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Determinants of Learning Management System Implementation: The Role of Accessibility, Usability, and Digital Literacy on Students Satisfaction in UiTM Campus Seremban

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Abstract

Learning Management Systems (LMS) have become a crucial part of higher education and understanding user-centric aspects is essential to maximise their effectiveness. This study aims to examine how usability, accessibility and digital literacy affect students' satisfaction in using LMS at Universiti Teknologi MARA (UiTM) Seremban Campus. A quantitative survey design was used and data were analysed using descriptive statistics, Pearson correlations, and multiple regression analysis and 386 undergraduate students were included across 3 faculties. The results show that there are significant positive relationships between each of the three underlying concepts of usability, accessibility, and digital literacy with the students' satisfaction. Digital literacy and usability were found to be the strongest variables, showing that although stable access to the system is crucial, adequate digital competencies among students and an intuitive system design are essential for improving digital learning. This research provides empirical evidence from a branch campus context and concrete suggestions for institutions to fine-tune the LMS design and provide targeted digital literacy support.

Keywords: Usability, Accessibility, Digital Literacy, Learning Management System, Student satisfaction

Introduction

Learning Management System (LMS) has emerged as a rapid advancement of digital technologies that transformed the landscape of higher education, as essential tools for facilitating teaching and learning. It is an accessible and flexible digital platform that facilitates virtual interactions, resource sharing, and a personalised learning experience for the

educators and students across diverse locations (Mahat et al., 2024). The COVID-19 pandemic accelerated this shift, compelling universities worldwide to integrate online and blended learning methods as the primary mode of instruction (Baharuddin et al., 2022). At Universiti Teknologi Mara (UiTM), platforms such as Student Portal, MyStudent and UFUTURE are central to academic continuity. These platforms are crucial in maintaining the delivery of education to students without any disruption. The role of LMS is crucial because it can ensure that this platform remains the university's mainstay in the world of digital learning. The importance of digital learning environments is increasing as online and blended learning continues to grow to help students. As dependence on technology in teaching and learning grows, higher learning institutions need efficient and transparent systems to deliver content, provide information through the right channels, and enhance communication between students and instructors. However, despite the growing use of LMSs, institutions need to address the issue of how effective these platforms facilitate meaningful student engagement, student satisfaction, and their academic achievement.

Past studies suggest that the effectiveness of learning management system is contingent upon a combination of system quality, accessibility, learner engagement, instructor support, service quality and technological readiness (Al-Fraihat et al., 2020; Alkhuzaimi et al., 2025; Lawali et al., 2026). While LMS platforms are extensively implemented, many are underutilised since students predominantly use them mainly to access lecture notes, submit assignments or completing assessments, with collaborative and interactive features are significantly less used (Awad et al., 2019; Simon et al., 2025). This pattern suggests that LMS use in higher education remains content-delivery oriented rather than entirely focused on interactive learning, peer collaboration and continuous two-way communication between students and lecturers. Students also often face practical barriers that limit meaningful use of LMS platform including difficulties with navigation, unclear course organisation, limited interaction, delayed or poor feedback, digital literacy gaps and insufficient training or technical assistance (Alkhuzaimi et al., 2025). Access-related problem further reduces effective use of LMS, especially when students face unstable internet connections, limited devices, slow page loading or any broader infrastructural constraints (Alkhuzaimi et al., 2025; Lawali et al., 2026). In the context of UiTM, these issues are relevant since the university has implemented the usage of various LMS platform including UFUTURE, and evidence shows that content accessibility, system quality and service quality is important in determining student satisfaction (Sulaiman et al., 2023).

Given that the existing LMS implementations frequently do not address students' actual learning needs, a gap remains between the technical capabilities of these platforms and their practical effectiveness in supporting meaningful learning experiences. Although previous studies have identified the determinants of LMS effectiveness including system quality, service quality, instructor quality, learner attributes and perceived usefulness, additional empirical research is essential to form a better understanding of the impact of usability, accessibility and digital literacy on student satisfaction in specific institutional contexts (Almusharraf, 2024; Al-Fraihat et al., 2025). This focus is crucial as student satisfaction is closely linked to engagement, perceived learning outcomes and academic performance, which is strengthened when LMS platforms provide clear interaction, relevant content and supportive learning environments (Almusharraf, 2024; Li & Ni, 2024).

