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EVALUATING ELEARNING USER INTERFACE DESIGN IN MALAYSIAN PRIVATE HIGHER LEARNING INSTITUTIONS: A COMPARATIVE STUDY ON ACADEMIC LECTURERS' EXPERIENCE

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Abstract:

eLearning platforms are widely adopted in Malaysia to enhance teaching and learning, yet its potential remains underexploited due to limitations in usability and interface design. This study investigates the user interface design (UID) of eLearning systems in private higher learning institutions (HLIs), emphasizing academic lecturers' experiences and perceptions. A two-phase mixed-methods approach was applied and guided by the ADDIE instructional design model and the Unified Theory of Acceptance and Use of Technology (UTAUT). In the first phase, systematic observations were conducted to evaluate the UID of four private HLIs by focusing on visual presentation, layout, navigation, and interactivity. In the second phase, survey questionnaires were distributed to 200 academic lecturers to assess platform usability across five key dimensions: course quality, technical system quality, interactivity, visual design and UID quality. The findings reveal persistent usability challenges, including inconsistent layouts, text-heavy interfaces, poor navigation, and limited interactive elements. Survey results further demonstrate that these design shortcomings reduce lecturers' satisfaction and discourage deeper engagement with eLearning functionalities. The study highlights UID as a critical determinant of system usability and effectiveness in private HLIs. By identifying specific design-related barriers, the research offers insights into user experience issues that hinder adoption and sustained use of digital learning platforms. These outcomes also support national educational goals aligned with Sustainable Development Goal 4 (SDG 4), which emphasizes inclusive and high-quality education through improved digital infrastructure in higher education. Also, the study provides a comprehensive framework for evaluating

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eLearning interface usability that can guide Malaysian HLIs in improving digital learning quality and adoption.

Keywords:

eLearning, User Interface Design, Private Higher Learning Institutions, Academic Lecturers, SDG 4

Introduction

Higher education teaching and learning processes have been profoundly impacted by the Fourth Industrial Revolution's (IR 4.0) rapid digital development. In Malaysia, this shift aligns with the Ministry of Higher Education's (MOHE) goal for Education 4.0 which emphasizes the use of technology in order to enhance students' engagement and learning outcomes (Halili, 2019). As a result of this shift, eLearning platforms have emerged as key academic delivery methods, particularly at private higher learning institutions (HLIs), where digital adoption is urged to ensure institutional competitiveness and pedagogical flexibility (MIDA, 2021). Bujang, Selamat, Krejcar, Marešová, & Nguyên (2020) note that Malaysia is recognized as one of the countries actively engaging with the IR 4.0, characterized by the adoption of globalization strategies and technology-driven innovations to stimulate economic growth. Although eLearning systems are widely adopted in Malaysia, their effectiveness is determined not just by functionality, but also by the quality of the platform's UID, which has a substantial impact on usability, engagement, and long-term adoption. UID refers to the visual aesthetics, as well as the layout structure, navigation, interactivity and overall usability of a digital platform (Gunesekera, Bao, & Kibelloh, 2019). Academic lecturers, who function as both content creators and facilitators in eLearning environments, rely on a good user interface to organize materials, manage student participation, and provide teaching and learning. Despite this, many platforms continue to experience usability challenges that discourage long-term participation and limit the system's functional usefulness (Abdul Rahman, Ahmad, Nugak, & Razak, 2024). Previously, numerous studies have investigated eLearning but mainly from the perspective of students and relatively, there are only a few studies that have given attention to how academic lecturers' experiences and their interaction with these platforms, including about UID (Miya & Govender, 2022). Thus, this gap is critical as academic lecturers play an important role in structuring content, setting the assessments, and guiding students' engagement. If interface design aspects like navigation menus, content arrangement, or interactive tools are not properly integrated, academic lecturers may struggle to use the system successfully, compromising both instructional quality and learner results (Miya & Govender, 2022). Globally, HLIs are rapidly transforming teaching and learning delivery through eLearning and blended models. However, with widespread adoption, there are still many issues that are related to usability, accessibility, and UID that affect both educators and learners (Gavrus, Petre, & Lupsă-Tătaru, 2025; Simon, Jiang, Fryer, King, & Frondozo, 2024; Rovai & Downey, 2010). These similar patterns have been observed in universities across Europe, North America, as well as Asia-Pacific whereby academic lecturers often report on certain features that reduce efficiency and engagement. Thus, these global insights highlight that challenges in UID of eLearning are not only exists in Malaysia, but also a part of a wider international concern about human-centered digital education.

