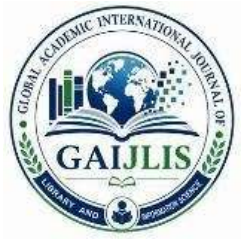
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ICT SKILLS AND BARRIERS TO SKILLS ACQUISITION AMONG LIBRARY AND INFORMATION SCIENCE STUDENTS AT UNIVERSITY OF DELTA AGBOR DELTA STATE

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Abstract

This study examined reported information and communication technology (ICT) skills and barriers to skills acquisition among Library and Information Science (LIS) students at the University of Delta, Agbor, Delta State, in the 2024/2025 academic session. The analysis used aggregate questionnaire results for 120 students. Microsoft Word (81.67%) and online registration (76.67%) were the most frequently selected computer and online activities, while database management systems (43.33%) and electronic and internet troubleshooting (39.17%) were less frequently selected. The most frequently endorsed barriers were lack of practical ICT lectures (90.00%), erratic power supply (84.17%) and insufficient funding (83.33%). The findings support prioritising supervised practical sessions and addressing power and funding constraints. The results describe student reports at one university.

Keywords: *ICT skills; library and information science students; skills acquisition constraints; digital competence; Delta State; Nigeria*

1. INTRODUCTION

Information and communication technology has changed what librarians do and, therefore, what library schools must teach. Selection, acquisition, cataloguing, reference service, preservation and the management of digital collections are now carried out with automation software, databases, repositories and online platforms. A graduate who cannot use these tools is poorly prepared for the profession. Alex-

Nmecha and Nsirim (2023) make this point in their study of ICT integration in the LIS curriculum in Rivers State, where they treated practical ICT training, not only ICT course titles, as the test of whether a library school has integrated ICT.

The evidence from Nigerian library schools suggests that access to technology and the skill to use it are different problems. Toyo (2025), writing from Delta State University, Abraka, surveyed LIS undergraduates in twelve southern Nigerian universities and reported that access to ICT facilities was high, but that the students' skills were limited to the use of computers: they lacked skills for databases, electronic file formats, online acquisition procedures and interactive platforms. The study concluded that low use of ICT reflected a shortage of skills more than a shortage of access. A companion study by Toyo and Arumuru (2025) examined gender differences in the deployment of ICT among the same group of students and noted that the distribution and usability of facilities are shaped by students' economic backgrounds and digital exposure. These findings make the skills and the conditions under which they are acquired the central issue for library schools.

The University of Delta, Agbor, provides a setting for examining how LIS students acquire ICT skills. Earlier studies examined ICT skills among students in Delta and Edo States (Odede et al., 2015) and information literacy among final-year students at Delta State University, Abraka (Igun & Odafe, 2014). The present study focuses on the ICT activities, learning routes and barriers reported by students at the University of Delta in the 2024/2025 academic session.

The skills that matter have also changed. Students now meet cloud tools, mobile library services and generative artificial intelligence (AI). Omotade et al. (2025) found a high level of AI awareness, about 95 percent, among library students in 11 Nigerian universities, together with challenges that included high data costs, poor digital skills, unreliable internet and power supply problems. Hassan and Harande (2025) similarly call for AI literacy programmes, curriculum integration and improved infrastructure in Nigerian universities. If students are adopting new tools faster than their programmes are teaching them, library schools need current

evidence on where students stand.

1.1 Statement of the problem

Library and information science students need practical ICT skills to search electronic databases, organise digital materials and assist users with online information services. Digital repositories, metadata standards and file preservation are already part of professional library practice (Obande et al., 2024). Familiarity with word processing or routine online activities gives limited information about whether students have opportunities to practise these more specialised tasks. A Nigerian study of LIS students also reported gaps in database use and other digital activities despite access to ICT facilities (Toyo, 2025).

Opportunities to practise depend on both course delivery and the conditions under which practical sessions take place. Alex-Nmecha and Nsirim (2023) identified difficulties delivering ICT practica in library schools in Rivers State. In a study of postgraduate students in federal universities in North-East Nigeria, Ijantiku et al. (2025) identified poor connectivity, erratic electricity and limited ICT infrastructure as barriers to using internet resources. These studies identify instructional and infrastructural conditions worth examining at Agbor, where the pattern of barriers requires evidence from the students themselves.

For the University of Delta, Agbor, the practical question is which ICT activities students report, where they acquire these skills and which barriers are most widely endorsed. Without institution-specific evidence, the department has limited grounds for deciding whether to prioritise supervised practical sessions, working equipment or reliable electricity. The study therefore examines the activities, learning routes and barriers reported by LIS students at the University of Delta, Agbor, during the 2024/2025 academic session.

