Hot-fit Model on E-Learning Success: Innovation and Quality Consciousness

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Abstract

The current research elaborates on the effect of the human organization technology fit model, which consists of human, organizational, and technological dimensions, on e-learning readiness in an elementary school teacher education program. The main dataset, comprising 416 student teachers, was analyzed using partial least squares structural equation modelling procedures. The study tested hypotheses linking various factors to e-learning readiness and usage. Statistically significant results demonstrated that knowledge ($p = .008$), relative advantage ($p < .05$), compatibility ($p < .05$), complexity ($p < .001$), quality ($p < .05$), and innovation awareness ($p < .05$) significantly affect e-learning readiness and actual use of e-learning. Specifically, knowledge, relative advantage, compatibility, quality, and innovation awareness exhibit positive impacts, whereas complexity exerts a negative influence. Conversely, the findings indicated no significant relationships ($p > .05$) between certain correlations, such as computer self-efficacy and e-learning readiness, innovation and actual use of e-learning, and quality and actual use of e-learning. The findings contribute to the development of e-learning, providing practical and theoretical recommendations for its improvement regarding sustainable development goal 4, quality education.

Keywords: Hot-fit; readiness; e-learning implementation; innovation awareness; quality awareness

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Introduction

E-learning in education represents a novel paradigm in education, driving significant changes in the field. E-learning possesses potential in developing countries when obstacles can be overcome (Qoriawan & Apriliyanti, 2023). Universities in developing countries are often unable and unprepared to implement e-learning programs effectively due to limited facilities (Eze et al., 2020). E-learning integration requires additional funds, especially in government institutions and state universities (Qoriawan & Apriliyanti, 2023). The situations cause an additional financial burden. Countries typically favor conventional learning styles due to the need for more financial and human resources. Currently, e-learning in the teaching process at university levels has become a trend in educational technology, along with students' widespread use of the Internet and smartphones. Higher education institutions (HEIs) continue to make efforts to update their educational services, one of which is the implementation of e-learning (Maphalala & Adigun, 2020; Turnbull et al., 2021). For the system at Indonesian HEIs, the e-Learning management system is used, which is an online site that aims to make it easier for lecturers and students to do distance learning whose activities include sharing teaching materials, videos, synchronous or asynchronous learning, evaluation, and other online activities (Aman et al., 2020). These e-learning programs help lecturers and students enhance the quality of lectures, including in the school teacher education program (ESTEP) (Apriani et al., 2021; Ayu, 2020).

Human organization technology fit (Hot-fit) is an extended model established by merging DeLone and McLean's model of success in information systems practice with the information technology organizational fit model (DeLone & McLean, 2003). The model is ideal and flexible to be applied in various contexts for a system's improvement cycle (Maswadi et al., 2022; Mirabolghasemi et al., 2019). Integrating human and technological elements in organizational systems is crucial for enhancing performance and adaptability. This hybrid approach brings together the best of human decision-making and advanced technology to build a more effective framework. It highlights how crucial it is to make sure that system design matches what users need, so that technology helps instead of getting in the way of what people are trying to do. Hot-fit model uses feedback loops, which help organizations continually improve and adapt quickly to changes in their environment. This approach is highly flexible, which means it can work effectively in various environments, including educational settings. Additionally, it promotes teamwork among everyone involved, making sure that the system develops in a way that helps all parties.

Human factors include computer self-efficacy and subjective norms, and organizational factors include knowledge and management support. On the other hand, technological factors offer optional benefits, including flexibility and efficiency in education. Besides the core variables of Hot-fit, this study included two moderating variables: innovation awareness and quality awareness, which are crucial in an educational system for bridging the gap between e-learning readiness and implementation (Polat et al., 2022). Thus, a constant exploration of the factors enabling improved e-learning implementation at ESTEP is required to contribute as significant determinants to reduce the e-learning readiness and implementation gap. Especially, the context of this study aims to empirically analyze the effects of the Hot-fit model, which consists of human, organizational, and technological dimensions, on the readiness of e-learning at ESTEP. The e-learning readiness influences implementation with awareness and innovation quality as moderator effects. These dimensions were developed by proposing research indicators that partially and simultaneously impact the readiness and implementation of e-learning among ESTEP

students. This study attempts to understand several factors that influence college students' readiness and implementation of e-learning practices.

Literature Review

Hot-Fit in HEIs

The Hot-fit model places important components in information systems. The Hot-fit evaluation includes (1) organizational factors and dimensions: structure and environment; (2) conformity between technological, human, and organizational factors; and (3) the two-way relationship between information quality and system usage, user satisfaction, structure and environment, structure and net benefits, and net environmental benefits (Mirabolghasemi et al., 2019; Polat et al., 2022). The human component assesses the information system based on its use, considering the frequency and breadth of functions and information systems. System use is associated with whoever uses the system, user level, training, knowledge, expectations, and acceptance or rejection of the system (Mirabolghasemi et al., 2019; Polat et al., 2022).

E-learning Readiness and Usage Among Student Teachers

Student teachers must be e-learning ready and use technology to teach successfully. Digital learning readiness encompasses technical skills, access to technology, self-efficacy, and motivation. Student teachers must be ready to model technology-enhanced teaching in their future classes. This indicates the extent to which these teachers use e-learning tools, such as learning management systems (LMS), virtual simulations, and collaborative platforms, during training (Eze et al., 2020). Research indicates that technical proficiency and institutional support have a significant impact on the preparation of student teachers. Reliable infrastructure and training enhance student teachers' confidence in e-learning. Low digital literacy or e-learning exposure might impair preparation, especially in under-resourced settings (Apriani et al., 2021; Ayu, 2020). Some student teachers use Moodle or Google Classroom for collaborative learning, while others use them sparingly due to unfamiliarity or pedagogical integration. Attitude toward e-learning matters too. Positive technological attitudes increase the use of e-learning among student teachers. Institutions play a crucial role in providing hands-on training and integrating e-learning with teacher goals. E-learning must be integrated into teacher education programs to promote practical and reflective practice. Progress is, nevertheless, hindered by unequal access to devices, internet connectivity, and academic support. Teacher education programs should include digital literacy, equitable resource distribution, and mentorship to improve preparation and use. Creating a culture of technological flexibility helps student teachers prepare for tech-driven classrooms.