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Designing effective eLearning systems requires a clear understanding of users' perspectives for both students and lecturers. The development of evaluations of eLearning should reflect the users' experiences and viewpoints (Baragash, Aldowah, & Umar, 2022). Despite the active adoption of eLearning systems by Malaysia's higher education institutions, the usability and design of these platforms still have an impact on how well lecturers interact with students and impart knowledge. The majority of earlier research has concentrated on the experiences of students, leaving the interactions of instructors with eLearning UID largely unexplored. The absence of attention on lecturers' viewpoints has created a gap in knowing how UID effects teaching performance, system adoption, and long-term involvement, particularly within private HLIs. Furthermore, user-centered and accessible design is becoming more and more important in global research, but currently, there is lack of data from Southeast Asian contexts, especially Malaysia that looks at academic lecturers' actual experiences with these technologies. As a result, this study places Malaysia's situation within a larger global discussion on educator involvement and eLearning usability (Gavrus, Petre, & Lupsă-Tătaru, 2025; Simon, Jiang, Fryer, King, & Frondozo, 2024; Güntem, 2025). Therefore, to address this issue, the study investigated UID of eLearning platforms in selected private HLIs in Malaysia and focuses on the experiences of academic lecturers. The study takes a two-phase mixed-methods approach: (1) observations of eLearning platform interfaces at four private HLIs and (2) a survey of 200 academic lecturers to measure their impressions across key usability parameters. The research is guided by two frameworks: the ADDIE instructional design model (Branch, 2009), which emphasizes the importance of systematic content design, and the Unified Theory of Acceptance and Use of Technology (UTAUT) model (Venkatesh, Morris, Davis, & Davis, 2003), which sheds light on technology adoption behavior. The results of both data collection phases point to a number of enduring problems with interface design. Uncertain navigation flows, inconsistent layouts, and inadequate use of contrast and typography were also noted. The poll results reflected these concerns, with academic lecturers expressing discontent with the platforms' technical performance, visual design, and engagement. Numerous users stated that difficulties with interface design deterred them from investigating more sophisticated platform functionalities, resulting in infrequent use beyond simple resource uploading. These results highlight the necessity of assessing UID in eLearning systems critically, not just as a technical element but also as a pedagogical facilitator. Thus, by integrating established frameworks of ADDIE and UTAUT, this study contributes to a wider discourse on eLearning usability by evaluating academic lecturers' experiences through UID and behavioural perspectives and providing further recommendations that can guide private HLIs in developing more accessible and pedagogically aligned eLearning UID (Abduljawad & Ahmad, 2024). By highlighting the vital but frequently overlooked role that UID plays in influencing academic lecturers' interaction with digital learning environments, it expands on the present understanding of technology acceptance. (Rovai & Downey, 2010).

The purpose of the study is to assess academic lecturers' experiences with eLearning's UID in private HLIs in Malaysia. The study examines how current interface design elements affect academic lecturers' usability, engagement, and general satisfaction by examining survey and observational data. Through this assessment, the study provides information regarding specific design-related issues that affect academic lecturers' proficiency with eLearning systems. The Sustainable Development Goal 4 (SDG 4), which prioritizes fair access to high-quality education through enhanced digital learning settings, is one of the larger national education goals (United Nations, 2022). Thus, by highlighting real-world obstacles in digital learning infrastructure that could restrict access, quality, and instructional efficacy, the study

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specifically supports SDG 4. In addition to negatively impacting user happiness, a poorly designed user interface runs the danger of escalating digital inequality by making it more challenging for educators, particularly those who are less tech-savvy in interacting with eLearning platforms in a meaningful way. In order to support national and international efforts to modernize and democratize higher education through technology, this study looks at the human-centered design challenges faced by academic lecturers. It addresses that gap by focusing on how academic lecturers in private HLIs perceive and interact with eLearning user interfaces, an area crucial to achieving long-term digital transformation and supporting the goals of Education 4.0. The findings can be used to create eLearning systems that are more inclusive, accessible, and effective and ultimately supporting national and global efforts to modernize and democratize higher education through technology (United Nations, 2022; Zancajo, 2021; Economic Planning Unit, 2021). Lastly, the ethical approval for this study was obtained from the Research Ethics Committee of City University Malaysia, and all participants provided informed consent prior to data collection.

Literature Review

The literature review covers several key points that are relevant to the study. The section on eLearning in Malaysian Higher Education outlines national policies driving adoption while highlighting challenges in usability, readiness, and infrastructure. Furthermore, it also discusses academic lecturers' roles as instructional designers and the barriers they face, including workload, resistance, and underuse of advanced features. The chapter also emphasizes on the UID of eLearning system which includes the influence of navigation, layout, and interactivity on user satisfaction and long-term adoption, while noting the lack of user-centered design in many platforms. The quality of UID has a significant impact on academic lecturers' engagement and effectiveness in a variety of higher education systems, according to an increasing number of international research (Gavrus, Petre, & Lupsă-Tătaru, 2025; Simon, Jiang, Fryer, King, & Frondozo, 2024; Güntem, 2025). Therefore, the empirical and conceptual findings about UID usability, lecturers' adoption behavior, and instructional-design frameworks that guide successful eLearning deployment are synthesized in this literature review. Lastly, the ADDIE and UTAUT frameworks are introduced to provide complementary perspectives on instructional design and technology adoption, hence framing the study's evaluation of UID in private HLIs.

Elearning in Malaysian Higher Education

The driven of Malaysia's national initiatives such as Malaysian Education Blueprint 2015 – 2025 and MyDigital strategy have a significant impact towards the implementation of eLearning in Malaysia. Over the recent years, the use of digital technologies has grown rapidly especially in HLIs. These policies emphasize on the flexibility, technology-enhanced education that supports lifelong learning, industry-relevant skills, and greater access to quality education (Halili, 2019; EPU, 2021). In Malaysia, both public and private HLIs have responded on these initiatives by adopting a variety of eLearning platforms, either through proprietary Learning Management Systems (LMS) or open-source solutions. Previously, the usage of eLearning was initially positioned as a tool for blended learning but the digital transformation accelerated due to COVID-19 pandemic as eLearning became a central tool across all education levels (Ahmad Faudzi, Che Cob, Omar, Sharudin, & Ghazali, 2023). Moreover, especially in private HLIs, eLearning has become a necessity tool for teaching and learning, course assessment and delivery, as well as grading system. Although, eLearning has become a core method tool after

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the pandemic, the rapid shift revealed significant gaps in digital readiness, user engagement and infrastructure.

