for representativeness, totaling 172 respondents.

Data collection used structured questionnaires for distance learners and interview guides for directors and staff, complemented by document analysis. Instruments were pre-tested at the

Gaborone Institute of Professional Studies (GIPS) for reliability and validity. Content, construct, and face validity were confirmed through expert review, while reliability was tested using Cronbach's alpha, with coefficients above 0.7 considered acceptable (Kgathi, 2023).

Quantitative data were analyzed using SPSS version 26, employing descriptive statistics including frequencies, percentages, means, and standard deviations. Qualitative data were analyzed thematically for in-depth insights. This methodological triangulation ensured robustness and reliability, providing a comprehensive understanding of ICT system utilization experiences and implications for improving library services.

## **4. Results and Discussion**

### **4.1 Response Rate**

The study targeted library directors, library staff, and virtual and distance learners at Byte Size College in Botswana. Out of 172 respondents sampled, 151 completed and returned the questionnaires, yielding a response rate of 87.8%, which is considered highly adequate for survey research (Mugenda & Mugenda, 2019). This high rate strengthened the reliability of the findings and ensured that the perspectives of virtual and distance learners were well represented.

### **4.2 Background Information**

The background of this study is situated in the growing demand for ICT-enabled services to support virtual and distance learners. Globally, ICT has been recognized as a transformative enabler of digital libraries, enhancing accessibility, usability, and learner satisfaction when effectively integrated (Bailey & Lie, 2020; Kim, 2023). Regionally, however, African higher education institutions face challenges such as unstable internet connectivity, limited resources, and digital literacy gaps, which hinder effective utilization of ICT services (Maphosa, Jita, & Dube, 2020; Ahmed, 2022). In Botswana, ICT adoption in academic libraries has been gradual, with private institutions such as Byte Size College facing constraints of funding, infrastructure, and institutional policy enforcement (Mokgosi & Moakofi, 2022).

### **4.3 Learners' Utilization of ICT Systems**

The study first examined how virtual and distance learners utilize ICT systems in accessing library services. Descriptive statistics were generated to analyze learners' experiences in relation to navigation, frequency of use, technical accessibility, compatibility of devices, connectivity, guidelines, and overall satisfaction.

**Table 1: Utilization Experiences of Virtual and Distance Learners**

No.	Statements on Utilization Experiences of Virtual and Distance Learners (N = 151)	SD (1)	D (2)	N (3)	A (4)	SA (5)	Mean	Std. Dev.
a.	I find it easy to navigate and use the library's digital platforms.	32 (21.2%)	32 (21.2%)	26 (17.2%)	31 (20.5%)	30 (19.9%)	2.97	1.440
b.	I frequently use ICT-enabled library services for my academic work.	25 (16.6%)	40 (26.5%)	27 (17.9%)	28 (18.5%)	31 (20.5%)	3.00	1.395
c.	I can access the library's digital services without major technical challenges.	26 (17.2%)	30 (19.9%)	29 (19.2%)	33 (21.9%)	33 (21.9%)	3.11	1.407
d.	The library's ICT services are compatible with my personal devices (laptop, tablet, smartphone).	37 (24.5%)	30 (19.9%)	30 (19.9%)	26 (17.2%)	28 (18.5%)	2.85	1.444
e.	I have experienced difficulties accessing digital resources due to poor internet connectivity.	24 (15.9%)	34 (22.5%)	37 (24.5%)	28 (18.5%)	28 (18.5%)	3.01	1.342
f.	The library provides clear guidelines on how to use its digital services.	32 (21.2%)	23 (15.2%)	33 (21.9%)	28 (18.5%)	35 (23.2%)	3.07	1.456
g.	Overall, my experience using the library's ICT services has been positive and beneficial.	23 (15.2%)	40 (26.5%)	21 (13.9%)	40 (26.5%)	27 (17.9%)	3.05	1.365