Moderating Variables

A moderating factor is an interacting variable used when the correlations between independent and dependent factors are less strong, consistent, or sometimes non-existent (Maswadi et al., 2022). The greater the power of the moderating influence of innovation and quality awareness, the smaller the readiness-implementation gap. The term of awareness is vital for the current research, implying subjective or phenomenal feeling, option, memory, thinking, language, voluntary behavioral control, and internally generated patterns in the human brain (Liljenström, 2022; Sattin et al., 2021). The current study evaluated awareness of conceptual measures of self-esteem, knowledge, and voluntary behavioral control for implementing e-learning, as well as the sense of innovation and quality brought about by e-learning as an integral part of the education system. Innovation and quality awareness initiatives were introduced to bridge the acceptance-readiness gaps.

Innovation Awareness

Innovation awareness in this study refers to psychological awareness and intentional behavior that emerges from the human brain, whereas innovation is defined as the degree to which an individual or group of people accepts new ideas compared to other members of the social system (Panigrahi et al., 2021). Innovative students are eager to quickly explore current technologies, adopt, and use them efficiently in instructional activities. Many previous studies have emphasized that e-learning is an innovation that supports the teaching and learning process (Chang et al., 2021; Ifinedo et al., 2020). A strong correlation exists between technology integration and computer innovation (Ifinedo et al., 2020). Furthermore, students' degree of e-learning innovation significantly influences their integration behavior. A robust link exists between students' perceptions of the innovative attributes of e-learning websites and their use behavior (Panigrahi et al., 2021).

Quality Awareness

Quality awareness refers to one of the most important effects of the implementation success of e-learning in education (Al-Fraihat et al., 2020). Therefore, in e-learning implementation, quality awareness is the awareness of the main values related to e-learning implementation. The quality of the educational activities is one of the determinants for student learning (Mahoney et al., 2021; Santos et al., 2020). The challenge of improving the quality of education is part of quality assurance as a goal of sustainable education development (Onyekwere & Enamul Hoquei, 2023; Şimşek & Ateş, 2022). Students' need for e-learning skills and knowledge facilitates quality education and improves academic achievement. Implementing e-learning can enhance education quality and effectiveness at a low cost. Students agree that using e-learning in teaching and learning can improve the quality of education (Onyekwere & Enamul Hoquei, 2023; Şimşek & Ateş, 2022).

Core Variables

Computer self-efficacy refers to an individual's assessment of their ability to use e-learning. Self-efficacy refers to an individual's belief in their ability to perform various tasks within a system (Prifti, 2022). Self-efficacy determines individual choices about which technology to adopt and how strong the effort is to survive in the face of challenges. The decision of students to use e-learning is related to their ability to use the technology and the advantages they can obtain through the use of the system (Al-Fraihat et al., 2020). Positive experiences using e-learning systems can increase student self-efficacy (Prifti, 2022). Students will use e-learning if they feel capable of using the system.

Subjective norm is the perception that most individuals think certain behaviors and attitudes should be carried out, conceptualized as normative beliefs (Habibi et al., 2020). Subjective norm is defined as the social influence on how the perception of technological tool users is affected by a person close to them (Rejón-Guardia et al., 2020). When individuals perceive that the primary reference system of thinking must be used, they incorporate the reference beliefs into their own belief systems. Students' perceptions of e-learning readiness are a collaborative effort between organizations and instructors.

For the effective utilization of e-learning systems, users must possess relevant technological skills and knowledge. Organizations with limited expertise in Information and Communication Technologies (ICT) may want to refrain from using new technology, so they must fully master the technology (Habibi et al., 2020). The interest and supporting policies of leaders at every level are the most important factors for the success of e-learning (Basir et al., 2021). Management's commitment to implementing decision-making processes in e-learning practices is crucial because it guarantees adequate resources to support implementation. For ICT integration to become efficient and effective, institution management should be skillful

and knowledgeable in the technology implementation and obtain a good understanding of the whole pedagogical, technological, financial, institutional, and cohesive perspectives.

Relative advantage refers to the extent to which e-learning tools in tertiary institutions are considered to provide significant benefits in helping to achieve their goals (Mustafa et al., 2021; Wang et al., 2022). The relative advantage of e-learning benefits a system that is perceived as beneficial (Mustafa et al., 2021; Wang et al., 2022). Relative advantage is defined as the level to which an innovation is considered more significant than the innovation it replaces, such as reducing costs and increasing performance. If the e-learning relative advantage is high, universities are more likely to provide significant resources to implement a novel system.

Compatibility or suitability refers to the extent to which an innovation aligns with users' existing experiences, values, and potential means of use (Al-Fraihat et al., 2020). Regarding profit organizations, the need for compatibility makes many companies hesitant about the potential of innovation related to the situation happening in education (Choi et al., 2020; Rocca et al., 2023). The success rate of e-learning use increases if compatibility is more significant (Al-Fraihat et al., 2020). Educational institutions are more likely to apply technology that is compatible with their processes, requirements, technological infrastructure, and value systems.

Complexity refers to the difficulties organizations encounter when using and understanding new technology (Benbya et al., 2020; Toufaily et al., 2021). If organizations perceive technology as complex, they use it because they need more confidence in implementing and understanding the new system (Goh & Sigala, 2020). The complexity of e-learning systems can improve the perceived risk related to the readiness and implementation. In the context of this research, twelve hypotheses are proposed:

H1: Computer self-efficacy has a significant positive effect on e-learning readiness

H2: Subjective norms have a positive effect on e-learning readiness

H3: Knowledge has a positive effect on e-learning readiness

H4: Management support has a positive effect on e-learning readiness

H5: Relative advantage has a positive effect on e-learning readiness

H6: Compatibility has a positive effect on e-learning readiness

H7: Complexity has a positive effect on e-learning readiness

H8: e-learning readiness has a significant positive correlation with actual use of e-learning.