ELearning platforms are widely adopted in education sectors, especially in HLIs. But several studies have pointed out that the effectiveness of eLearning systems varies across institutions and user groups. Previous studies shows that while students often adapt quickly to digital platforms, many lecturers experience difficulties in navigating and using the available tools in eLearning platforms beyond the basic functions (Abdul Rahman, Ahmad, Nugak, & Razak, 2024). Some of the issues being raised include usability concerns, lack of training and unclear interface design. These aspects don't get much attention in institutional rollouts. In a study by Chan, Wu, Jia, Zabri, & Ismail (2025), it emphasize that the sustained use of eLearning in Malaysian universities is strongly shaped by factors such as perceived usefulness, perceived ease of use, system quality, and overall user satisfaction. The research underscores the importance of intuitive and accessible interface design in fostering continuous engagement and enhancing satisfaction among users. In terms of academic lecturers who represent the primary facilitators of digital learning, the findings suggest that eLearning platforms must be designed to be responsive and user-oriented in order to effectively support teaching and learning activities. In a different study, Gunesekera, Bao, & Kibelloh (2019) argue that the implementation of a successful eLearning platform requires more than access to technology but it also depends on system usability, user confidence, and effective instructional design. Thus, in Malaysia, the progress of eLearning mainstreaming has been notably positive, but there are still issues such as academic lecturer's experiences remains underexplored particularly in terms of UID and daily usage of eLearning.

Academic Lecturer's Acceptance and Usage of eLearning

The role of academic lecturers is important in determining the effectiveness and success of eLearning implementation. Academic lecturers play a central role in the success of eLearning adoption in higher education, as they are responsible for designing, organizing, and delivering teaching and learning experiences through digital platforms. Gameil and Al-Abdullatif (2023) emphasize that academic lecturers carry the role as instructional designers as they develop both cognitive and practical competencies that shape their teaching and learning approaches. These competencies encompass the ability to analyze, design, develop, implement, and evaluate learning environments, thereby ensuring that instructional strategies are effectively aligned with the pedagogical goals. Nevertheless, encouraging the lecturers to actively adopt eLearning platforms remains a considerable challenge. Reports of resistance often arises from the perception that these systems demand additional effort such as preparing new materials or adapting to unfamiliar technological processes. Consequently, lecturers may feel constrained by the extra time and workload required and coupled with concerns about the ability to adapt effectively to new teaching and learning methods (Muhaqiqin & Budi, 2020). Previous studies have found that many lecturers continue to adopt eLearning platforms by only using the basic functions, that is often limited to uploading course materials or sharing announcements (Abdul Rahman, Ahmad, Nugak, & Razak, 2024). Although eLearning platforms offer advanced features such as interactive assessments, forums, and real-time feedback, these tools remain underutilized due to usability challenges and a lack of training. Miya & Govender (2022) highlighted that academic lecturers' acceptance of eLearning platforms is heavily influenced by the interaction with system interfaces, especially the perceived ease of navigation and design clarity. Although institutional infrastructure and supports are available, platforms that are difficult to use or lacking in intuitive structure may lead to frustration and disengagement of

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users. Similarly, in another study, Senevirathne and Manathunga (2021) highlight that academic lecturers often struggle with digital tools that are not designed with pedagogical workflows in mind, thus creating a mismatch between teaching needs and technological capabilities. Platforms that are difficult to use or lack an intuitive structure can lead to frustration and disengagement, even when institutional infrastructure and support are available. Moreover, previous research has shown that usability barriers remain a major factor in affecting academic lecturers' motivation and long-term engagement with eLearning (Abdul Rahman, Ahmad, Nugak, & Razak, 2024; Okocha & Odinko, 2021). The barriers include cluttered layouts, inconsistent content structures, and limited customization options. All of which hinder the effectiveness of teaching and learning practices.

HLI's expectations alone are not enough to encourage full adoption, but rather, user experience and user satisfaction are equally critical in encouraging full engagement of eLearning usage. Recent literature emphasizes that academic lecturers' acceptance of eLearning goes beyond access or policy mandates. It is deeply related to the personal experiences with the eLearning platform's UID, ease of use, and alignment with teaching and learning tasks. Therefore, evaluating UID from an academic lecturer's perspective is essential in understanding how to improve eLearning adoption for long-term engagement in HLIs.