The findings indicate that learners' ICT utilization experiences were mixed but moderately positive. Navigation and usability scored  $M = 2.97$  ( $SD = 1.44$ ), with 40.4% finding navigation easy and an equal proportion disagreeing, highlighting design inconsistencies. This supports Nguyen & Pratama (2021), who emphasize usability as critical to ICT adoption. Frequency of use ( $M = 3.00$ ,  $SD = 1.395$ ) showed 43.1% reported low engagement, suggesting limited integration into academic routines. Technical accessibility was slightly better ( $M = 3.11$ ,  $SD = 1.407$ ), though system instability and uneven connectivity persisted. Device compatibility

remained a challenge ( $M = 2.85$ ,  $SD = 1.444$ ), with 44.4% reporting incompatibility, consistent with Nasri & Ahmed (2023), who link limited interoperability to reduced ICT uptake.

Internet connectivity ( $M = 3.01$ ,  $SD = 1.342$ ) revealed 38.4% faced access issues, echoing infrastructural concerns noted by Mwantimwa and Mcharazo (2022). Guidance and user support scored moderately ( $M = 3.07$ ,  $SD = 1.456$ ), with variability in access to tutorials and manuals. Overall experiences ( $M = 3.05$ ,  $SD = 1.365$ ) were mixed, with 44.4% reporting positively and 41.7% disagreeing. These findings underscore the need for improved usability, compatibility, and support to enhance ICT-enabled library services. The high standard deviations across all items (ranging from 1.342 to 1.456) reflect wide disparities in utilization experiences. This uneven distribution highlights the persistence of digital divides within the same institutional setting, underscoring the need for targeted interventions.

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Qualitative data reinforced survey findings, revealing library monitoring mechanisms for learners' ICT experiences. The library director noted: "We track user logins, session durations, and resource downloads to evaluate engagement." Staff identified "surveys, help desk logs, usage stats," plus workshops and digital suggestion boxes, showing dual reliance on data-driven feedback analysis and participatory mechanisms (Adeniran et al., 2021; Maness, 2022).

Learners emphasized usability concerns, requesting: "Simplify borrowing and renewals, improve login systems, and offer easy-to-follow tutorials." They sought stronger user support through step-by-step video tutorials, clear manuals, and regular training, aligning with Tosaka and Park (2021), who emphasize structured guidance for effective e-resource use. Learners desired innovative features: "Expand digital borrowing, integrate with the LMS, and introduce AI tools for easier searching." This supports Zhang et al. (2023), highlighting AI's transformative role in digital library services.

Both quantitative and qualitative data findings converge on three themes: Access and Usability – While some learners navigate ICT platforms smoothly, others struggle with logins and compatibility, requiring system redesign. User Support and Feedback – Learners' call for tutorials aligns with staff's emphasis on surveys and analytics, reinforcing user-centered

support (Alhassan & Adam, 2022). Innovation and Integration – Both groups recognized the need for AI and academic platform integration to sustain relevance (Zhang et al., 2023).

#### 4.4 Learners' Experiences Informing Service Enhancement

The second research objective examined the extent to which learners' utilization experiences informed the enhancement of ICT-enabled library services. The findings were summarized in Table 2.

**Table 2: Improving Library Services for Virtual and Distance Learners**

No.	Statements (N = 151)	SD (1)	D (2)	N (3)	A (4)	SA (5)	Mean	Std. Dev.
a.	The library's ICT-enabled services meet my academic and research needs effectively.	30 (19.9%)	24 (15.9%)	35 (23.2%)	31 (20.5%)	31 (20.5%)	3.06	1.411
b.	I find it easy to access digital library resources remotely.	39 (25.8%)	27 (17.9%)	32 (21.2%)	25 (16.6%)	28 (18.5%)	2.84	1.452
c.	The library's ICT services have improved my overall learning experience.	41 (27.2%)	25 (16.6%)	26 (17.2%)	26 (17.2%)	33 (21.9%)	2.90	1.518
d.	The response time for online library services (e.g., digital book borrowing, consultations) is satisfactory.	27 (17.9%)	36 (23.8%)	34 (22.5%)	28 (18.5%)	26 (17.2%)	2.93	1.355
e.	The library provides sufficient digital resources, such as e-books and online journals.	32 (21.2%)	26 (17.2%)	28 (18.5%)	28 (18.5%)	37 (24.5%)	3.08	1.481
f.	The ICT-enabled library services are reliable and available whenever I need them.	24 (15.9%)	35 (23.2%)	40 (26.5%)	30 (19.9%)	22 (14.6%)	2.94	1.287
g.	I am satisfied with the overall quality of ICT-enabled library services.	26 (17.2%)	40 (26.5%)	20 (13.2%)	35 (23.2%)	30 (19.9%)	3.02	1.412

