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EFFECTS OF DIGITAL LEARNING PLATFORMS ON TEACHING AND LEANING IN HOSPITALITY MANAGEMENT

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ABSTRACT

This study investigated the impact of digital learning platforms on teaching and learning in hospital management education. It evaluated access to these platforms, internet availability, perceived learning effectiveness, challenges encountered, and differences in perceptions between students and lecturers. Data was collected from 385 respondents through a structured questionnaire using a descriptive survey research design. The analysis incorporated descriptive statistics and inferential statistics, including Chi-square and Independent Samples t-test, at a 0.05 significance level. The study found that most respondents had access to digital learning platforms, yet faced inconsistent internet connectivity. Participants viewed these platforms as moderately to highly effective but encountered challenges such as network issues, lack of training, inadequate devices, and high data costs. Statistical analysis indicated a significant link between access and perceived effectiveness, with lecturers rating effectiveness higher than students. The conclusion emphasizes that while digital platforms positively impact hospital management education, infrastructural and socioeconomic challenges inhibit their full potential. Recommendations include enhancing internet infrastructure, providing digital literacy training, and ensuring equitable device access.

KEYWORDS: Digital Learning, Teaching and Leaning, Hospitality Management.

1. INTRODUCTION

Digital library platforms have become increasingly vital in the modern educational landscape, offering an extensive range of resources that enhance academic research, learning and teaching. In tertiary institutions, the integration of these digital libraries has the potential to significantly improve access to information, support academic activities, and foster a more engaging and interactive learning environment. The availability of online resources 24/7 enables learners to engage in educational activities at their convenience, significantly increasing access to higher education. Digital libraries act as catalysts for change, promoting the creation of educational communities that share digital resources in a networked environment, thereby encouraging resource sharing among scholars. The benefits, as noted by Ash et al. (2018), include the free flow of information, improved access to resources, maximized use of information, quicker information provision, and reciprocal exchange of local publications. Trivedi (2010) highlights that digital libraries aim to systematically develop procedures for collecting, storing, and organizing information in digital form, promoting efficient and economical information delivery to users, encouraging cooperative research efforts, and strengthening communication and collaboration among educational institutions. However, Zirra et al. (2019) point out that the design and maintenance of digital libraries require substantial financial investment in digitization, servers, information retrieval networks, electronic resources, and staff training in digital library management. Continuous upgrading of digital infrastructure is necessary due to the rapidly evolving media technology. Tidd and Bessant (2018) emphasize the need to maintain parallel conventional and digital systems due to the uncertain nature of ICT infrastructure in Africa. The development of digital libraries indicates that African institutions and research communities are becoming more global. Advances in network technology, image-processing software, telecommunication, and multimedia software have improved the formats and collections of these digital libraries (Zirra et al., 2019). However, uneven gaps still exist within African institutions concerning networked digital libraries, indicating a need for further development and investment. This study aims to evaluate the effectiveness of digital library platforms among the tertiary institutions in Katsina State, Nigeria, to understand their impact on students and faculty, identify challenges and suggest improvements.

A study by Do et al. (2019) identified seven key contextual factors that influence the development of digital library education in Vietnam, categorized into three groups: external factors, internal factors, and change agents. External factors include government policies, IT infrastructure, and social and cultural values. Internal factors encompass stakeholders'

attitudes, the specific characteristics of digital library education, and the personal and organizational nexus. Change agents, which can be either internal or external, also play a significant role. The interplay among these factors varies in its impact on the progress of digital library education, highlighting their interdependence. Research on the competencies needed by digital library professionals has identified three main areas: technological knowledge and skills, library-related knowledge and skills, and other essential skills. Technological skills include personal IT abilities, knowledge of IT systems and applications, web proficiency, data mining, and data management. Library-related skills involve understanding users' needs, user education, digital archiving and preservation, cataloging, metadata, indexing, collection development, and visual reference services. Other necessary skills include information literacy, research skills, communication skills, and legal knowledge relevant to digital environments (Baro, 2010; Hartnett, 2014; Tammaro, 2017).