User Interface Design (UID) in eLearning Systems

UID plays a critical role in shaping the usability and effectiveness of eLearning platforms for the users, especially from the perspective of academic lecturers. While the influence of time on lecturers' experiences with eLearning platforms has been a subject of debate, existing research indicates that academic lecturers demonstrate greater willingness to adopt, utilize, and actively engage learners when the system is designed to be user-friendly and accessible, thus maintaining high-quality eLearning content is essential for fostering effective, engaging, and meaningful digital learning experiences (Maphalala & Adigun, 2021). In higher education sectors, academic lecturers use eLearning systems particularly for teaching and learning purposes, such as a course delivery and assessment system. Although technological infrastructure and system functionality are the foundation of the platforms, the quality of UID significantly influences user satisfaction, engagement, and long-term adoption (Senevirathne & Manathunga, 2021; Miya & Govender, 2022). A well-designed interface facilitates easy navigation, lessens cognitive burden, and improves the user experience in general. UID in eLearning platform includes layout, design clarity, visual hierarchy, navigation structure, typography, interactivity, and the mechanism of feedback. In recent years, previous studies have shown that many eLearning platforms in HLIs are lacking in terms of user-centered design principles (Abdul Rahman, Ahmad, Nugak, & Razak, 2024). Academic lecturers have reported difficulties of usage due to cluttered dashboards, excessive textual content, unclear menu structures, and inconsistent visual cues. These issues hinder the academic lecturer's ability to deliver content effectively (Ahmad Faudzi, Che Cob, Omar, Sharudin, & Ghazali, 2023). International research confirms that usability issues remain a dominant concern even in technologically advanced contexts. In a study by Gavrus et al. (2025), it found that within universities in Europe, the inconsistency in navigation and visual clutter has reduced instructors' efficiency and satisfaction. Moreover, Güntem (2025) identified accessibility and interaction design as critical weaknesses in Northern Cyprus universities.

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Moreover, there is a lack in terms of UID standardization across eLearning platforms that contributes to user's confusion and underutilization of features. Miya & Govender (2022) highlighted that many systems prioritize administrative and technical functions rather than pedagogical usability, hence making them less supportive of instructional workflows. Okocha and Odinko (2021) highlighted that users become less engaged and reluctant to explore more complex features, thus leads to lower engagement of users. Applying usability heuristics can greatly enhance digital learning experiences, as Abduljawad and Ahmad (2024) showed. This emphasizes the necessity of systematically assessing UID elements including feedback, consistency, and navigation signals. Similar to this, Alshehri, Rutter, and Smith (2019) pointed out that even in cases where system functionality is sufficient, a poorly organized interface deters users from continuing to use the system which is a problem that is equally pertinent to academic lecturers at private HLIs in Malaysia. Therefore, these results reflect on Malaysian findings, hence suggesting that the usability of eLearning platforms is a shared global challenge rather than a regional limitation. Furthermore, in the Malaysian higher education context, there are still very few studies being conducted that directly evaluate UID from the perspectives of academic lecturers. Thus, it creates a gap in having a better understanding of how UID influences teaching and engagement within the eLearning context. Therefore, the need to address this gap is crucial as UID is not merely an aesthetic component, but it is an essential factor that directly impacts the performance of teaching and the satisfaction of academic lecturers.

ADDIE Model and UTAUT as Theoretical Framework

This study adopts a dual-framework approach, which includes the ADDIE instructional design model and Unified Theory of Acceptance and Use of Technology (UTAUT). Both frameworks provide a guideline to evaluate academic lecturers' experiences with eLearning interface design in private HLIs. Both of the selected frameworks are widely used in educational technology research as they provide comprehensive perspectives on the design process (ADDIE model) and users' behaviour (UTAUT). ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) is a systematic instructional design framework that has been widely adopted in eLearning environments. The model supports structured development of learning experiences by ensuring alignment between goals, design strategies, and usability (University of Washington Bothell, n.d.). The significance of integrating ADDIE process is emphasized by international research such as a study by Abduljawad and Ahmad (2024) where its iterative design testing is in line with the Design and Evaluation phases, guaranteeing that UID are directly enhanced by educators' input. In addition to that, according to Alshehri, Rutter, & Smith (2019), integrating user-centered design early in the analysis phase improves learner engagement as well as the system quality. Hence, in this study, ADDIE is used to analyse the structure and presentation of UID elements, such as flow of navigation, visual hierarchy, and content layout within eLearning platforms in private HLIs.

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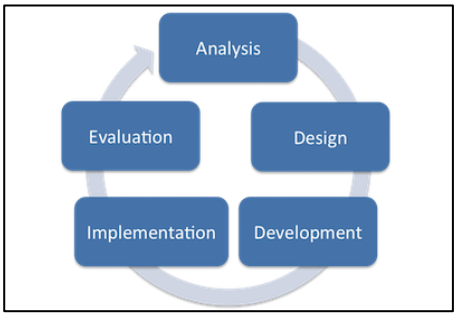

Figure 1: The Phases of ADDIE Model

Source: International Society for Educational Technology (ISFET)

Apart from the ADDIE model, the UTAUT model was also used as part of this study. The model was originally developed by Venkatesh, Morris, Davis, & Davis (2003). Today, it remains relevant in modern research and has been widely applied in digital learning studies. Its usefulness in comprehending user intents in educational systems, particularly among academic staff, has been confirmed by recent literature (Miya & Govender, 2022; Okocha & Odinko, 2021). UTAUT model includes four core constructs, which are performance expectancy, effort expectancy, social influence, and facilitating conditions, which influence users' behavioural intention and actual use of technology. In previous studies, According to Simon, Jiang, Fryer, King, & Frondozo (2024), lecturers' persistent use of eLearning was highly influenced by their performance expectations and institutional support. There are similar results in Malaysia whereby academic lecturers place a high priority on system usefulness, but when interfaces are too complicated, usability still matters most. This alignment implies a conceptual relationship between adoption behavior and usability. Thus, in this study, UTAUT is used to inform the analysis of survey data on academic lecturers' perceived usability, satisfaction, and engagement with eLearning platforms.