The existing empirical literature also uncovers several significant oversights. First, many studies only examine the general determinants of satisfaction in single institutions such as ease of use, usefulness and system quality without isolating accesability and digital literacy as distinct predictors (Alkhateeb & Abdalla, 2021; Nguyen, 2021; Toring et al., 2023). Second, findings on usability are inconsistent, in which perceived ease of use significantly predicted student satisfaction (Ohliati & Abbas, 2019; Alkhateeb & Abdalla, 2021), but not in the other (Ghazal et al., 2018). In addition, LMS quality can sometimes affect satisfaction indirectly (Diep et al., 2017). Third, studies also tend to focus on single main campuses (Hussein & Hilmi, 2021; Simelane-Mnisi & Mthimunye, 2025) and neglect branch-campus contexts which may be operating with different infrastructure and student demographics. Therefore, this study aims to enhance current understanding by examining student satisfaction with the LMS at UiTM Seremban Campus by evaluating together accessibility, usability and digital literacy as key determinants. Insights from this study are expected to guide improvements in LMS design and implementation to create digital learning environments that are more interactive, accessible and responsive to students' needs.

Literature Review

This study investigates the factors influencing student satisfaction with Learning Management Systems (LMS) at Universiti Teknologi MARA (UiTM). This study focuses on three independent variables including usability, accessibility, and digital literacy. Student satisfaction is an important indicator of the LMS's effectiveness, indicating its ability to satisfy learning needs through ease of use, resource availability, and overall support. Prior studies suggest that inaccessible systems limit student engagement in which this phenomenon is a relevant concern for institutions like UiTM Seremban 3 that serves a diverse student population with differing socioeconomic backgrounds and digital readiness (Annamalai et al., 2021). Thus, this research examines the relationship between these key variables to understand their collective impact on student satisfaction based on the conceptual framework grounded in established theories.

Accessibility

Accessibility refers to the design of digital tools and learning platforms so that they can be used by all users, including across all devices and different internet levels. Research shows that accessible digital design improves usability and inclusion (Lomellini et al., 2025). This includes all features designed to facilitate learning and participation for students taking courses online. Accessibility is important as it will benefit students, including those with disabilities. Past studies have indicated that digital accessibility is an essential need for students with disabilities because some of them are unable to directly engage in learning, and they need accessible systems so that their experience is similar to that of non-disabled students (Ndlovu, 2026). However, online education is facing various challenges. The key challenges to online education include infrastructure issues, devices used and the usability of those devices to ensure effective access. These challenges prove that accessibility is an important component in achieving an equitable level of digital education (Marsden et al., 2025). This also somehow highlights the role of accessibility in today's digital education landscape.

Students from rural or low-income backgrounds face major barriers in accessing information online. Tadesse and Muluye (2020) stated that students from rural and low-income families

face serious challenges because they lack access to internet connections and digital devices. It shows that the ability of students to engage in learning environments is affected by unequal access and poor accessibility. They often face problems accessing materials online. Differences in internet access are also a problem for them because it can limit internet usage (Korkmaz et al., 2022). This situation will limit their participation in education. Therefore, relevant and related parties, mainly the government needs to investigate this problem to strengthen the structure and enhance the experience of online learning. These challenges are particularly relevant to many Malaysian university students, most of whom commute from areas where connectivity does not reach a suitable level for accessing the internet (Nagaratnam, 2023).

The problems of inaccessibility are caused by technical difficulties, connectivity fraud, and the use of outdated technical equipment which has negative implication on student motivation and learning satisfaction. Students who experienced online access problems more often demonstrate lower levels of engagement which somehow reduced their satisfaction with the online learning system (Sharif Nia et al., 2023). These outcomes were most probably caused by insufficient information that the students received for their learning. Patricia Aguilera-Hermida (2020) also shows that student acceptance and engagement in online learning is greatly influenced by the complete and fast accessibility of the system. The findings highlighted that when digital platforms fail to meet the needs of their users, students are further marginalized and deprived of meaningful learning processes. This issue is particularly important because the universities are commonly having a large student population and they may face ongoing connectivity barriers.