There is a pressing need for digital library education in library schools within developing countries to equip graduate librarians with the necessary skills for creating and managing digital libraries in the current digital era. Essential competencies for working in a digital library environment include proficiency in digital library software, optical character recognition, metadata assignment, scanner usage for digitization, and the development of high-quality digital content (Baro et al., 2019). Furthermore, effective management of digital library infrastructures and equipment is critical once digital content is developed. Khan and Bhatti (2017) describe a digital library as a collection of digital information and services, stored and accessed digitally, in an organized manner. One significant challenge faced by countries with economic conditions similar to Nigeria is the lack of adequately qualified staff. For instance, reports indicate that 49% of librarians in Vietnam lack digital library competencies (Tran and Do, 2014), highlighting the urgent need for digital librarians in developing countries, including Nigeria (Nguyen, 2017; Baro, 2010). Consequently, enhancing human resource quality is a primary focus for the Librarian’s Registration Council of Nigeria (LRCN) and the National Universities Commission (NUC). Digital library developers must possess digital competencies to safeguard digital content and ensure its long-term sustainability.

Research indicates that outdated LIS curricula, inadequate IT infrastructure, and insufficient training are major obstacles to producing skilled digital librarians (Malik and Ameen, 2017). For example, LIS education in Pakistan, offered at 11 universities, emphasizes management over ICT skills, reflecting the global need for curriculum updates. Several studies in Africa report a shortage of qualified library staff and educators in ICT, with library schools not

producing enough graduates with the required expertise (Baro, 2010; Edegbo, 2011; Chikonzo et al., 2014; Emiri, 2015; Baro et al., 2019). Do et al. (2019) emphasize that recognizing the need for digital library education is crucial for its development. However, the lack of qualified lecturers to implement such programs remains a significant barrier. The growing national digital environment, the increasing use of digital content, and the demand for digital library staff underscore the necessity for digital library education. The integration of the internet and digital technologies into daily life has broadened the range of employment opportunities within the information profession over the past decades (Malik and Ameen, 2020). Traditional LIS graduates are increasingly finding roles as digital librarians, metadata professionals, or web content managers (Wise et al., 2011), reflecting a converging professional landscape with evolving responsibilities in both public and private sectors globally (Ocholla and Shongwe, 2013). Professional associations within the LIS field often have educational policy statements that LIS schools must adhere to for accreditation. According to IFLA (2012) guidelines, LIS educational programs should be part of a degree-granting institution at the tertiary level. These guidelines provide global LIS schools with principles for establishing and running their educational programs. This paper investigates the extent to which digital library courses are incorporated into the curricula of Nigerian library schools, guided by specific research questions.

1.1 Challenges in Digital Library Education Programs and Continuing Professional Development Needs

Various studies have highlighted gaps in digital library education programs. Degree programs from institutions like the University of Karachi, University of the Punjab, Sind University of Jamshoro, and Islamic University Bahawalpur do not meet employer expectations (Rafi et al., 2019). Additionally, issues such as lack of technical proficiency, administrative oversight, and inadequate digital skills among library professionals persist (Malik and Ameen, 2017).

Nguyen (2016) emphasized the importance of continuing professional development for Vietnamese academic library managers and staff, identifying digital library creation, digital collection development, and copyright issues as key areas. Do et al. (2019) further noted that IT infrastructure, supported by government policies and funding, is crucial for the advancement of digital library education. Khan and Bhatti (2017) categorized digital competencies into those needed for developing digital libraries, managing them, and protecting digital content. Rafi et al. (2019) found a strong link between students' technological skills and their ability to use digital tools and resources effectively, which in turn supports their academic goals.