H9: Innovation awareness has a significant positive correlation with the actual use of e-learning.

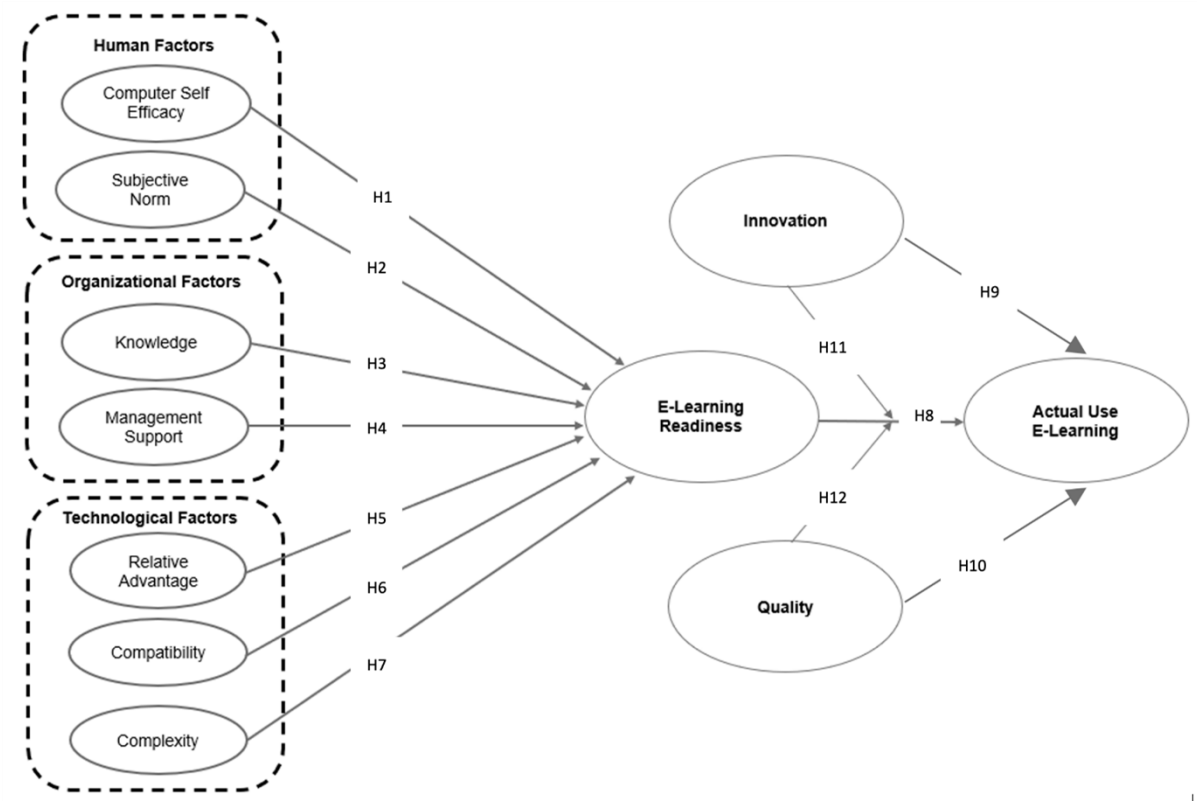
H10: Quality awareness has a significant positive correlation with actual use of e-learning.

H11: Innovation awareness positively moderates the relationship between e-learning readiness, acceptance, and the implementation of e-learning.

H12: Quality awareness positively moderates the relationship between e-learning readiness, acceptance, and e-learning Implementation.

Figure 1

Proposed Model



Methods

Data Collection

For the data collection, we use probability sampling, a sampling technique in which each member of the population has the same chance of being selected for the sample. In other words, all population members have a non-zero probability (Tabandeh et al., 2022; Sivagurunathan et al., 2024). The samples used in this study were 416 ESTEP student teachers. Based on gender, 253 samples were females, and 163 respondents were males. Regarding the year in university, 167 were in the first year, 228 in the second year, and the rest were in the third year or above. A survey was distributed online via Google Forms to all eligible participants, following approval from the Institutional Review Board (IRB) to ensure the waiver of ethical compliance. Of the 500 surveys sent, 416 were completed, yielding a response rate of 94.2%.

Instrumentation

The questionnaire used in this study was a closed-ended questionnaire that provided a choice of answers. Questions for each construct were adapted from previously validated instruments (Benbya et al., 2020; DeLone & McLean, 2003; Rahman et al., 2017; Toufaily et al., 2021). All quantitative questionnaire items were measured using a seven-point Likert scale; strongly disagree (1) to strongly agree (7) (Sofwan et al., 2024). The first step in preparing the questionnaire is to translate the questionnaire through back translation (Habibi et al., 2023). Three English-Indonesian professional translators were involved in this process. We compared the questionnaire to see the relevance of the translation results in the context of ESTEP. All items for the current study were listed in Appendix A.

Data Analysis

This study's hypotheses were tested using the partial least squares structural equation model (PLS-SEM), a well-established method (Hair et al., 2022; Yuanjue et al., 2025). PLS-SEM was used to study human attitudes, actions, and intentions in e-learning adoption because it can handle complex models with latent constructs (Hair et al., 2022). First, the measurement model was tested for reliability and validity. E-learning preparedness and use were examined for internal consistency using composite reliability. Average variance extracted (AVE) values confirmed convergence. The Heterotrait-Monotrait (HTMT) ratio was calculated to confirm construct distinction and discriminant validity (Habibi et al., 2024; Sofwan et al., 2024).

The structural model was evaluated to test the hypothesized relationships in the second step. Path coefficients were estimated to identify the degree and direction of correlations between variables, such as technological self-efficacy and e-learning utilization. The results were robustly tested using bootstrapping with 5,000 subsamples to determine significance. This approach provided stable p-value and confidence interval estimates, enhancing reliability. The main tool for this research was SmartPLS, which has a simple interface for model estimation, visualization, and interpretation (Hair et al., 2022; Huang, 2020). All variance inflation factor (VIF) readings indicated concerns about multicollinearity. This thorough method guaranteed that the results accurately reflected student teachers' preparation and use of e-learning resources, supporting the study's conclusions.