Usability

The effectiveness of LMS in tertiary education may be significantly shaped by its usability, particularly how easily the students can access features, navigate the platform and complete the learning task (Binyamin et al., 2019; Nasir et al., 2021; Almusharraf, 2024). In higher education, the usability of LMS appears to be among the major determinants of the LMS acceptance while use-friendly and interactive features and well-structured platforms significantly affect student satisfaction and engagement because they are more likely to interact with systems that are easy to use and understand (Almusharraf, 2024; Al-Fraihat et al., 2025).

Ease of use and interactivity also influence students' attitudes toward LMS adoption and usage, suggesting that usability plays a central role in how students perceive and accept digital learning tools. In the Malaysian blended-learning context, perceived ease of use, interaction, and facilitating conditions were significantly associated with student satisfaction in LMS usage (Nasir et al., 2021). Interactivity appears to matter particularly for students' satisfaction because they valued discussion forums and interaction with peers and lecturer (Nasir et al., 2021). These findings indicate that positive user experiences characterised by good usability, clear organisation, ease of use and interactive features contribute substantially to student satisfaction and engagement and continued use in tertiary education (Nasir et al., 2021; Almusharraf, 2024)

Usability in learning management system refers to how easily and effectively students can navigate the platform, access its features and complete the learning task. Usability has

become an important aspect to consider in planning, development and evaluation of the e-learning systems, considering that user-friendly interfaces and effective usability are key determinants of LMS success, acceptability and use (Alqurni, 2023). High usability systems are designed with straightforward user interfaces, simple visuals, and supportive error-management capabilities that encourage user satisfaction and system acceptance. According to Orfanou et al. (2015), usability is a key requirement of educational software as it strongly shapes student learning effectiveness and the overall learning experience in higher education. The study also found that LMS usability was at satisfactory level that supporting the view usable platform are central to effective e-learning design. In addition, the same study also showed that the system usability scale is a valid and reliable way to assess LMS usability, reinforcing this aspect as a measurable factor in LMS development and evaluation.

Learning Management System (LMS) is an important component of e-learning as they support the delivery and management of learning activities, and their usability helps in determining the users' ability to complete task effectively easily and with satisfaction (Thuseethan et al., 2014). Usability is treated as a key concept in human-computer interaction (HCI), defined in terms of how easily users can learn, operate and interpret a system, and better HCI design is associated with greater ease of use and user satisfaction (Thuseethan et al., 2014). Usability also improves the students learning experience and is considered a crucial component of LMS design and development, which is why system layout, functionality, learnability, satisfaction and future use are common targets of usability evaluation and continuous system improvement (Nielsen, 1994; Thuseethan et al., 2014). According to Issa and Isaias (2022), usability is becoming core aspects for the system development process in upgrading the system facilities to enhance users' satisfaction while HCI will support the design of the system to ensure the system meets the user needs while building a user-friendly system.

Digital Literacy

With the increased use of Learning Management Systems (LMS) in higher education, digital literacy has become a core requirement for effective participation in online learning (Nikou & Aavakare, 2021; Farias-Gaytan et al., 2023). Digital literacy extends beyond technical abilities but also includes technical, cognitive, communicative and socio-emotional skills such as assessing, evaluating, managing, interpreting and sharing digital information appropriately (Ng, 2012; Nikou & Aavakare, 2021; Gutiérrez-Ángel et al., 2022). These competencies are directly related to LMS use because digital platforms support communication, assessment, learner progress tracking and online academic interaction where all these would require students to navigate tools and use digital technologies efficiently (Nikou & Aavakare, 2021; Nguyen et al., 2023).