1.2 Effective Digital Library Instruction and Role of Library Schools in Developing Digital Library Skills

Effective digital library instruction relies on the collaborative efforts of well-trained mentors, up-to-date courses, a clear technological roadmap, and mutual respect between teachers and students (Mohammadyari and Singh, 2015). Continuous education programs have been shown to enhance librarians' knowledge and skills, boosting their confidence and teamwork abilities (Hamid and Soroya, 2017). Library schools play a critical role in developing the digital skills of future librarians. The increasing demand for digital libraries and skilled digital librarians necessitates the inclusion of technology-based courses in the LIS curriculum. IFLA (2012) recommends that LIS programs incorporate comprehensive digital skills training and practice-based assignments. Additionally, Malik and Ameen (2020) highlighted the emergence of new job markets for LIS graduates, stressing the need for training in digital competencies. Baro et al. (2019) identified several challenges that hinder librarians from acquiring digital literacy skills, such as insufficient funding, inadequate physical facilities, and a shortage of skilled ICT educators. Satpathy and Maharana (2011) pointed out that librarians often struggle with time constraints and poor training opportunities. In many developing countries, weak financial and technological infrastructures impede the facilitation of digital library education. Studies have shown that librarians often acquire digital literacy skills through workshops, seminars, self-teaching, and assistance from colleagues rather than formal education in library schools (Onohwakpor, 2012; Emiri, 2015). This indicates a need for library schools to enhance their digital literacy education to better equip students for the digital age.

1.3 Integrating Online Learning and Laboratory-Based Instruction in Hospitality Management Education

Hospitality management education is a dynamic and practice-oriented discipline that continuously evolves in response to industry innovations, technological advancement, and changing professional standards. To remain relevant and competitive, academic institutions must equip students with practical competencies that align with contemporary industry demands, alongside sound theoretical foundations. Laboratory-based activities play a critical role in this process by enabling students to acquire hands-on skills essential to hospitality-related courses. At the same time, conceptual understanding and the nature of scientific inquiry require the development of structured theoretical knowledge. Chan (2012) defines laboratory activities as structured learning experiences that allow students to explore, investigate, and experiment with materials, resources, and ideas either individually or collaboratively. Such

activities are not confined to traditional physical laboratories but can also be delivered through e-learning management systems and computer-simulated virtual laboratories. With the increasing adoption of online learning, students now benefit from enhanced flexibility, broader access to learning resources, and innovative instructional approaches, which are particularly significant in hospitality management education. However, Mover (2014) cautions that students' behaviors and performance in online laboratory environments may differ from those observed in natural or physical settings, raising important questions about the effectiveness of virtual practical instruction.

Laboratory learning in hospitality education can occur through various methods, including observation of real-life cases, hands-on practical training, and experimental activities, all of which are designed to strengthen the application of classroom-based theory. The primary objective of laboratory instruction is to facilitate experiential learning by allowing students to practice and reinforce theoretical concepts in realistic contexts (Ka Yuk Chan, 2012). Understanding the impact of online learning on hospitality laboratory instruction is therefore essential for educators, institutions, and industry stakeholders. This study seeks to examine the effectiveness of online learning tools, levels of student engagement, and the integration of technology in laboratory-based courses, with specific focus on third-year hospitality management students' practical skill development and their ability to apply theoretical knowledge through online laboratory activities. Such evaluation provides valuable insights into students' actual learning capacities and performance outcomes in a digitally mediated learning environment. Existing literature highlights the continued importance of hands-on laboratory experiences, as society largely agrees that no complete substitute exists for guided practical activities involving real materials and equipment (Saraiva et al., 2019). Nevertheless, recent studies indicate that online laboratory classes offer limited opportunities for peer interaction, prompting educators to adopt alternative strategies such as social media platforms to enhance engagement, skill acquisition, and learner confidence (De Leon et al., 2021). Advances in virtual laboratory technologies have also demonstrated potential, as students can acquire scientific concepts and practical skills through online platforms accessed via laptops and smartphones (Ramesh, 2019). In hospitality education, these laboratories encompass diverse functional areas, including front office operations, accounting, housekeeping, food and beverage service, food production, pastry, bartending, stewarding, and storeroom management (Program Pendidikan Vokasi, 2022).

1.4 Objectives of the Study

The aim of this research is to assess the effectiveness of digital library platforms in tertiary institutions in Katsina State and provide recommendations for enhancing their impact on academic activities.

Specific Objectives are:

i. To evaluate the accessibility and usability of digital library platforms for students and faculty.

ii. To determine the impact of digital library platforms on academic performance and research activities.

iii. To identify the challenges faced by users in utilizing digital library platforms.

iv. To recommend strategies for enhancing the effectiveness of digital library platforms in tertiary institutions.