1.2 Objectives of the study

(a) describe the ICT activities and retrieval tools students reported;

(b) identify students' reported sources of ICT skills acquisition; and

(c) identify the most frequently endorsed barriers to ICT skills acquisition.

1.3 Research questions

RQ1. Which ICT activities and retrieval tools did students report?

RQ2. Where did students report acquiring ICT skills?

RQ3. Which barriers to ICT skills acquisition did students endorse?

1.4 Significance and Scope

The study focuses on LIS students at the University of Delta, Agbor, Delta State, in the 2024/2025 academic session. The findings can inform

departmental decisions about practical instruction and ICT facilities.

2. REVIEW OF RELATED LITERATURE

2.1 The concept of ICT skills

ICT skills are the abilities that allow a person to use technology to find, develop and present information. Odede et al. (2015), drawing on earlier definitions, stress that the skills go beyond operating a software package or a keyboard and include using knowledge of ICT to find, develop and present text, images or numbers in an integrated task. This view is consistent with competence frameworks. The European Digital Competence Framework for Citizens, DigComp 2.2, organises digital competence into five areas: information and data literacy, communication and collaboration, digital content creation, safety and problem solving (Vuorikari et al., 2022). For library students, these areas translate naturally into familiar tasks such as searching and evaluating sources, using collaborative tools, producing digital content and metadata, protecting data and solving technical problems.

2.2 Theoretical framework

Two perspectives guide the study. Bandura's (1977) self-efficacy theory holds that people's belief in their capability to perform a task influences whether they attempt it, how long they persist and how well they perform. In the LIS setting this implies that students who have practised with ICT tools and succeeded will approach new tools with more confidence, and that limited practice, a common constraint, depresses both confidence and skill. Iyinolakan and Abioye (2025) adopt the same logic in a study of ICT self-efficacy and academic performance among LIS undergraduates in 12 Nigerian federal universities. The Technology Acceptance Model (Davis, 1989) adds that people adopt technologies they perceive to be useful and easy to use. Constraints such as poor internet, unreliable power and inadequate equipment reduce perceived ease of use and so discourage practice. Together the perspectives suggest that skill level will be associated with the quality of instruction and facilities and will be reduced by the constraints that students identify.

2.3 ICT skills of LIS students: empirical evidence

Studies of LIS students in Nigeria show mixed results. Odede et al. (2015) surveyed 238 LIS

undergraduates at Delta State University, Abraka, and at a university in Edo State and found that students reported basic computer skills, such as starting up a computer and using a mouse and keyboard, much more strongly than skills such as launching a web browser or sending an email attachment. By contrast, Toyo (2025) reported low skill levels among 12 southern Nigerian universities, with computer use the only skill the students possessed to an adequate degree. Alex-Nmecha and Ejitagha (2023) surveyed 279 final-year LIS students in six federal universities and found that students trusted their ability to search the internet and preferred digital sources, though they still used the library to retrieve information. Alade and Adekoya (2024) found that undergraduate sandwich students in Nigerian universities had a high level of ICT skills but low utilisation of electronic information resources. Taken together, these studies indicate that students are often confident in general and basic skills but weaker in specialised and library-specific skills, and that skill, access and use do not move together.

Information literacy, a related capability, shows a similar pattern in Delta State. Igun and Odafe (2014) studied final-year students in two departments of Delta State University, Abraka, including LIS, and concluded that information literacy education and electronic information skills should form part of the undergraduate curriculum. At Dennis Osadebay University, Abere and Ekoko (2026) found modest digital literacy among 300-level agriculture students, with weakness in critical assessment of online resources. Although that study was not about LIS students, it gives an indication of the digital literacy of undergraduates at the same university.

2.4 How students acquire ICT skills

The route by which skills are acquired affects their depth. In the Delta and Edo States study, the most commonly reported route was self-teaching with manuals and handbooks (67.6 percent of respondents), followed closely by courses at the university and help from friends, family and other students (66.4 percent each), whereas tailored training models were much less common (Odede et al., 2015). Where the formal curriculum is the main route, the quality of practical teaching is decisive. Alex-Nmecha and Nsirim (2023) surveyed LIS educators and 400-level students in three Rivers

State institutions and found that ICT courses had been integrated into the curriculum, but that educators lacked the ICT skills to teach the practicum, so students were not properly taught it, even though students held positive perceptions of ICT practicum.

2.5 Constraints to ICT skills acquisition

The Rivers State study identified lack of ICT skills among staff, poor policy implementation, lack of state-of-the-art infrastructure and negative staff attitudes as the main challenges to implementing the ICT practicum (Alex-Nmecha & Nsirim, 2023). Alade and Adekoya (2024) reported that students lacked the skills to search the internet and that the library had too few ICT professionals to help them. Omotade et al. (2025) listed high data costs, poor digital skills, unreliable internet and power supply problems as the main hindrances to students' use of AI tools. In Delta State, Abere and Ekoko (2026) attributed the limited digital literacy of agriculture undergraduates at Dennis Osadebay University to limited resources, information literacy skills, training, infrastructure and finances. Across these studies, infrastructure, funding, personal cost, instructor capacity and training recur, which is why the constraints section of the questionnaire covers each of them.