Students who lack of digital literacy often struggle to translate the platform access into effective learning because digital literacy shapes performance expectancy, effort expectancy and willingness to use the digital technologies in higher education (Nikou & Aavakare, 2021). Across higher education studies, stronger digital competence or readiness is consistently associated with greater acceptance of digital learning, higher perceived ease of use and usefulness, and stronger satisfaction with the LMS-supported learning (Scheel et al., 2022; He & Tao, 2026; Koh & Ling, 2026). Regardless of how complex or well-designed the system is, students may find it difficult to fully utilise LMS features if they lack adequate digital literacy. Digital skills also support the conversion of system quality into a better learning experiences

as they strengthen the pathway from e-learning quality to learning engagement and student satisfaction (Luo & Li, 2026). Students' ability to understand and use the LMS features seems to be a crucial prerequisite for stronger engagement which subsequently leads to better academic results (Kim et al., 2019).

Evidence from post-COVID period suggests that digital literacy has become a practical requirement for successful participation in online and hybrid learning. The sudden shift to online learning created a need for specific digital skills and made it difficult for many students to adapt to new learning approaches (Inan Karagul et al., 2021). Students with poor digital literacy and lower levels of motivation were less successful in online learning, while limited familiarity with the hardware, software and online platforms also impacted understanding and reduce satisfaction (Li, 2022; Yu, 2022). Even when students have adapted over time, they still reported difficulty in maintaining motivation, getting an overview of course demands and dealing with fragmented communication across multiple platforms (Almendingen et al., 2021). Digital literacy plays a role in communication and collaboration in LMS settings because effective collaboration partly depends on learners readiness, past exposure to online platforms and the usability of technologies used (Al-Jarf, 2026). LMS tools including forum, discussion spaces and group-work features can enhance communication, knowledge sharing and collaborative skills specifically when students are ready to use them and the active participation is supported through course design and instructor guidance (Ananta et al., 2024; Herayanti et al., 2025).

In the context of Malaysian higher education, digital literacy among students remains uneven. Literature cautions against the assumption that all students are naturally proficient just because they frequently use digital devices (Shariman et al., 2012). Despite the fact that many students in Malaysia frequently use electronic devices such as smartphones and tablets, their proficiency is often limited to the use of social media, rather than academic or learning-oriented applications (Md Yusof et al., 2023). The gap widens when the students are expected to use LMS features such as online discussions, assessments, collaborative tools and digital learning resources because students with higher levels of technological competence tend to perceive the LMS as easier to use, more useful and more satisfying (He & Tao, 2026; Koh & Ling, 2026). In addition, studies have shown that students' capacity for interest in participating in autonomous online learning is significantly influenced by their level of digital literacy. According to Mohamed Shuhidan et al. (2022), there is a substantial correlation between digital literacy and learning engagement. These results demonstrate that digital literacy is a key factor in the effective adoption of LMSs rather than just a supporting ability.

Student Satisfaction

Student satisfaction relates to how learners evaluate their educational experience in which it tends to grow when the learner's actual experiences meet or exceed their expectations (Chandra & Fitriyanto, 2024). Students generally report satisfactory e-learning experiences when essential conditions are met particularly when their needs for autonomy, competence and relatedness are fulfilled (Hsu et al., 2019; Chiu, 2022; Sari et al., 2024). Learning Management System (LMS) is essential for knowledge acquisition and learning management in the digital era and users' attitudes toward these systems are significant since their satisfaction affects the ongoing usage and institutional sustainability (Mtebe & Raphael, 2018; Yuen et al., 2019; Nguyen, 2021). Findings from LMS research suggest that students often

report a generally positive level of satisfaction but the satisfaction depends on a combination of system quality, usefulness, interaction and support services (Al-Samarraie et al., 2018; Mtebe & Raphael, 2018; Nguyen, 2021; Almusfar, 2025).Therefore, student satisfaction with LMS is among the essential factor in assessing the effectiveness of educational technology adoption, considering that satisfaction is an important predictor of system success, learning benefits, loyalty and continued use (Mtebe & Raphael, 2018; Al-Fraihat et al., 2020; Almusfar, 2025). Specifically, the successful adoption of LMS depends on the quality of digital instructional materials, platform usability, the digital proficiency of both educators and learners, as well as sufficient institutional and technical support (Herniawati et al., 2025; Al-Jarf, 2026). When pedagogical, technological and organisational factors are aligned, LMS can serve as strategic tools that facilitate flexible, adaptive, personalised and sustainable learning within higher education environment (Herniawati et al., 2025; Al-Jarf, 2026).