Learners reported moderate satisfaction with ICT-enabled services. Resource sufficiency scored highest (M = 3.08, SD = 1.481), suggesting good e-book and journal provision. However, ease of remote access was low (M = 2.84, SD = 1.452), showing persistent

infrastructural and usability challenges. Response times were problematic ( $M = 2.93$ ,  $SD = 1.355$ ), with more learners dissatisfied than satisfied. Service reliability was modest ( $M = 2.94$ ,  $SD = 1.287$ ), indicating inconsistent experiences. Overall satisfaction was neutral ( $M = 3.02$ ,  $SD = 1.412$ ), reflecting a divided user base. These align with Abu Bakar et al. (2021), identifying information quality, system reliability, and service responsiveness as satisfaction predictors.

On qualitative findings, library staff highlighted systemic barriers: poor connectivity, limited e-resources, training gaps, and budget constraints. The director emphasized: "Inconsistent internet connectivity and budget limitations hinder upgrades and expansion." Staff noted "low ICT literacy" among learners, echoing Onyango & Mutula (2023) on structured digital literacy programs.

Strategies included system upgrades, remote support webinars, feedback surveys, and a 24/7 chat service, consistent with global best practices (Mensah & Afful-Arthur, 2020). Learners suggested expanding digital resources, improving navigation, faster responses, and mobile-friendly platforms. Calls for personalized support and collaborative online tools align with Abubakar & Mohammed (2021) and Mensah & Afful-Arthur (2020).

The findings converged on four themes: Training and Digital Literacy, System Upgrades and Infrastructure, User Feedback and Responsiveness, and Policy and Strategic Frameworks. These findings reinforce that utilization experiences must inform enhancement strategies for inclusive, reliable, learner-centred services (Musoke, 2023). The convergence results were summarized in Table 3 to enhance insights into the same.

**Table 3: Convergence of Quantitative and Qualitative Findings on Learners’ Utilization Experiences and Service Enhancement**

Theme	Quantitative Evidence	Qualitative Evidence	Convergence Implication
Access Usability	Navigation challenges ( $M = 2.97$ , $SD = 1.44$ )	Learners requested simplify borrowing and renewals, improve login ease of remote access systems, and offer easy-to-follow tutorials. ( $M = 2.84$ , $SD = 1.45$ )	Usability issues remain a major barrier; both data strands highlight the need for system redesign and simplified access procedures.
Technical Infrastructure	Device compatibility rated low ( $M = 2.85$ , $SD = 1.44$ )	Staff cited “poor connectivity,” and the director emphasized “inconsistent internet connectivity.”	Both learners and staff recognize infrastructure weaknesses, underscoring the urgency of stable internet and device interoperability.
Resource Availability	Digital resources relatively sufficient ( $M = 3.08$ , $SD = 1.48$ )	Learners asked to “expand digital resources,” and staff emphasized “limited e-resources.”	While collections are growing, learners demand broader and more diverse digital resources, echoing staff concerns.