2. Literature Review

2.1 Hospitality Management Education as Integrating Technology to Enhanced Learning and Laboratory-Based Skill Development

Hospitality management encompasses the administrative, operational, and commercial aspects of service-oriented organizations and offers diverse career pathways, including hotel management, tourism, event management, food and beverage operations, and entrepreneurship (Cornell & Nolan, 2022; Revfine, 2021). With the advancement of educational technologies, online and blended learning approaches have become increasingly prominent in hospitality education. Studies have shown that e-learning platforms enhance learners' knowledge acquisition, skills development, and study efficiency while offering flexibility and faster program completion (Lin & Chen, 2017; Jung & Lee, 2020; Salloum & Shaalan, 2018). However, online learning environments require learners to demonstrate strong self-regulation skills, especially in contexts where instructor presence is limited (Wong et al., 2019). While virtual learning platforms improve access to learning resources and instructor–student interaction, challenges remain regarding student engagement, interpersonal interaction, and instructional design quality (Radovic-Markovic, 2010; Chigeza & Halbert, 2014). During the COVID-19 pandemic, hospitality education rapidly transitioned from face-to-face to online delivery, often with limited preparation time for instructors (Loike & Stilts, 2020). Although online learning has proven effective in certain contexts, research indicates that both students and administrators generally perceive face-to-face instruction as more effective, particularly for demonstrations and communication (Sciarini et al., 2012; Mejia & Phelan, 2014). Laboratory and practical activities play a vital role in developing students' performance,

technical competencies, and soft skills in hospitality education. Sisson and Adams (2013) argue that effective learning outcomes require the integration of hands-on activities with relevant knowledge, attitudes, and skills aligned with industry standards. Despite this, many needs assessment studies in hospitality focus primarily on industry expectations while neglecting educators' perspectives (Rahman, 2014). To bridge this gap, hospitality educators must continuously update curricula to reflect evolving industry demands. Research indicates a mismatch between students' perceived skill readiness and industry expectations, particularly regarding soft skills such as communication, problem-solving, leadership, emotional intelligence, and professionalism (Jefferis et al., 2020). While technical skills are important, industry leaders consistently prioritize soft skills, including work ethic, accountability, punctuality, interpersonal communication, and leadership capabilities, as critical determinants of career advancement in hospitality management (Alonso & O'Neill; Wolfe et al., 2014; McKay, 2017). Consequently, laboratory-based learning, internships, and experiential education remain essential strategies for producing graduates who are adequately prepared for the dynamic and service-driven hospitality industry.

2.2 Industry Collaboration and Experiential Learning in Hospitality Education

Collaborations with professional associations within the hospitality and restaurant industry, such as the Indonesian Hotel and Restaurant Association (IHRA), as well as partnerships with external laboratories, provide students with valuable opportunities to integrate theoretical knowledge with practical skills in real-world hospitality settings. These collaborations are complemented by experiential learning initiatives such as the On-the-Job Training (OJT) Program and Field Trip Program, which expose students to authentic work environments and help them develop the professional attitudes, competencies, and workplace behaviors required in the hospitality industry. Laboratories are widely recognized as essential components of effective teaching, particularly in science- and technology-related disciplines, as they enhance students' understanding through applied learning experiences (Father Leblond, 2019).

The housekeeping department plays a pivotal role in shaping guests' perceptions of a hotel by ensuring cleanliness, comfort, and a welcoming atmosphere that reflects the idea of a "home away from home" (Roberts, 2016). All accommodation establishments strive to provide clean, attractive, and well-maintained environments that offer value for money, as cleanliness remains one of the strongest indicators of quality in hospitality operations. No degree of service excellence or aesthetic appeal can substitute for the positive impression created by a spotless, orderly, and thoughtfully arranged guest room. The housekeeping department is therefore

responsible not only for the preparation and maintenance of guest rooms but also for the upkeep of public areas, ensuring that the entire property remains fresh and inviting throughout its operational lifespan. Since room sales account for at least 50 percent of a hotel's total revenue, the contribution of housekeeping to guest satisfaction directly influences profitability. Although housekeeping is often considered a "backstage" department, it involves significant guest interaction through services such as room cleaning, laundry handling, and turndown services. By adhering to established standards and delivering consistent service quality, housekeeping personnel play a crucial role in building and sustaining the hotel's image and reputation.