In distance and online learning, the level of student satisfaction with learning management system is significantly influenced by the quality and arrangement of course content, the usability of the platform, the accessibility of learning materials and the convenience with which students can complete learning activities and assessments (Nguyen, 2021; Simelane-Mnisi & Mthimunye, 2025). Student satisfaction with LMS can be understood as the benefits users perceive from using the system and as indicator of their overall beliefs and attitudes toward it (Simelane-Mnisi & Mthimunye, 2025). In e-learning context, it refers more specifically to the extent to which the LMS meets the informational needs and satisfaction of the students (Nasir et al., 2021). Empirical research suggest that students are often satisfied with LMS features such as interactivity, accessibility, instructional content and convenience, with usability and convenience are among the highest ranked aspects of the system (Nasir et al., 2021; Prifti, 2022; Lawali et al., 2026). In other studies, student satisfaction is shaped by perceived usefulness, engagement, information quality, system quality, service quality and convenience, and this satisfaction often supports the continuity of LMS use (Hussein & Hilmi, 2021; Suyitno & Munandar, 2026). More specifically, there is a study that reported indirect effect of system use on satisfaction is not significant, with perceive ease of use and system quality having significant direct effects on satisfaction (Chandra & Napitupulu, 2021).

Students tend to be dissatisfied when the LMS support is insufficient, besides having restricted features and limited user experience (Abu- Snoubar, 2021). A study by Nasir et al. (2021) reported that, student will be satisfied when the LMS support is sufficient. In general, student satisfaction is important as it reflects learners' evaluation of how well the LMS support their learning experience and fulfils their needs and expectations in digital environment (Martin & Bolliger, 2022; Li & Ni, 2024; Simelane-Mnisi & Mthimunye, 2025). In this context, student satisfaction includes students' overall perception to their online learning experience based on whether the system's actual performance meets their expectations (Li & Ni, 2024; Simelane-Mnisi & Mthimunye, 2025). Since learning management system is a digital platform which is used to develop, deliver, manage and support courses, learning resources, activities, assessment and interaction between students and instructors (Dahal & Manandhar, 2024; Jain et al., 2024), student satisfaction with LMS use is often considered as a significant indicator of quality and efficacy of online learning in higher education.

Conceptual Framework

Figure 1 conceptualised the framework of this study. This framework proposes a direct relationship between accessibility, usability and digital literacy with students' satisfaction of the LMS system. This framework integrates the basic principles of the Information System (IS) Success Model (Delone & McLean, 2003) and Technology Acceptance Model (TAM) (Davis, 1989). The framework posits that the student satisfaction of the LMS at UiTM Seremban Campus is contingent upon three variables which include accessibility, usability and digital literacy.

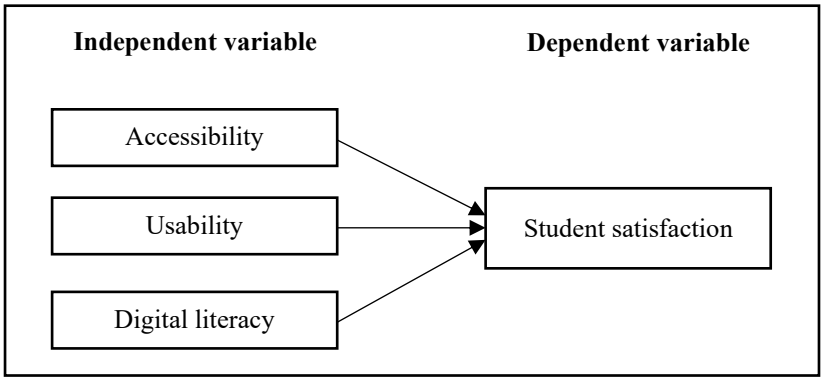


Figure 1 Conceptual Framework on LMS

Existing literature establishes a positive relationship between usability, accessibility and digital literacy, with student satisfaction acting as a reinforcing factor. However, distinct research gaps remain, as most studies focus on main university campuses, ignoring the unique context of branch campuses such as UiTM Seremban Campus, where the infrastructure and student demographics may differ. Therefore, this study aims to fill the gap by providing localised findings to improve the implementation and effectiveness of LMS, specifically among students in UiTM Seremban Campus.