Findings

Measurement Model

Convergent validity is defined as the extent to which a measurement item of the exact factor in the context of the model is assumed to be comparable to other measurement items of the same factor (Habibi et al., 2023). Each survey item included in a factor should have a value of .700 or more to fulfill the validity threshold. Convergent validity is assessed by the average variance extracted (AVE). To meet the standard of the convergent validity, the AVE value must be > .500. Convergent validity was assessed using the Partial Least Squares (PLS) technique. Table 1 displays the results of the analysis. Most indicator values are reported to be greater than 0.708. The internal consistency reliability is measured between 0 and 1; the higher the value, the better the validity. Alpha and CR must be higher than .700 (Hair et al., 2022). The alpha and CR values generated for all constructs are stable with acceptable reliability, from .710 to .878. Convergent validity is established through the AVE value. The minimum acceptable AVE is > .500 or higher, meaning that all construct variable variances explain 50% or more of the item variance. All factors meet the threshold, with an AVE value greater than .500, ranging from .592 (complexity) to .847 (compatibility).

Table 1

Measurement Model

Construct	Item	Load	alpa	CR	AVE
Actual use e-learning	ACT1	.852	.678	.861	.756
	ACT2	.886			
Compatibility	CMPI1	.919	.909	.943	.847
	CMPI2	.937			
	CMPI3	.905			
Complexity	CMPX1	.816	.665	.813	.592
	CMPX2	.701			

	CMPX3	.788			
Computer Self-efficacy	CSE2	.714	.531	.800	.670
	CSE3	.911			
E-learning readiness	ELR1	.832	.678	.819	.602
	ELR2	.760			
	ELR3	.731			
Innovation	INO1	.849	.710	.872	.773
	INO2	.908			
Knowledge	KNW1	.738	.786	.877	.705
	KNW2	.887			
	KNW3	.884			
Management support	MS1	.865	.861	.915	.782
	MS2	.911			
	MS3	.878			
Quality	QUA1	.839	.643	.848	.736
	QUA2	.876			
Relative advantage	RA1	.741	.751	.857	.667
	RA2	.819			
	RA3	.883			
Subjective norm	SN1	.885	.735	.883	.791
	SN2	.893			

Discriminant Validity

The first discriminant validity criterion within this study was the Fornell-Larcker assessment, where the limit value of AVE is ≥ .500 (Hair et al., 2022). All the square roots of AVEs and correlation values for > .500. In addition, the square root value of AVE shows a high discriminant validity value. Discriminant validity was also evaluated through the Heterotrait-Monotrait Ratio (HTMT) as the most robust evaluation (Hair et al., 2022). From the results of the PLS-SEM, all HTMT values (Table 2) are lower than .900 (Hair et al., 2022). HTMT showed that all values differ from 1. The discriminant validity, as per Fornell and Larcker (1981), indicates that the limit value of AVE is ≥ .500. The results show all the Squared Root of AVEs and correlation values for are (> .500) (Table 3). Thus, the results meet the criteria for discriminant validity.

Table 2

Heterotrait-Monotrait Ratio

	ACT	CMPLI	COMPLX	CSE	ELR	INO	KNOW	MS	QUA	RA
Compatibility	.047									
Complexity	.156	.760								
Computer self-efficacy	.127	.365	.511							
E-Learning readiness	.075	.807	.908	.547						
Innovation	.364	.065	.097	.047	.056					
Knowledge	.088	.638	.812	.386	.709	.110				

Management support	.116	.614	.736	.337	.585	.080	.618			
Quality	.421	.142	.104	.093	.131	.785	.057	.041		
Relative advantage	.083	.832	.692	.401	.851	.044	.465	.471	.060	
Subjective norm	.087	.752	.729	.508	.710	.069	.520	.668	.079	.603

Table 3

Fornell-Larcker

	ACT	CMPL	COMLX	CSE	ELR	INO	KNO	MS	QUA	RA	SN
Actual Use E Learning	.869										
Compatibility	-.009	.920									
Complexity	-.087	.605	.770								
Computer Self-efficacy	.056	.262	.298	.818							
E-Learning Readiness	.012	.655	.660	.320	.776						
Innovation	.254	-.003	-.061	.018	.002	.879					
Knowledge	-.019	.539	.599	.248	.541	-.057	.840				
Management Support	-.091	.545	.557	.248	.461	-.059	.512	.885			
Quality	.277	.107	.071	.021	.095	.535	.040	.001	.858		
Relative Advantage	-.056	.703	.536	.265	.636	-.005	.375	.382	-.011	.817	
Subjective Norm	-.062	.615	.512	.347	.511	-.047	.393	.530	.040	.459	.889

Structural Model

Measurement model supports the validity of the structural model's correlation between the two variables (Fauzee et al., 2026; Hair et al., 2022). We employed a bootstrapping approach with 5,000 subsamples to obtain a meaningful path coefficient (β) and t-value for the hypothesis's significance. The hypothesis testing results provide a detailed analysis of the factors influencing e-learning readiness and the actual use of e-learning systems (Table 4). The study examined twelve hypotheses, each exploring different predictors of e-learning readiness and their subsequent impact on actual e-learning use. The

findings suggest a nuanced understanding of how various factors contribute to these two outcomes, with some expected predictors showing significant influence while others do not. Firstly, the effect of computer self-efficacy (H1) on e-learning readiness is found to be non-significant (β = .064, p = .246). Similarly, subjective norm (H2), which measures the influence of perceived social pressure to use e-learning, also shows a non-significant relationship with e-learning readiness (β = .071, p = .202).