2.3 Impact of the COVID-19 Pandemic on Global Education Systems and Expansion of E-Learning and Quality Considerations in Higher Education

The COVID-19 pandemic profoundly disrupted education systems worldwide, leading to unprecedented school and university closures. In March 2020, governments in over 70 countries implemented full or partial school shutdowns to curb the spread of the virus, resulting in the disruption of learning for hundreds of millions of students globally (UNESCO, 2020; UNICEF, 2021). It is estimated that national school closures affected more than 420 million learners, while localized closures disrupted education for an additional 570 million children, leaving nearly one in five students temporarily out of school (World Bank, 2020). Higher education institutions, including colleges and universities, were also compelled to suspend face-to-face instruction and adopt non-pharmaceutical interventions such as social distancing and self-isolation (Alsoud & Harasis, 2021). Prior to the pandemic, the use of digital learning tools was limited in many countries, with fewer than 20% integrating technology into classroom instruction and only a small proportion possessing the capacity to support remote access to learning materials (Maqableh & Alia, 2021). Consequently, governments and institutions were forced to accelerate the transition to online learning to ensure educational continuity, highlighting the critical importance of internet access, appropriate technological infrastructure, and digital competence (Adedoyin & Soykan, 2020; Hodges et al., 2020).

In response to the crisis, online learning emerged as a central mechanism for sustaining education, compelling institutions that were previously resistant to digital transformation to rapidly adopt e-learning platforms. Universities worldwide, including those in Jordan, implemented emergency remote teaching strategies supported by national policies and institutional directives to safeguard students' health while maintaining academic activities (Alsoud & Harasis, 2021; Jawabreh et al., 2020). This shift intensified debates surrounding the

quality of online education, as scholars emphasize that educational quality is a multidimensional concept shaped by the perspectives of various stakeholders (Vroeijenstijn, 1995; Jahmani et al., 2020). While e-learning platforms offer flexibility and expanded access, they also present challenges related to instructional design, assessment, student engagement, and administrative management (Adedoyin & Soykan, 2020; Shahzad et al., 2021). Researchers further distinguish between well-structured online learning and "emergency remote teaching," arguing that the latter was a temporary response rather than a sustainable educational model (Hodges et al., 2020; Vlachopoulos, 2020). Nonetheless, the pandemic has accelerated digital transformation in higher education, positioning e-learning as a potentially disruptive and enduring feature of post-pandemic educational systems (Abad-Segura et al., 2020; Parker, 2020).

3. Research Methodology

3.1 Study Area

The study was conducted in Katsina State, located in the North-Western region of Nigeria. The state is known for its heritage and hospitality and has a considerable number of higher institutions. The study was carried out with the approval of the heads of the institutions, heads of libraries, and the security departments of the selected institutions within the state

3.2 Statistical Analysis

The data collected for this study were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' demographic characteristics, level of access to digital learning platforms, internet availability, perceived learning effectiveness, and challenges encountered in using digital platforms.

Inferential statistics were employed to test relationships and differences among key variables. Specifically, the Chi-square (χ^2) test was used to examine the relationship between access to digital learning platforms and perceived learning effectiveness. This test was appropriate because the variables involved were categorical in nature. In addition, the Independent Samples t-test was used to compare the mean perception of learning effectiveness between students and lecturers. All statistical tests were conducted at a 0.05 level of significance, and the Statistical Package for Social Sciences (SPSS) was used to facilitate accurate data analysis.

3.3 Data Collection

The study used a mixed-method approach to collect data from various stakeholders within the tertiary institutions in Katsina State. Structured questionnaires were distributed to a

representative sample of students, faculty, and library staff to gather quantitative data on their usage, experiences and satisfaction with digital library platforms. Semi-structured interviews were also conducted with selected participants to gain deeper insights into their experiences, challenges, and suggestions for improvement. And Focus group discussions were organized to facilitate detailed conversations about specific issues related to the digital library platforms.

4. RESULT AND DISCUSSION

Table 4.1: Distribution of Respondents by Role.