This study proposes three hypotheses:
H1: LMS usability has a positive effect on student satisfaction.
H2: LMS accessibility has a positive effect on student satisfaction.
H3: Digital literacy has a positive effect on student satisfaction.

Methodology

This study examined the relationship between accessibility, usability, digital literacy and student satisfaction with the Learning Management System (LMS) among students at UiTM Seremban Campus. Therefore, a quantitative research design was adopted to conduct a survey. The study population consisted of three faculties, namely Faculty of Administrative Science and Policy Studies (FSPPP), Faculty of Computer and Mathematical Science (FSKM), and Faculty of Sports and Recreation (FSR) with approximately 5,742 undergraduate students across various faculties. Following the Krejcie and Morgan (1970) sample size table, this study requires at least 361 respondents for the data collection. This study employed a convenience sampling technique, as it provided a practical and efficient method to rapidly gather responses from a readily accessible pool of active LMS users on campus. A total of 386 questionnaires were distributed, which is more than the required sample size to mitigate any possibility of non or lower response rate.

The survey was administered using online and on-site approaches. Specifically, the online approaches use the Google Forms, and distributed via WhatsApp and Telegram of the class groups with the assistance of class representatives. The researchers conducted on-site data collection by approaching students around the campus library and asking those who were available to complete the survey using the Google Form provided. Participation was completely voluntary, and informed consent was obtained from each respondent before answering the survey.

Data were collected using a structured questionnaire which the items were adapted from previous studies. All items were measured on a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) and analysed using SPSS. To ensure reliability, the instrument was assessed using Cronbach's alpha where the value of 0.60 or above is considered as acceptable (Nunnally & Bernstein, 1994). Therefore, this study has conducted a pilot study for reliability purpose. Based on Table 1, the items in every section of the questionnaire recorded the Cronbach's alpha value of more than 0.60, making it reliable to be proceed for the actual data collection. In addition, this study also assessed the normality of distribution. According to Kline (2005), normality was assessed using skewness and kurtosis values within the acceptable ranges of -3 to +3 and -10 to +10, respectively. According to the test result shown in Table1, the data is normally distributed.

The next part explain the descriptive statistics used to summarize the characteristics of the respondents, while Pearson correlation and multiple linear regression analysis were used to examine the relationships between the study variables.

Table 1
Measurement of variables and normality test

Variables	No Items	Skewness	Kurtosis	Cronbach's Alpha
Accessibility	8	-0.350	0.465	.853
Usability	7	-0.350	0.465	.853
Digital Literacy	7	-0.591	1.468	.848
Student Satisfaction	7	-0.681	1.134	.902

Results

Demographic Profiles

The demographic profiles of this study are measured by using 1) the average or central tendency of the respondent's responses and 2) the standard deviation to indicate the degree of variation between individual responses and the mean. The mean age score (1.10, SD = 0.302) in this study indicates that the majority of participants belong to the same age category with minimal dispersion indicating that the age distribution is relatively homogeneous. The mean of the gender variable is 1.69 (SD = 0.461), meaning that one gender group is more common in the sample, but the range of gender responses is moderate. On current education level, the mean is 1.76 (SD = 0.425) indicating that most respondents have the same level of education and their answers are not diverse. The item faculty showed a mean of 1.51 (SD = 0.725) indicating that respondents were from a few dominant faculties although with a small dispersion compared to other demographic attributes. The

mean and standard deviation of demographic such as age, gender, education level and faculty affiliation are reported in the study because they are important in quantitative research as they provide background information about the sample and help in the interpretation of the study results.