Theme	Quantitative Evidence	Qualitative Evidence	Convergence Implication
User Support & Training	<ul style="list-style-type: none"><li>• Clear guidelines moderately adequate (M = 3.07, SD = 1.46)</li></ul>	<ul style="list-style-type: none"><li>• Learners requested “video tutorials, guides, and manuals.”</li><li>• Staff highlighted “training literacy and continuous needs” and “low ICT literacy.”</li></ul>	Convergence on the need for structured digital training programs.
Responsiveness & Feedback	<ul style="list-style-type: none"><li>• Response times unsatisfactory (M = 2.93, SD = 1.36)</li></ul>	<ul style="list-style-type: none"><li>• Learners emphasized “faster response times” and “24/7 support.”</li><li>• Staff reported “feedback surveys” and “helpdesk logs.”</li></ul>	Both groups emphasize the importance of responsiveness and feedback-driven improvement.
Innovation & Integration	<ul style="list-style-type: none"><li>• Overall positive experiences (M = 3.05, SD = 1.36) but variability high.</li></ul>	<ul style="list-style-type: none"><li>• Learners suggested “AI tools,” “LMS integration,” and “mobile platforms.”</li><li>• Director cited “system upgrades” and “policy expansion.”</li></ul>	Recognition that innovation and integration with wider learning ecosystems are critical to sustain the relevance of ICT-enabled services.
Policy & Strategic Frameworks	<ul style="list-style-type: none"><li>• Mixed overall satisfaction with ICT-enabled services (M = 3.02, SD = 1.41).</li></ul>	<ul style="list-style-type: none"><li>• Director noted “comprehensive e-library policy” and “budget limitations.”</li></ul>	Policies and resource allocation are central to sustaining improvements; the need for long-term strategic planning is acknowledged.

Table 3 concisely links quantitative statistics with qualitative voices, showing where they converge and what the implications are. It provides a strong basis for your argument that user utilization experiences must inform service enhancements. The findings from this study demonstrate that while Byte Size College has made progress in integrating ICT-enabled services for virtual and distance learners, significant gaps persist in usability, infrastructure, responsiveness, and user-centered support. Quantitative results revealed moderate but inconsistent utilization experiences, with learners reporting difficulties in navigation, device compatibility, and internet stability. Qualitative data reinforced these patterns, highlighting infrastructural constraints, limited e-resources, and insufficient training support as recurring barriers. Learners’ calls for simplified processes, better guidance, and innovative features such as AI-driven personalization and LMS integration further illustrate evolving expectations in digital learning environments.

The convergence of findings across data sources underscores the importance of aligning institutional strategies with learners’ actual utilization experiences. Access, usability, responsiveness, and innovation emerged as cross-cutting themes requiring urgent attention.

Evidence also points to the value of continuous feedback mechanisms and structured policies to institutionalize improvements. In sum, the study highlights that enhancing ICT-enabled library services at Byte Size College depends not only on technological investments but also on responsive, learner-centered approaches that bridge the digital divide and support equitable access for all virtual and distance learners.

## 5. Conclusion

In conclusion, this study reveals that learners' utilization experiences with ICT-enabled library services at Byte Size College are marked by both opportunities and persistent challenges. While digital resources are increasingly available and many students benefit from ICT integration, significant barriers remain in areas of usability, technical infrastructure, responsiveness, and learner support. The convergence of quantitative and qualitative findings highlights that learners consistently seek improved navigation, reliable connectivity, expanded resources, and personalized guidance. Staff and administrators equally acknowledge these gaps, citing infrastructural, training, and budgetary constraints as systemic hurdles. The evidence makes clear that sustainable improvement cannot be achieved through technological expansion alone, but requires deliberate, learner-centered strategies that integrate feedback mechanisms, training programs, and strategic policy frameworks. This recognition provides a strong foundation for targeted recommendations that address infrastructural deficits, enhance user support, and promote innovative, inclusive practices in ICT-enabled service delivery for virtual and distance learners.

## 6. Recommendations

To strengthen ICT-enabled library services, Byte Size College should prioritize upgrading infrastructure through stable, high-speed internet, mobile-friendly platforms, and cross-device compatibility. The administration and ICT department should collaborate with internet service providers for reliable off-campus connectivity. Library management should simplify navigation by streamlining login systems, borrowing processes, and search functionalities, while developing clear tutorials and interactive orientations. The college should institutionalize comprehensive e-library policies guaranteeing continuous upgrades, expanded e-resource subscriptions, and sustainable budget allocations. Library administration should establish stronger feedback mechanisms through surveys, digital suggestion boxes, and a "24/7 chat service." Finally, library and ICT teams should embrace innovation by integrating services with the Learning Management System, adopting AI-driven recommendation tools, and ensuring responsive support systems aligned with learners' evolving needs.

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