Role	Frequency	Percentage (%)
Students	270	70.1
Lecturers	115	29.9
Total	385	100.0

Table 4.1 presents the distribution of respondents by their roles in the study, showing that students constitute the majority of the sample (70.1%), while lecturers make up 29.9%. This distribution reflects the typical composition of hospital management educational programs, where the student population is naturally larger than that of teaching staff. The prominence of students in the sample ensures that the study captures a broad and diverse range of learning experiences, opinions, and challenges faced when interacting with digital learning platforms. On the other hand, including lecturers, though fewer in number, is crucial as they provide professional insights into teaching effectiveness, digital pedagogy, and the practical integration of technology in hospital management instruction. The balanced inclusion of both groups allows the study to evaluate perspectives from both the learners and educators, which is essential for a holistic understanding of the effectiveness and challenges of digital learning platforms.

The implications of this distribution are significant for both research and practice. Since students represent the majority, findings related to user experience, access issues, and perceived learning effectiveness will largely reflect the student experience, which can inform strategies to enhance engagement and support. For lecturers, the insights provided, though from a smaller group, can guide improvements in teaching methods, content delivery, and platform design to better suit both teaching and learning needs. Furthermore, the disparity in numbers highlights the importance of designing interventions that are scalable and adaptable, addressing both large student cohorts and the teaching staff who guide them. Ultimately, understanding the distribution ensures that recommendations for policy, infrastructure investment, and training programs are appropriately targeted to meet the needs of the dominant user group students

while also supporting educators to maximize the effectiveness of digital learning in hospital management.

Table 4.2: Access to Digital Learning Platforms.

Access	Frequency	Percentage (%)
Yes	308	80.0
No	77	20.0
Total	385	100.0

Table 4.2 indicates that 80% of respondents have access to digital learning platforms, while 20% do not. This access suggests effective integration of these platforms in hospital management education, benefiting most students and lecturers. However, the 20% without access represent a significant gap that could affect equitable learning experiences. The findings highlight the need for educational planning and policies aimed at improving access for all, such as providing devices and subsidizing internet connectivity, to ensure inclusivity and enhance overall learning outcomes in hospital management.

Table 4.3: Internet Availability.

Internet Availability	Frequency	Percentage (%)
Poor	116	30.1
Fair	154	40.0
Good	115	29.9
Total	385	100.0

Table 4.3 illustrates internet availability perceptions among 385 respondents regarding digital learning platforms. The data shows that 30.1% experience poor connectivity, 40.0% fair, and 29.9% good. Despite the majority having some access, 70.1% face challenges impacting their engagement with digital resources, affecting the quality of learning in hospital management education. Those with better connectivity can utilize features like interactive modules, whereas those with poor connectivity face disruptions, hindering effective learning. This situation necessitates interventions to improve internet access and reliability for students and lecturers. Recommendations include enhancing campus Wi-Fi, collaborating with internet providers, and developing flexible content delivery methods to support those with connectivity issues, essential for improving engagement and outcomes in digital learning.

Table 4.4: Perceived Learning Effectiveness.

Rating	Frequency	Percentage (%)
Very Low	74	19.2
Low	70	18.2
Moderate	79	20.5
High	83	21.6
Very High	79	20.5
Total	385	100.0

Table 4.4 presents respondents' perceptions of the effectiveness of digital learning platforms in facilitating teaching and learning in hospital management. The distribution shows that 74 respondents (19.2%) rated learning effectiveness as very low, 70 (18.2%) as low, 79 (20.5%) as moderate, 83 (21.6%) as high, and 79 (20.5%) as very high. This indicates a relatively balanced perception across the spectrum, with a slight tilt toward positive evaluations. Overall, 62.6% of respondents reported moderate to very high effectiveness, suggesting that a majority of students and lecturers recognize the benefits of digital learning platforms, such as enhanced access to learning materials, flexibility in scheduling, and opportunities for interactive learning. Nevertheless, the 37.4% who perceive low or very low effectiveness highlight that a significant portion of users still face challenges in leveraging these platforms optimally.

The effectiveness of digital learning is affected by factors including internet connectivity, device access, digital literacy, and previous technology experience. Those with good resources view digital learning as more effective, while others do not. Moderate satisfaction suggests issues with content delivery and engagement. To enhance hospital management education, institutions should prioritize adequate training, accessible content, and interactive elements that relate to real-world scenarios, as well as ongoing monitoring and feedback to improve engagement and quality.

Table 4.5: Challenges in Using Digital Learning Platforms.