Table 2
Demographic Profiles

Item		Frequency	Percentage
Gender	Male	118	30.6%
	Female	268	69.4%
Age	18-23 years old	347	89.9%
	24-28 years old	39	10.1%
Current level of education	Diploma	91	23.6%
	Degree	295	76.4%
Faculty	Faculty of Administrative Science and Policy Studies (FSPPP)	241	62.4%
	Faculty of Computer and Mathematical Science (FSKM)	92	23.8%
	Faculty of Sports and Recreation (FSR)	53	13.7%

Pearson Correlation Analysis

Pearson correlation analysis was conducted to examine the relationship between usability, accessibility, digital literacy with student satisfaction of the Learning Management System (LMS). The results of the correlation analysis are presented in Table 3. Overall, the findings of the study showed that all independent variables were positively correlated with student satisfaction. This indicated that improvements in usability, accessibility, and digital literacy were associated with higher levels of satisfaction among students when using the LMS. The positive direction of this relationship indicates that when students perceived the LMS to be easier to use, more accessible, and supported by adequate digital skills, their overall satisfaction with the system increased. These results provide initial support for the proposed hypothesis and warrant further analysis using multiple regression to determine the predictive power of each variable.

Table 3
Correlation Analyses

		Satisfaction	Accessibility	Usability	Digital Literacy
Sig. (1-tailed)	Satisfaction	.	.000	.000	.000
	Accessibility	.000	.	.000	.000
	Usability	.000	.000	.	.000
	Digital Literacy	.000	.000	.000	.

Multiple Regression

Multiple regression analysis was conducted to examine the extent to which usability, accessibility and digital literacy predict student satisfaction with LMS. The regression results are presented in Table 4. The findings show that the regression model explains a significant portion of the variance in student satisfaction, indicating that the selected independent variables collectively contribute to the student LMS experience. Among the predictors,

usability and accessibility emerge as significant contributors to student satisfaction. This indicates that students are more satisfied when the LMS is user-friendly, organized and easily accessible across different devices and locations. Digital literacy also contributes to the model, indicating that students with higher levels of digital proficiency are more able to engage with LMS features, complete academic tasks and communicate effectively within the system. Although its influence may be smaller, digital literacy remains an important supporting factor in increasing LMS satisfaction. The absence of multicollinearity issues further confirms the robustness of the regression model, indicating that each independent variable contributes uniquely to explaining student satisfaction.

Table 4
Regression Analyses

	Cronbach's Alpha	Beta	Sig.	Tolerance	VIF
Accessibility	.853	.168	.000	.519	1.927
Usability	.879	.312	.000	.423	2.364
Digital Literacy	.848	.414	.000	.377	2.655

Discussion

This study examined the relationship between usability, accessibility, digital literacy and student satisfaction with a Learning Management System (LMS) at UiTM Seremban Campus. The findings of this study indicate that all three factors contribute positively to students' satisfaction when using an LMS. The findings indicated that all three factors are positively associated with satisfaction. This is generally consistent with prior LMS research that showing student satisfaction is shaped by ease of use, system quality, information quality, self-efficacy and the quality of the overall e-learning experience (Nasir et al., 2021; Prifti, 2022). The positive relationship between usability and student satisfaction suggests that students are more satisfied when LMS is easy to use, simple to navigate and aligned with their learning task. This interpretation is supported past studies that emphasise perceived ease of use is a predictor of students' satisfaction in using LMS, and that user-friendly interfaces, interactivity and relevant content improve engagement and acceptance (Chandra & Napitupulu, 2021; Alqurni, 2023; Almusharraf, 2024). The present finding also supports the notion that the effectiveness of LMS depends not only on the system's technical features but also on the students' ability to use it with ease and confidence. Past studies have shown that perceived ease of use is a significant determinant of LMS satisfaction (Ohliati & Abbas, 2019; Chandra & Napitupulu, 2021; Almusharraf, 2024).