On the other hand, knowledge (H3) about e-learning significantly influences readiness (β = .148, p = .008), indicating that individuals who are more informed about e-learning are more likely to be ready to adopt it. Relative advantage (H5) and compatibility (H6), which reflect the perceived benefits of e-learning and its fit with existing practices, are also significant predictors (β = .272, p = .000; β = .164, p = .041, respectively). These factors suggest that when individuals see e-learning as advantageous and compatible with their current ways of working or learning, they are more likely to be ready to adopt it. Additionally, complexity (H7), which typically would have a negative connotation, interestingly shows a positive and significant relationship with readiness (β = .281, p = .000). When it comes to the actual use of e-learning, the results are mixed. The direct impact of e-learning readiness (H8) on actual use is non-significant (β = .014, p = .781). However, quality (H10) and innovation awareness (H12) emerge as significant factors influencing the actual use of e-learning (β = .190, p = .008; β = .190, p = .022, respectively). These findings highlight that the perceived quality of the e-learning system and awareness of innovations within the system are crucial in translating readiness into actual use. In contrast, the direct effects of innovation (H9) and the mediating role of quality awareness (H11) on e-learning readiness and its subsequent use are found to be non-significant, suggesting that these factors might not independently drive e-learning adoption.

Table 4

Structural Model

	Path	β	t value	p value	Sig.
H1	Computer self-efficacy -> e-learning readiness	.064	1.164	.246	No
H2	Subjective norm -> e-learning readiness	.071	1.279	.202	No
H3	Knowledge -> e-learning readiness	.148	2.676	.008	Yes
H4	Management support -> e-learning readiness	-.018	.323	.747	No
H5	Relative advantage -> e-learning readiness	.272	3.870	.000	Yes
H6	Compatibility -> e-learning readiness	.164	2.058	.041	Yes
H7	Complexity -> e-learning readiness	.281	4.091	.000	Yes
H8	e-learning readiness -> actual use of e-learning	.014	.278	.781	No
H9	Innovation awareness-> actual use e-learning	.132	1.483	.140	No
H10	Quality awareness -> actual use of e-learning	.190	2.676	.008	Yes

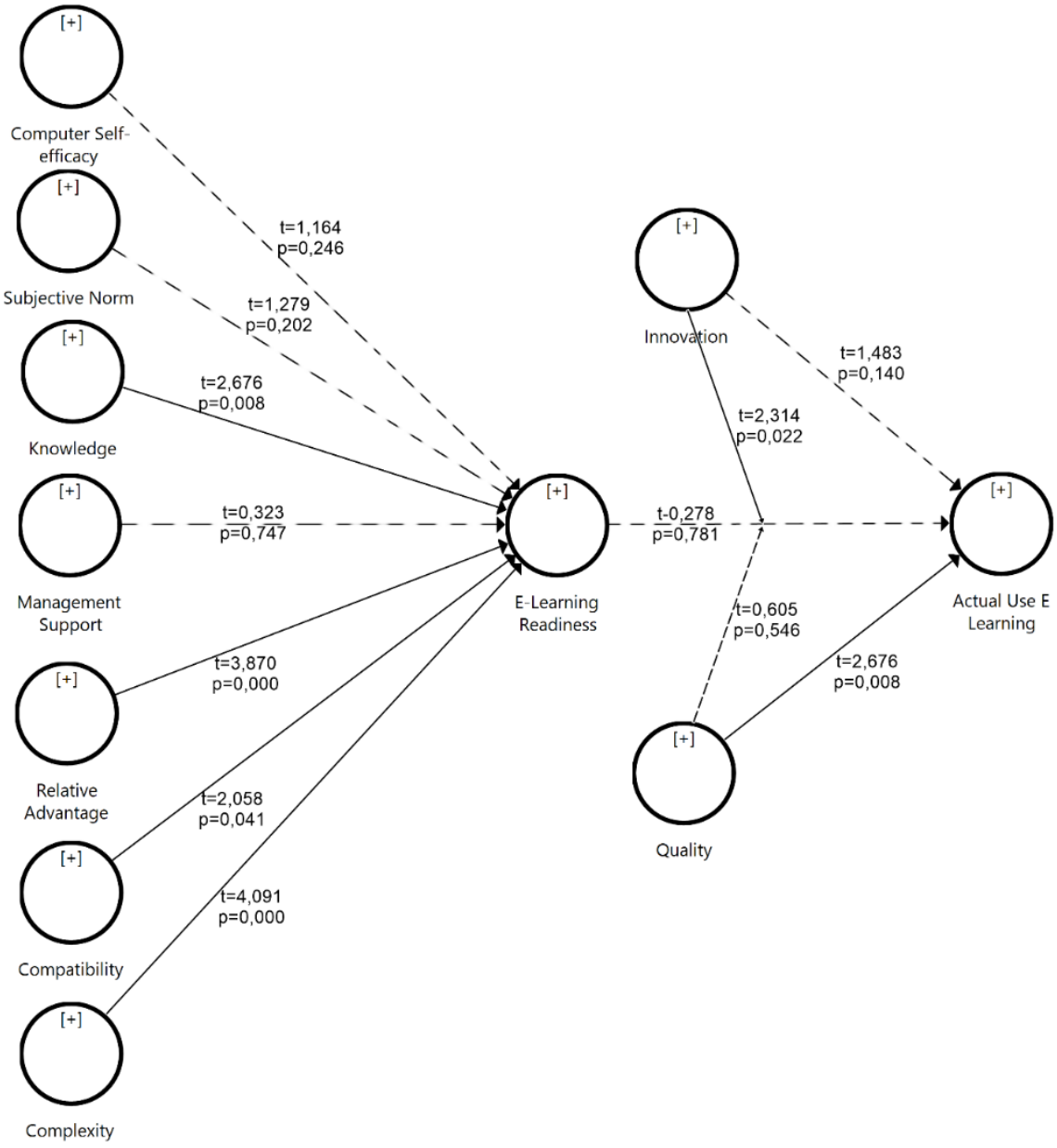
H11	Quality awareness. -> e-learning readiness -> actual use of e-learning	.042	.605	.546	No
H12	Innovation awareness -> e-learning readiness -> actual use of e-learning	.190	2.314	.022	Yes

Coefficient of Determination (R^2) and Predictive Relevance (Q^2)

R^2 is one of the main measurements used to evaluate paths in the PLS-SEM. The R^2 value for the actual use of e-learning is .136, representing the amount of variance explained by each endogenous latent variable and indicating the model's quality in the moderate category. E-learning readiness produces a value in the medium category, .594 (Hair et al., 2022). The proposed model exhibits sufficient predictive relevance for endogenous constructs when Q^2 exceeds zero; however, when Q^2 values are less than zero, the model fails to meet predictive relevance for endogenous constructs. Based on the table above, the model has sufficient predictive relevance. Q^2 value for actual use e-learning ($Q^2 = .072$), small effect category, e-learning readiness ($Q^2 = .321$), large effect category.