Challenge	Yes (%)	No (%)
Network Issues	65.0	35.0
Lack of Training	55.0	45.0
Inadequate Devices	51.0	49.0
High Cost of Data	50.0	50.0

Table 4.5 identifies key challenges in using digital learning platforms for hospital management education. The most common issue reported is network problems (65%), followed by lack of training (55%), inadequate devices (51%), and high data costs (50%). These technological and logistical barriers hinder engagement, disrupt online learning, and create disparities. Effective

learning requires not just access but also robust support through improved internet infrastructure, user training, and affordability. Institutions must address these challenges to create an inclusive digital learning environment for both students and lecturers.

Table 4.6: Chi-Square Test. (Access × Learning Effectiveness)

Test	Value	Df	Sig. (p)
Pearson Chi-Square	9.84	4	0.043

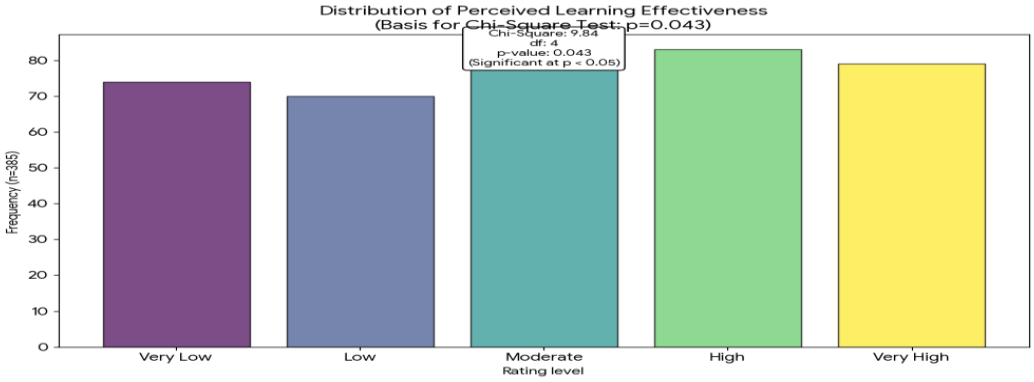

Figure 4.1: Chart showing a perceived learning distribution effectiveness.

Table 4.7: Independent Samples t-Test. (Students vs Lecturers)

Group	Mean	Std. Deviation
Students	3.42	1.21
Lecturers	3.68	1.14

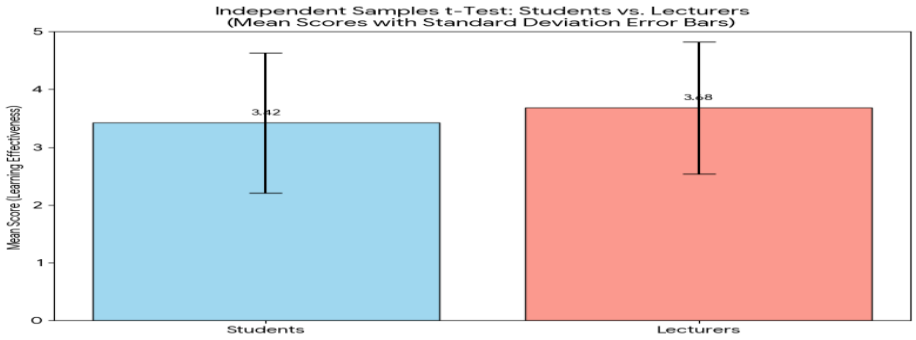

Figure 4.2: Chart showing the sample t-test for students and lecturers.

Table 4.6 presents a Chi-Square test revealing a significant relationship between access to digital learning platforms and perceived learning effectiveness, highlighted by a Pearson Chi-Square value of 9.84 (p = 0.043). Respondents with access reported higher learning effectiveness, indicating the need for educational institutions to enhance digital access and address connectivity challenges. Table 4.7 compares perceived effectiveness between students (mean = 3.42, SD = 1.21) and lecturers (mean = 3.68, SD = 1.14), showing lecturers rate the

effectiveness slightly higher. This difference may be due to varying familiarity and expectations regarding digital tools. Addressing these disparities through improved digital literacy and resource access for students is vital for enhancing educational outcomes in hospital management education.