Accessibility also had a positive impact on student satisfaction, suggesting that students appreciate LMS that is stable, flexible and easy to access across locations and devices. Prior studies indicate that the accessibility, convenience and ability to use the platform anytime and anywhere enhance both user satisfaction and sustained use of LMS (Ohliati & Abbas, 2019; Hussein & Hilmi, 2021; Prifti, 2022; Suyitno & Munandar, 2026). This finding shows that accessibility is crucial for student satisfaction, with good accessibility and connectivity are the most significant aspect to be considered in determining student satisfaction (Patricia Aguilera-Hermida, 2020; Sharif Nia et al., 2023). The findings also show that digital literacy contributes positively to student satisfaction with LMS in UiTM Seremban Campus, suggesting that students with stronger digital skills will be more efficient in using LMS tools

and therefore report a more positive learning experience (Luo & Li, 2026). Students with stronger digital capability also seem to appear more confident to navigate LMS features, participating in online task and maintaining communication through the platform which helps to reduce complexity in use and improves satisfaction (Nasir et al., 2021; Prifti, 2022). Notably, digital literacy emerged as the strongest predictor of satisfaction in this study. This suggests that despite being frequent users of smartphones and social media, students require specific, academic-oriented digital competencies to successfully navigate complex LMS features such as online assessments, structured forums and collaborative tools. When students possess these targeted academic digital skills, platform frustration decreases, and their overall satisfaction with the digital learning environment significantly improves. Overall, the result of this study reports higher student when the LMS is usable, accessible and supported with adequate digital literacy. In the context of UiTM Seremban Campus, the results confirm that the effectiveness of LMS not only depends on the technical system characteristics but also on the ability of students to use the system effectively.

Furthermore, these findings successfully validate the foundational principles of the Technology Acceptance Model (TAM) and the Information Systems (IS) Success Model within a branch campus context. Specifically, the strong influence of usability aligns perfectly with TAM's perceived ease of use, while the significance of accessibility reinforces the system quality dimension of the IS Success Model, collectively demonstrating that user-centric design and technical stability are absolute prerequisites for student satisfaction.

Conclusion

This study provides empirical evidence on the factors influencing student satisfaction with the Learning Management System (LMS) at UiTM Seremban Campus. The findings confirm that usability, accessibility, and digital literacy are important determinants of LMS satisfaction among the students. Students are more satisfied when the LMS is easy to use, accessible at all times, and supported by adequate digital skills. The study significantly contributes to the theoretical and practical discussion of online learning integration by highlighting the impact of the system-related infrastructure and individual digital skills within Malaysian higher education, in particular UiTM Seremban Campus. From a theoretical perspective, the findings strengthen the information system success and technology adoption frameworks by highlighting that student satisfaction is not only an outcome of interface design. Rather, it is a complex function driven by accessibility, usability and digital literacy. Practically, these findings can assist university to focus on the need for continuous improvement of LMS design, robust platform stability and targeted digital literacy interventions. Implementing a multi-faceted support mechanisms are essential to mitigate student frustration, facilitating greater engagement and enhancing the overall quality of digital pedagogy within university learning environments.

Despite these theoretical and practical contribution, it is necessary to recognise the limitations of this study. First, the sample size of this study was relatively small and focused solely on UiTM Seremban Campus. As a result, it limits the generalisability of the findings where it does not represent the entire UiTM population across Malaysia. Future research should replicate this framework into a nationwide sampling strategy with different regional branch campuses of UiTM. Second, the cross-sectional dataset demonstrated a disproportionate distribution. The sample distribution was heavily skewed, with 62.4% from

FSPPP, 23.8% from FSKM and only 13.7% from FSR. This imbalance representation may introduce response bias in the analysis as students' experiences from different faculties could vary. Consequently, the findings might be overly representing FSPPP students who comprised the largest portion of the sample. To overcome these limitations, future research should employ rigorous stratified random sampling techniques to ensure proportional representation if sample to allow valid cross faculty comparison. Finally, the scope of this study is limited to the student perspective. Therefore, future research should consider to incorporate the perspectives of the academicians and administrative staff to provide a comprehensive understanding on LMS adoption.

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