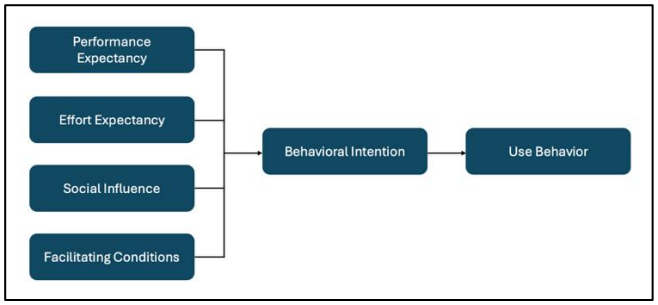

Figure 2: The UTAUT Model

Source: Unified Theory of Acceptance and Use of Technology: A Review (TheoryHub Book)

Therefore, by integrating ADDIE and UTAUT, the study bridges the design and academic lecturer's perspectives. ADDIE helps by evaluating whether the interface elements are instructionally sound, while UTAUT explains how those elements influence academic lecturers' adoption behavior. These models offer a holistic lens to assess how UID impacts eLearning usability in private HLIs. By connecting design and behavioral perspectives, this alignment enables the study to investigate how acceptance factors (from UTAUT) are influenced by instructional-design quality (Simon, Jiang, Fryer, King, & Frondozo, 2024; Alshehri, Rutter, & Smith, 2019).

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In conclusion, prior studies have focused a lot of attention on the uptake and usability of eLearning, but usually overlooked at how academic lecturers' view and react to the design elements of private HLIs. Studies conducted worldwide have confirmed that usability issues continue to exist even in highly developed environments (Gavrus, Petre, & Lupsă-Tătaru, 2025; Güntem, 2025; Abduljawad & Ahmad, 2024), indicating a global need for user-centered design frameworks. In order to assess how UID quality affects lecturers' acceptance and satisfaction in Malaysian private higher education institutions, this study integrates ADDIE and UTAUT.

Research Methodology

The study employed a mixed-methods design to investigate academic lecturers' experiences with UID in eLearning platforms at private HLIs in Malaysia. By integrating both qualitative and quantitative approaches, the research ensured a comprehensive understanding of lecturers' perceptions and actual practices. The qualitative phase involved systematic observations of eLearning platforms across selected private HLIs by focusing on user interface elements such as layout, navigation, and interactivity. Meanwhile, the quantitative phase consisted of survey questionnaires distributed to 200 academic lecturers across private HLIs in Malaysia with the purpose of capturing their perceptions of system usability, satisfaction, and effectiveness. The combination of these methods provided triangulation of data, strengthened validity, and allowed for a nuanced analysis of the role of UID in shaping eLearning adoption and engagement.

Research Design

This study employed a sequential mixed-methods design, integrating both quantitative and qualitative data collection, targeting academic lecturers from selected private HLIs by analysing and evaluating academic lecturers' experiences with UID in eLearning platforms. In the qualitative phase, four private HLIs were selected as part of the observational analysis. The selected HLIs were chosen based on the active use of the institution's eLearning platforms and accessibility to conduct this research. The eLearning platforms in these institutions varied in terms of platform types, design strategies, and digital levels, thus providing a broad view of UID practices across the higher education sectors. In addition to that, the focus on private HLIs was justified by the comparatively faster adoption of eLearning due to greater institutional flexibility and fewer bureaucratic constraints (OECD, 2021; Morshidi, Wan, & Rosni, 2017), as well as limited accessibility to public universities during pandemic-related restrictions. The final selection ensured representation from multiple faculties, reflecting a wide range of lecturer experiences with eLearning systems. Meanwhile, the quantitative phase involves a total of 200 academic lecturers whom participated in the survey questionnaires. Furthermore, within each participating HLIs, random sampling approach was applied in selecting academic lecturers who are actively utilized eLearning platforms for course delivery. This approach ensured that selected participants had relevant and up-to-date experience with UID in actual teaching and learning practices. This participants of 200 academic lecturers, representing an adequate sample size for conducting both descriptive and inferential statistical analyses, including correlation-based and Structural Equation Modelling (SEM) approaches. Based on the sample size determination by Krejcie and Morgan (1970) and further supported by Hair, Hult, Ringle, & Sarstedt (2019), a sample of 200 is sufficient to detect moderate effect sizes in behavioural research involving populations exceeding 5,000. This number also ensures reliable parameter estimation while maintaining practicality in terms of fieldwork management and resource allocation. Although this strategy made it possible to specifically include active

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eLearning users, it also restricts generalizability, which this study acknowledged. Previous usability studies that prioritized contextual familiarity over representativeness are consistent with the sample strategy.