4.2 Discussion of Findings

The findings of this study indicate that digital learning platforms play a significant role in shaping teaching and learning experiences in hospital management education. The distribution of respondents, with students constituting 70.1% and lecturers 29.9% (Table 4.1), reflects the natural composition of the educational environment and ensures that the study captures a broad spectrum of experiences. Students' perspectives provide insights into accessibility, usability, and engagement challenges, while lecturers' viewpoints offer professional reflections on teaching effectiveness and integration of digital tools. This balance allows for a holistic understanding of how digital platforms influence both learning and instruction in the hospital management context.

Access to digital learning platforms is generally high, with 80% of respondents reporting availability (Table 4.2), suggesting that institutions have made substantial progress in integrating technology into the learning environment. However, 20% of participants remain without access, highlighting potential equity gaps that could limit learning opportunities for some students. Internet availability, as shown in Table 4.3, presents further challenges, with only 29.9% reporting good connectivity and the majority experiencing poor or fair access. These findings underscore that access alone is insufficient; reliable infrastructure is critical to fully realize the benefits of digital platforms. Poor connectivity can hinder engagement, disrupt synchronous learning, and reduce overall learning effectiveness.

Perceptions of learning effectiveness are generally positive but varied (Table 4.4). A majority of respondents (62.6%) rated the platforms as moderately to very effective, reflecting the advantages of flexible access, interactive learning modules, and resource availability. Nonetheless, 37.4% of participants perceive effectiveness as low or very low, which can be attributed to challenges such as network issues, lack of training, inadequate devices, and high data costs (Table 4.5). These barriers emphasize the need for targeted interventions to enhance digital literacy, provide adequate devices, improve connectivity, and manage operational costs for learners. Without addressing these factors, the potential of digital learning platforms to enhance knowledge acquisition and practical skills in hospital management may be limited.

Statistical analyses further confirm the critical role of access and user characteristics in shaping learning outcomes. The Chi-Square test (Table 4.6) shows a significant relationship between access to digital learning platforms and perceived learning effectiveness ($p = 0.043$), indicating that learners with access are more likely to report positive outcomes. Additionally, the Independent Samples t-Test (Table 4.7) reveals that lecturers rate learning effectiveness slightly higher (mean = 3.68) than students (mean = 3.42), suggesting differences in experience, familiarity with digital tools, and instructional control. These findings imply that while digital platforms are effective overall, strategies must consider both infrastructural support and tailored training to meet the diverse needs of students and lecturers.

In conclusion, digital learning platforms in hospital management education provide significant benefits but are constrained by infrastructure, training, and accessibility challenges. Ensuring reliable internet connectivity, equitable access to devices, and comprehensive digital literacy training for both students and lecturers is essential for maximizing learning outcomes. Institutions should also consider user feedback to continuously improve platform usability, content delivery, and engagement strategies. Addressing these factors will enhance the effectiveness of digital learning, foster inclusive participation, and support the development of competent hospital management professionals capable of thriving in a digitally driven educational environment.

5. CONCLUSION

Based on the findings of the study, it is concluded that digital learning platforms play a significant role in enhancing teaching and learning in hospital management education. Access to digital platforms positively influences learning effectiveness, while inadequate internet connectivity and limited digital skills reduce the potential benefits of these platforms. Although both students and lecturers generally view digital learning positively, lecturers tend to perceive higher effectiveness than students, likely due to greater familiarity and control over instructional delivery.

However, the study also concludes that the effectiveness of digital learning platforms is constrained by infrastructural and socioeconomic challenges. Without addressing issues related to connectivity, affordability, training, and access to devices, the full potential of digital learning in hospital management education cannot be realized.

6. RECOMMENDATION

Based on the findings and conclusions of the study, the following recommendations are made:

- Educational institutions should invest in improving internet infrastructure to ensure stable and reliable connectivity for both students and lecturers.
- Regular training and capacity-building programs should be organized to enhance digital literacy and effective use of learning platforms.
- Institutions and relevant stakeholders should provide or subsidize digital devices and internet data to reduce access barriers.
- Digital learning content should be designed to accommodate low-bandwidth users through offline materials and flexible learning options.
- Continuous monitoring and evaluation of digital learning platforms should be conducted to improve usability, engagement, and learning outcomes.

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