2.6 Research Gap

Earlier Nigerian studies identify differences by skill type and recurring constraints involving infrastructure and instruction. The present study provides institution-specific descriptive evidence on ICT activities, learning routes and barriers at Agbor.

3. Methodology

The study used a descriptive questionnaire survey. The author confirmed the University of Delta, Agbor, Delta State, as the survey site and 2024/2025 as the academic session. This analysis uses the aggregate student tables in the supplied report. The student return count was 120 of 168 distributed questionnaires (71.43%). The achieved student sample was 120. The supplied tables do not document the student selection procedure or enrolment by study level. Lecturer responses were outside the student analysis.

Item counts were divided by 120 and reported as percentages. Participants could select more than one option in the activity, retrieval-tool and learning-route sections. For each barrier, the counts for “True” and “Very True” were combined to calculate endorsement, while all three original response categories were retained. Aggregate tables support descriptive analyses. Participant-level test statistics and internal consistency cannot be recovered from these tables.

4. Results

Of the 120 student respondents, 69 (57.50%) were male and 51 (42.50%)

were female. Most respondents were aged 21–30 (108, 90.00%), followed by 31–40 (11, 9.17%) and 41–50 (1, 0.83%).

Table 1. Reported computer and online activities

Activity	Count	Percent
Microsoft Word	98	81.67
Microsoft PowerPoint	74	61.67
Desktop publishing	21	17.50
Internet browsing	53	44.17
Online registration	92	76.67
Database management systems	52	43.33
Electronic and internet troubleshooting	47	39.17

Microsoft Word and online registration had the highest selection frequencies among the activities listed. Database management and troubleshooting were each selected by fewer than half of respondents. For online retrieval, students more often selected AND (82, 68.33%) and OR (75, 62.50%) than quotation marks for phrase searching (44, 36.67%).

Table 2. Reported sources of ICT skills

Source	Count	Percent
University courses	83	69.17
Industrial placement (SIWES)	72	60.00
University ICT facilities	40	33.33
Off-campus ICT training	30	25.00

University courses and industrial placement were the two most frequently reported routes to ICT skills acquisition.

Table 3. Responses to reported barriers

Barrier	Very true	True	False	Endorsed (%)
Lack of practical ICT lectures	74	34	12	90.00
Erratic power supply	10	91	19	84.17
Insufficient funding	91	9	20	83.33

Barrier	Very true	True	False	Endorsed (%)
Inadequate ICT facilities	78	2	40	66.67
Insufficient ICT content in the curriculum	10	46	64	46.67
Tutors with insufficient ICT skills	11	31	78	35.00
Poor management	9	20	91	24.17

Lack of practical ICT lectures was endorsed by 108 students, followed by erratic power supply (101), insufficient funding (100) and inadequate ICT facilities (80). The ordering reflects combined endorsement. Insufficient funding received the most "Very True" ratings (91).

5. Discussion

The stronger reporting of word processing and online registration than database management and troubleshooting is consistent with evidence that general computer activities are more familiar to LIS students than some specialised tasks (Odede et al., 2015; Toyo, 2025). Selection frequencies indicate reported exposure or familiarity. Direct practical assessment would be needed to measure proficiency and determine whether students can transfer skills to library workflows.

University courses and industrial placement were common learning routes, yet nine in ten respondents endorsed insufficient practical ICT lectures. This pattern suggests that the opportunity to apply course content deserves attention alongside the curriculum itself. Alex-Nmecha and Nsirim (2023) similarly emphasised the implementation of ICT practica in Nigerian library schools. Power, funding and facilities were also frequently endorsed, suggesting specific conditions that the department can examine when scheduling practical work. The power and facilities concerns are consistent with barriers reported by Ijantiku et al. (2025) among postgraduate users of internet resources, although the populations and questionnaire items differ.

The findings describe one institution and reflect student reports. The available aggregates do not show how activities and barriers varied by study level or gender, how the items covaried, or how respondents differed from students who did not return questionnaires.

6. Conclusion and Recommendations

The 120 Agbor respondents most often reported common computer and online activities and identified practical instruction, power and funding as the leading barriers. The department should schedule supervised exercises in database management, electronic retrieval and troubleshooting. University management should assess power reliability and the availability of working equipment during scheduled practicals and assign funding to the gaps identified. The department can evaluate the effect of these changes with task-based assessments.

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