Data Collection and Data Analysis

Data collected for this study were collected using two primary instruments, which are an observation checklist and a survey questionnaire. The observation checklist was developed based on the ADDIE instructional design model. The elements that were being focused on were visual layout, content structure, interactivity, navigation, and the platform's consistency. Furthermore, the observations were analysed by using the same standardized checklist to maintain the consistency in the procedure. Observations were conducted within four selected private HLIs around the Klang Valley area in Malaysia. The observation was conducted in order to evaluate the usability and instructional alignment including navigation flow, and content structure of eLearning platforms from the perspective of academic lecturers. To further ensure consistency in recorded observations, inter-rater reliability was established by cross-validation with an academic peer who is knowledgeable with usability testing.

The study proceed with the second primary instrument which was survey questionnaire. The survey questionnaire was designed using constructs from the UTAUT model, which was then distributed to five main key areas: course quality, technical system quality, interactivity quality, UID quality and visual design quality. A total of 31 items were included, and responses were measured by using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The survey questionnaire was distributed through Google Forms to 200 academic lecturers with experience in using eLearning platforms across private HLIs in Malaysia. This phase allows the chance to consider the same interface standards as seen in the observation phase. In conclusion, the instruments were selected to capture usability issues and users' perceptions, as well as to enable a comprehensive analysis of UID and users' experiences in eLearning usage.

The quantitative and qualitative findings were analyse and interpreted concurrently to provide a comprehensive understanding of UID issues in eLearning platforms of private HLIs in Malaysia. Data collected through observations were analysed using thematic analysis. Through the analysis, it identifies recurring UID patterns, usability challenges, and instructional design inconsistencies across the observed eLearning platforms. The observation data emphasized the flow of navigation, visual clarity, content organization, and system interactivity, which are all experienced by academic lecturers from the particular HLI. Through thematic analysis, it enabled the categorization of common usability challenges and effective interface features observed across four private HLIs. In addition, these themes were then synthesized to highlight design elements that either enhanced or hindered the teaching and learning practices of the academic lecturers.

Meanwhile, survey questionnaires were analysed using descriptive statistics. The analysis focused on identifying trends of academic lecturers' perceptions, including course quality, technical system quality, interactivity quality, UID quality and visual design quality. Moreover, measurements such as mean scores, frequency distributions, and standard deviations were used to present responses from participants. Reliability testing was conducted using Cronbach's Alpha, thus confirming the strong internal consistency across all constructs ($\alpha > 0.80$), thereby

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validating the instrument's suitability for examining academic lecturers' experiences and usage of eLearning platforms.

Ethical Considerations

The research committee of City University, Malaysia granted ethical permission for this investigation. The goal of the study, the confidentiality of the data, and the fact that participation was optional were explained to each participant. Prior to the observation and survey phases, consent was acquired. No identifiable personal information was gathered or shared, and data anonymity was preserved. The study complied with institutional policies and the ethical standards of academic research.

Findings and Discussion

This section presents the findings of the study and discusses the implications in relation to UID in eLearning platforms at private HLIs in Malaysia. The results provide a comprehensive understanding of academic lecturers' experiences and perceptions which are drawn from both qualitative and quantitative phases. The qualitative observations highlight strengths and limitations in layout, navigation, visual clarity, and interactivity. The findings offer insights into how current systems support or hinder teaching practices. Furthermore, the quantitative survey findings summarize academic lecturers' perceptions across five constructs: course quality, technical system quality, interactivity quality, visual design, and UID quality. The results reveal overall positive responses but also persistent usability challenges. The findings are arranged in accordance with the previously mentioned primary constructs and were taken from the ADDIE and UTAUT frameworks. To give a thorough picture of lecturers' experiences with eLearning UID in private HLIs, both quantitative and qualitative data are combined. Apart from that, the findings are also discussed in the context of existing literature, emphasizing the need for user-centered improvements to enhance adoption, engagement, and long-term effectiveness of eLearning platforms

Qualitative Findings: Observation

The qualitative analysis was conducted through observation on the eLearning platforms of four selected private HLIs in Malaysia. The four private HLIs were selected based on the institution's active integration of eLearning platforms, regional diversity, and accessibility for structured on-site observation. The selected institutions represented a cross-section of medium to large-scale private institutions. The observational analysis from these private HLIs revealed both strengths and areas requiring improvement in terms of UID and instructional support. Overall, the eLearning platforms effectively supported basic teaching tasks, including content delivery, uploading materials, submission of assignments, and providing announcements. However, the layout and navigation structures across the HLIs were inconsistent, with some systems displaying cluttered dashboards, redundant menu options, and poorly organized content sections. Apart from that, the visual hierarchy and aesthetics were also mixed, whereby certain platforms employed clear typography, balanced colour schemes, and logical segmentation of content, while others were characterized by excessive text blocks, lack of contrast, and minimal use of visual cues, which reduced content readability and users' engagement. Furthermore, interactivity features such as discussion forums, real-time collaboration tools, and formative feedback mechanisms were often either underdeveloped or underutilized, which leads to limited opportunities for a more dynamic lecturer-student interaction.

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Moreover, technical performance was another recurring issue with reports of slow loading times and occasional system lags during peak hours, which may have disrupted synchronous teaching and learning activities. In addition, analytics and evaluation tools were also limited, with most systems providing only basic tracking of student grades rather than offering deeper insights into learners' engagement or content interaction patterns. The results of Abduljawad and Ahmad (2024), who highlighted the importance of heuristic-based interface evaluation in enhancing usability, were in line with the observation that institutions with more design consistency showed smoother navigation and more immediate feedback. Overall, these findings show that while current eLearning platforms are functional and widely used, the UID often lacks the intuitive structure, visual consistency, and advanced interactivity that are required to fully support the digital pedagogy. Therefore, addressing these gaps through user-centered design improvements and enhanced technical features would significantly improve both teaching efficiency and academic lecturers' satisfaction.