Figure 2

Final Model



Discussion

The discussions of ESTEP student teachers about e-learning, based on the statistical findings of the current study, reveal how awareness of innovation affects the usage of digital tools in teaching. The findings confirm six hypotheses while rejecting six others. This study examines the relationships between computer self-efficacy, subjective norms, knowledge, management support, relative advantage, compatibility, quality awareness, and e-learning use. Innovation awareness has a significant impact on ESTEP student teachers' readiness to integrate e-learning into their teaching. Innovation awareness refers to the extent to which individuals understand and accept innovative educational technology (Chang et al., 2021; Ifinedo et al., 2020). Awareness of novel tools, such as e-learning platforms, can greatly

influence student teachers' adoption of these tools, especially those in the ESTEP program (Chang et al., 2021). This awareness might inspire Indonesian student teachers to explore how digital tools can enhance teaching, student engagement, and learning outcomes.

High computer self-efficacy should help student teachers experiment with e-learning platforms, create digital content, and fix technical issues during lessons (Al-Fraihat et al., 2020; Prifti, 2022). However, e-learning readiness is not significantly influenced by computer self-efficacy or confidence in computer and technology skills, as indicated by the current study's findings. Additionally, subjective norms—student instructors' social pressures and expectations regarding technology use in education—also do not affect e-learning readiness, arguing against previous studies' findings (Habibi et al., 2020; Rejón-Guardia et al., 2020). This emphasizes the necessity of creating a conducive school atmosphere where practicing instructors model the use of digital tools. The study highlights that while computer self-efficacy aids e-learning engagement, it doesn't significantly impact readiness. Social pressures from instructors and expectations around tech use in education also have minimal effect.

Readiness also depends on e-learning knowledge. ESTEP student teachers must grasp e-learning platforms, their classroom uses, and their effects on student engagement, supporting prior reports (Basir et al., 2021; Habibi et al., 2020). Even the most tech-savvy people may fail to recognize the value of e-learning or apply it effectively without this expertise. This emphasizes the need for comprehensive training that extends beyond technical skills and focuses on pedagogical practices that use e-learning to enhance teaching and learning (Basir et al., 2021). This expertise is crucial for student teachers, who must employ e-learning resources to provide hands-on, inquiry-based learning experiences that match scientific instruction. However, management support is not crucial to e-learning readiness. The findings argue that educational institutions must actively facilitate technology integration to give student instructors the tools and assistance. Further studies on the correlation should be conducted in the future.

E-learning's perceived relative advantages over traditional teaching techniques can affect readiness. E-learning allows ESTEP student teachers to offer more dynamic and flexible learning experiences for various students. Digital platforms can provide asynchronous learning opportunities or online discussion rooms to enhance student engagement. As virtual labs, simulations, and data visualization tools improve science education, e-learning benefits Indonesian student teachers (Habibi et al., 2020). If these benefits are not clearly explained or experienced, student instructors may not perceive the value in e-learning and prefer familiar techniques. E-learning compatibility with teaching methods and beliefs is also vital. Student teachers must integrate e-learning into their teaching style and curriculum (Benbya et al., 2020; Toufaily et al., 2021). If e-learning tools seem too complicated or incompatible with their teaching approach, they may reject their use. E-learning platforms should be user-friendly and versatile, allowing student teachers to personalize their use. Compatible tools are crucial for student teachers, who need them for hands-on, experimental science education.

Quality awareness, or recognition of high-quality e-learning tools and activities, affects preparedness and utilization. Student teachers who understand what makes a good e-learning platform—intuitive navigation, compelling content, and reliable performance—are more inclined to use it. This knowledge establishes a standard for e-learning and encourages individuals to seek resources that meet it, thereby enhancing their readiness. Quality awareness is essential for Indonesian student teachers, who require tools that effectively explain scientific concepts and engage students (Mahoney et al., 2021; Santos et al., 2020).

These criteria culminate in the effective use of e-learning, demonstrating preparedness. ESTEP student instructors must move from awareness and preparation to implementation. By incorporating e-learning into their classes, they may recognize its benefits and reinforce their commitment to digital integration. E-learning is used by student teachers to develop dynamic, student-centered lessons that encourage scientific curiosity and critical thinking.

For moderating variables, innovation awareness has a significant influence on the actual use of e-learning, particularly in terms of the readiness of ESTEP student teachers to integrate e-learning, rather than quality awareness, which has no significant effects on actual use. The positive results show that the correlation between readiness and integration use is greater for those who believe innovation awareness strengthens their intention than for ESTEP student teachers who believe quality awareness reinforces their actual use of e-learning to integrate e-learning. These results are consistent with previous research on ICT innovations in teaching and learning (Chang et al., 2021; Pratama et al., 2020; Purwanto & Tannady, 2020). Innovation offers student teachers opportunities to integrate e-learning into the teaching and learning process. Thus, the results of this study imply that ESTEP students are aware of the innovations that e-learning brings to education. Innovation awareness has a strong influence on ESTEP student teachers' openness to using e-learning, especially they who appreciate such improvements. A prior study on the role of ICT in education suggests that awareness promotes the integration of digital tools. These findings underscore the need for specialized training programs to enhance technological adoption, enabling ESTEP students to effectively use e-learning to enhance their education. More elaboration on the insignificant relationship between quality awareness and actual use of e-learning through readiness should be conducted in the future.