Quantitative Findings: Survey Questionnaire

The survey questionnaires under quantitative analysis focused on five key constructs identified from the UTAUT model, and supported by relevant literature on eLearning usability and instructional design. The main key constructs are course quality, technical system quality, interactivity quality, visual design quality, and user interface design quality. Overall, respondents reported favourable perceptions across all areas, thus indicating that the current eLearning platforms generally support effective teaching and learning experiences for academic lecturers, but there is a need for improvements in enhancing the UI of eLearning platforms across HLIs in Malaysia.

Table 1: Summary Table for Quantitative Findings

Construct / Items	Mean	SD	Findings
User Interface Design Quality	4.3	0.5	Users find the interface user-friendly and well-structured. However, improvements in mobile responsiveness and layout clarity are needed.
Course Quality	4.2	0.6	Course design and flow are well supported, but some users suggest better tools for activity integration.
Visual Design Quality	4.1	0.6	Visuals are aesthetically pleasing, though some respondents noted issues with design contrast and cluttered layout.
Technical System Quality	4.0	0.7	System is stable and accessible. But improvements are needed in performance consistency during peak usage.
Interactivity Quality	3.8	0.8	Basic interactivity is present. However, there is a need for more real-time tools and collaborative features.

Based on all items, the highest-rated item was UID quality (M = 4.3, SD = 0.5). The results indicated that academic lecturers found the layout, navigation, and overall structure of eLearning platforms to be user-friendly and intuitive, thus suggesting a strong alignment between design expectations and actual interaction between users and eLearning platforms. Course quality items also received a high mean score (M = 4.2, SD = 0.6). The respondents are positively satisfied with how eLearning platforms support course delivery, content organization, and learning activities. The score for visual design quality was positive (M = 4.1, SD = 0.6), which suggests that design elements such as colour schemes, typography, and visual hierarchy contribute to ease of use, content readability, and user engagement. Findings from technical system quality (M = 4.0, SD = 0.7) showed that most users found the eLearning platforms to be stable and functional, but some variability was noted across HLIs. The lowest scoring construct was interactivity quality (M = 3.8, SD = 0.8), which indicates that while basic

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interactivity tools exist, the eLearning platforms may be lacking or underutilized in more advanced features to support collaboration, engagement, and feedback. Lower mean values in the feedback and navigation dimensions, however, point to platform-specific usability issues. This tendency is consistent with studies from around the world (Gavrus, Petre, & Lupsă-Tătaru, 2025; Güntem, 2025), which shows that poor content organization and interface fragmentation both lower user happiness and perceived efficiency. The UTAUT paradigm posits that effort expectancy and performance expectancy predict continuous use, and correlation analysis revealed significant correlations between usability, satisfaction, and intention to use ($p < 0.05$) (Simon, Jiang, Fryer, King, & Frondozo, 2024). This suggests that academic lecturers' opinions about the usability and ease of the interface have a direct impact on how users interact with eLearning platforms.

Although the overall response from academic lecturers on eLearning platforms was positive, the findings also reveal there are critical areas that require further enhancement. While UID quality received the highest score, several respondents indicated that there are challenges related to the flow of navigation, layout consistency, and responsiveness across devices. This suggests that despite general satisfaction, usability issues continue to affect overall academic lecturers' experiences, especially for those who are less familiar with digital platforms. Apart from that, visual design quality showed variation of responses, whereby some academic lecturers noted that aesthetic inconsistencies, poor contrast, or cluttered layouts reduced ease of use and users' engagement. These insights highlight the need for a more user-centered approach to refine the UID to ensure that visual elements are not only functional but also pedagogically supportive. In terms of interactivity, the lower score reflects a broader concern about limited features for real-time engagement, peer collaboration, and formative feedback. This indicates that the platforms may fulfil basic instructional functions but fall short in terms of fostering a dynamic and interactive teaching and learning environment.

Therefore, strong agreement between noted design flaws and academic lecturers' reported experiences was found by cross-analysis of the two datasets. For instance, poorer quantitative scores for usability and satisfaction are correlated with the observation's findings of limited interactivity and uneven navigation. The significance of merging survey and observation data for a thorough UID evaluation is validated by this triangulated pattern, which confirms that design problems that are visually detected also show up as user annoyance (Alshehri, Rutter, & Smith, 2019). Additionally, consistent trends were seen in both phases when the survey and observation data were triangulated. Lower ratings for design intuitiveness and engagement elements were noted by academic lecturers in survey responses, echoing the usability issues found in a number of eLearning interfaces, including poor navigation, low interaction, and ambiguous visual hierarchy. This alignment shows that design faults found during direct observation are also noticed by users in actual instructional settings, which enhances the study's internal validity. The significance of merging various data sources in user interface research to attain a comprehensive understanding of system efficacy is highlighted by this convergence (Alshehri, Rutter, & Smith, 2019; Abduljawad & Ahmad, 2024; Simon, Jiang, Fryer, King, & Frondozo, 2024).