Conclusion

Overall, the study highlights the importance of prioritizing quality and innovation in e-learning systems to encourage actual usage, even among users who are already ready. The perceived benefits, compatibility, and knowledge about e-learning play crucial roles in preparing users for adoption, but ensuring that these systems are perceived as high quality and innovative is key to translating readiness into actual use. The study faces significant obstacles due to its reliance on self-reported data, which may introduce biases and errors. Participants may inaccurately describe activities or events due to social desirability or memory lapses, distorting the results. The sample size significantly constrains the study's trustworthiness. A restricted participant pool may inadequately represent the diversity of the larger community, hence diminishing the generalizability of the findings. Demographic characteristics, including age, socioeconomic level, and cultural background, may be insufficiently represented, resulting in incomplete insights. The methodology varies across study domains, as emphasized in the text. In disciplines such as psychology, researchers frequently use surveys or interviews to collect subjective data, which may be susceptible to interpretative inaccuracies. In contrast, in fields like biology, objective metrics such as laboratory testing yield more definitive results, although they may still be constrained by the representativeness of the sample. The study underscores the significance of "general method variance," a phenomenon wherein methodological discrepancies among studies result in conflicting conclusions. This variability hinders the ability to compare or reproduce results, as the methodologies and instruments employed in one study may not correspond with those in another. The paper recommends using methodologies such as PLS-SEM to tackle these challenges. This statistical method efficiently manages smaller sample sizes compared to conventional approaches, enabling the investigation of intricate correlations between variables with enhanced precision. Nonetheless, despite employing such methodologies, the

outcomes remain context-dependent and cannot be universally applied without prudence. The research includes ESTEP students, signifying an emphasis on educational or developmental data gathered at a specific time. Conducting this research over a prolonged duration may uncover trends and transformations, yielding profound insights into the issue and augmenting the study's overall validity.

The current study reported the determining effects of behavioral intention on the e-learning use of ESTEP students. The primary objective of the current study was to investigate the moderating effects of innovation and quality awareness on the relationship between intention and e-learning use among ESTEP students. The innovation awareness factor proved to have a moderating influence on the relationship between intention and actual use. In addition, innovation and quality awareness are independent factors predicting e-learning use. Upcoming studies are suggested to confirm the justification of these factors as predictors of e-learning use and examine the pathways of the correlational analyses. In addition, the study's reports provide new insights into factual information regarding e-learning and how this situation can influence students, teachers, and lecturers' decisions about integrating e-learning. Additionally, the study could enhance its findings by incorporating mixed-method approaches that merge qualitative interviews with quantitative data. The integration of technology, such as real-time data tracking applications, may diminish dependence on self-reporting. Collaborating with various institutions may expand the participation base. These measures would augment the study's profundity and relevance.

Conflict of Interest

No potential competing interest was reported by the authors.

Ethic Statement

Given the nature of the study and after a thorough review, the ethical approval requirement can be waived. This decision aligns with the guidelines established by Universitas Jambi for social science research, which require obtaining appropriate waivers from Institutional Review Boards (IRB) or equivalent authorities to ensure ethical compliance.

References

Al-Fraihat, D., Joy, M., Masa'deh, R., & Sinclair, J. (2020). Evaluating e-learning systems' success: An empirical study. *Computers in Human Behavior*, *102,* 67-86. https://doi.org/10.1016/j.chb.2019.08.004

Ali, B. J., & Anwar, G. (2021). Implementation of e-learning system readiness: The effect of the cost readiness on implementing e-learning. *International Journal of Electrical, Electronics and Computers*, *6*(3), 27–37. https://doi.org/10.22161/eec.63.4

Aman, L. D. P., Sofwan, M., Mukminin, A., Habibi, A., & Yaqin, L. N. (2020). Factors affecting Indonesian pre-service teachers' use of m-LMS: A mix method study. *International Journal of Interactive Mobile Technologies*, *14*(6), 137–147. https://doi.org/10.3991/ijim.v14i06.12035

Apriani, E., Syafryadin, Inderawati, R., Arianti, A., Wati, S., Hakim, I. N., & Noermanzah. (2021). Implementing e-learning training toward English virtual lecturers: The process, perspectives, challenges and solutions. *International Journal of Emerging Technologies in Learning*, *16*(4), 240–255. https://doi.org/10.3991/ijet.v16i04.14125

Ayu, M. (2020). Online learning: Leading e-learning at higher education. *The Journal of English Literacy Education: The Teaching and Learning of English as a Foreign Language*, *7*(1), 47–54. https://doi.org/10.36706/jele.v7i1.11515

Basir, M., Ali, S., & Gulliver, S. R. (2021). Validating learner-based e-learning barriers: developing an instrument to aid e-learning implementation management and leadership. *International Journal of Educational Management*, *35*(6), 1277–1296. https://doi.org/10.1108/IJEM-12-2020-0563

Benbya, H., Nan, N., Tanriverdi, H., & Yoo, Y. (2020). Complexity and information systems research in the emerging digital world. *MIS Quarterly: Management Information Systems*, *44*(1), 1–17. https://doi.org/10.25300/MISQ/2020/13304

Chang, H., Varvello, M., Hao, F., & Mukherjee, S. (2021). Can you see me now?: A measurement study of Zoom, Webex, and Meet. *Proceedings of the ACM SIGCOMM Internet Measurement Conference, IMC*. https://doi.org/10.1145/3487552.3487847

Choi, D., Chung, C. Y., Seyha, T., & Young, J. (2020). Factors affecting organizations' resistance to the adoption of blockchain technology in supply networks. *Sustainability (Switzerland)*, *12*(21), 8882–8895. https://doi.org/10.3390/su12218882

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, *19*(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

Eze, S. C., Chinedu-Eze, V. C. A., Okike, C. K., & Bello, A. O. (2020). Factors influencing the use of e-learning facilities by students in a private Higher Education Institution (HEI) in a developing economy. *Humanities and Social Sciences Communications*, *7*(1), 1–15. https://doi.org/10.1057/s41599-020-00624-6