Discussions

Based on the findings, the results confirm that UTAUT's effort expectation notion by indicating that academic lecturers favour interfaces that are visually organized and simple to use. The observed disparity in platform design quality suggests that the alignment of user tasks and

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interface structure is a critical component of system usability. This is consistent with the findings of Alshehri, Rutter, & Smith (2019), who discovered that the academic lecturers' productivity and cognitive load are enhanced by explicit visual hierarchies. Moreover, the strong relationship between usability and satisfaction supports UTAUT's theory that interface design has a direct impact on user motivation and desire to continue (Venkatesh, Morris, Davis, & Davis, 2003). These findings are also consistent with those of Simon, Jiang, Fryer, King, & Frondozo (2024), who found that interface simplicity and interaction pathway clarity were major predictors of academic lecturers' continuing use of eLearning. Lastly, the usage of ADDIE emphasizes how crucial user input and iterative assessment are to UID development. The findings of the observations point to flaws in the Design and Evaluation stages whereby the platforms frequently lacked usability testing prior to deployment. This is in line with the recommendations of Abduljawad and Ahmad (2024), who support including heuristic evaluation into early design phases to guarantee functional alignment with instructional requirements.

Overall, the study shows that a mix of usability, engagement, and satisfaction variables influence academic lecturers' opinions of eLearning UID. The interface quality has a considerable impact on lecturers' inclination to use eLearning platforms by according to survey and observation data. These results provide localized evidence to promote eLearning system changes in Malaysian private HLIs and support international studies on the significance of user-centered instructional design (Gavrus, Petre, & Lupsă-Tătaru, 2025; Güntem, 2025).

Conclusions

The study is concluded in this chapter with a summary of the main conclusions, a discussion of their theoretical and practical ramifications, and suggestions for future research and eLearning design. Using an integrated ADDIE–UTAUT paradigm, the study sought to assess academic lecturers' opinions of eLearning UID at Malaysian private HLIs. The study was conducted through a mixed-method approach by combining observations across four private HLIs and survey data from 200 academic lecturers, providing a comprehensive evaluation of how design, usability, and system features influence teaching and learning effectiveness for academic lecturers. In addition to its practical contributions, this study also advances theoretical understanding by applying the ADDIE model and the UTAUT framework to evaluate the relationship between UID and eLearning experiences among academic lecturers. By focusing on private HLIs in Malaysia, the research addresses a notable gap in the literature where most prior studies have concentrated on students' perspectives or broader system adoption without a specific emphasis on academic lecturers' daily experiences with UID. The findings revealed that while academic lecturers generally held positive views toward UID, course structure, visual presentation, and technical stability, there are still several critical areas that warrant improvement. One of the main concerns is the interactivity quality due to the limited implementation of collaborative tools and real-time engagement features. Additionally, through findings from observations, there are raising issues regarding navigation consistency, visual hierarchy, and analytics capability, thus pointing to the need for more user-centered design strategies for the enhancement of eLearning platforms.

These insights carry practical implications for higher education institutions, particularly under digital infrastructure and instructional design to improve the eLearning platforms' usability and interactivity for better engagement by academic lecturers. These improvements are not only for increasing teaching efficiency but also to enhance users' engagement and satisfaction.

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Theoretically, by combining models of UTAUT and ADDIE, this study adds to the expanding conversation on eLearning adoption. The combination of ADDIE and UTAUT shows how behavioral intention and the quality of instructional design can be assessed together. By integrating UTAUT into user interface design contexts, this dual-framework method broadens its applicability and offers a more comprehensive knowledge of how academic lecturers' engage with eLearning platforms. Moreover, the study contributes to Sustainable Development Goal 4 (SDG 4) by reinforcing the need for inclusive and high-quality digital education systems. This study underscores the importance of ongoing platform evaluation, particularly the UID. Academic lecturers' feedback and UID improvements will ensure that eLearning platforms remain effective, accessible, and pedagogically aligned within Malaysian higher education.

The study has met its goals but has certain drawbacks. The results' applicability to public institutions is limited by the study's focus on four private HLIs in Malaysia. Future research should evaluate platform-specific design characteristics across eLearning systems and broaden to encompass a variety of institutional contexts, including public HLIs. To learn more about academic lecturers' design choices and emotional involvement with eLearning systems, qualitative interviews could also be used. Additionally, longitudinal research would be useful in assessing the long-term effects of consistent exposure to enhanced interfaces on behavioral intention. Further research on comparative studies across different countries or regions may also provide deeper insights into how cultural, institutional, and technological factors influence UID expectations and adoption. In conclusion, this study contributes both practical and theoretical insights into enhancing eLearning usage by underscoring that responsive, user-centered interface design is critical not only for improving academic lecturers' teaching efficiency and satisfaction but also for ensuring the long-term success of digital learning initiatives in higher education. Understanding and improving eLearning interface design is crucial to creating teaching and learning environments that are digitally empowered as Malaysia moves closer to its Education 4.0 and IR4.0 goals. This study confirms that academic lecturers' use of eLearning platforms is heavily influenced by user interface design. UTAUT's behavioral insights and ADDIE's methodical design process combine to provide a well-rounded framework for comprehending and enhancing digital uptake in higher education. When taken as a whole, the findings offer both theoretical development and empirical support to help institutions move toward eLearning systems that are more user-centered and pedagogically sound.

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