Fauzee, M. S. O., Zhang, S., Ishak, M., Ma, L., Hou, M., Zhang, W., Abdullah, M. N. H., Habibi, A., Singh, D. S. G., Yasin, M. H. M., & Nik, W. S. W. (2026). Enhancing academic resilience through motivation and strategy: Evidence from Malaysian boarding

schools using SDT. *International Journal of Evaluation and Research in Education, 15*(1), 238–257. https://doi.org/10.11591/ijere.v15i1.35494

Goh, E., & Sigala, M. (2020). Integrating information & communication technologies (ICT) into classroom instruction: Teaching tips for hospitality educators from a diffusion of innovation approach. *Journal of Teaching in Travel and Tourism*, *20*(2), 156–165. https://doi.org/10.1080/15313220.2020.1740636

Habibi, A., Mukminin, A., Octavia, A., Wahyuni, S., Danibao, B. K., & Wibowo, Y. G. (2024). ChatGPT acceptance and use through UTAUT and TPB: A big survey in five Indonesian Universities. *Social Sciences & Humanities Open*, *10* (101136), 1–11. https://doi.org/10.1016/j.ssaho.2024.101136

Habibi, A., Mukminin, A., & Sofyan, S. (2024). Access to the digital technology of urban and suburban vocational schools. *Education and Information Technologies*, *29*(4). https://doi.org/10.1007/s10639-023-12006-x

Habibi, A., Sofyan, S., & Mukminin, A. (2023). Factors affecting digital technology access in vocational education. *Scientific Reports*, *13*(1), 5682. https://doi.org/10.1038/s41598-023-32755-6

Habibi, A., Yusop, F. D., & Razak, R. A. (2020). The role of TPACK in affecting pre-service language teachers' ICT integration during teaching practices: Indonesian context. *Education and Information Technologies*, *25*(3), 1929–1949. https://doi.org/10.1007/s10639-019-10040-2

Hair, J., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *PLS-SEM book: A Primer on PLS-SEM* (3rd ed.). Sage.

Huang, T., Hochbein, C., & Simons, J. (2020). The relationship among school contexts, principal time use, school climate, and student achievement. *Educational Management Administration & Leadership*, *48*(2), 305–323. https://doi.org/10.1177/1741143218802595

Ifinedo, E., Rikala, J., & Hämäläinen, T. (2020). Factors affecting Nigerian teacher educators' technology integration: Considering characteristics, knowledge constructs, ICT practices and beliefs. *Computers and Education*, *146,* 1–17. https://doi.org/10.1016/j.compedu.2019.103760

Liljenström, H. (2022). Consciousness, decision making, and volition: Freedom beyond chance and necessity. *Theory in Biosciences*, *141*(2), 125–140. https://doi.org/10.1007/s12064-021-00346-6

Mahoney, J. L., Weissberg, R. P., Greenberg, M. T., Dusenbury, L., Jagers, R. J., Niemi, K., Schlinger, M., Schlund, J., Shriver, T. P., VanAusdal, K., & Yoder, N. (2021). Systemic social and emotional learning: Promoting educational success for all preschool to high school students. *American Psychologist*, *76*(7), 1128–1142. https://doi.org/10.1037/amp0000701

Maphalala, M. C., & Adigun, O. T. (2020). Academics' experience of implementing e-learning in a South African higher education institution. *International Journal of Higher Education*, *10*(1), 1–13. https://doi.org/10.5430/ijhe.v10n1p1

Maswadi, K., Ghani, N. A., & Hamid, S. (2022). Factors influencing the elderly's behavioural intention to use smart home technologies in Saudi Arabia. *PLoS ONE*, *17*(8Au), 1–30. https://doi.org/10.1371/journal.pone.0272525

Mirabolghasemi, M., Choshaly, S. H., & Iahad, N. A. (2019). Using the HOT-fit model to predict the determinants of E-learning readiness in higher education: A developing Country's perspective. *Education and Information Technologies*, *24*, 3555–3576.

Mustafa, M. H., Ahmad, M. B., Shaari, Z. H., & Jannat, T. (2021). Integration of TAM, TPB, and TSR in understanding library user behavioral utilization intention of physical vs. E-book format. *Journal of Academic Librarianship*, *47*(5), 1–11. https://doi.org/10.1016/j.acalib.2021.102399

Olugbara, C. T., Imenda, S. N., Olugbara, O. O., & Khuzwayo, H. B. (2020). Moderating effect of innovation consciousness and quality consciousness on intention-behavior relationship in E-learning integration. *Education and Information Technologies*, *25*(1), 329–350. https://doi.org/10.1007/s10639-019-09960-w

Onyekwere, J., & Enamul Hoquei, K. (2023). Relationship between technological change, digitization, and students' attitudes toward distance learning in Lagos Higher Education institutes. *Innoeduca. International Journal of Technology and Educational Innovation*, *9*(1), 126–142. https://doi.org/10.24310/innoeduca.2023.v9i1.15286

Panigrahi, R., Srivastava, P. R., & Panigrahi, P. K. (2021). Effectiveness of e-learning: the mediating role of student engagement on perceived learning effectiveness. *Information Technology and People*, *34*(7), 1840–1862. https://doi.org/10.1108/ITP-07-2019-0380

Polat, E., Hopcan, S., & Yahşi, Ö. (2022). Are K-12 teachers ready for e-learning? *International Review of Research in Open and Distance Learning*, *23*(2), 214–241. https://doi.org/10.19173/irrodl.v23i2.6082

Pratama, H., Azman, M. N. A., Kassymova, G. K., & Duisenbayeva, S. S. (2020). The trend in using online meeting applications for learning during the period of pandemic Covid-19: A literature review. *Journal of Innovation in Educational and Cultural Research*, *1*(2), 28–68. https://doi.org/10.46843/jiecr.v1i2.15

Prifti, R. (2022). Self–efficacy and student satisfaction in the context of blended learning courses. *Open Learning*, *37*(2), 111–125. https://doi.org/10.1080/02680513.2020.1755642

Purwanto, E., & Tannady, H. (2020). The factors affecting intention to use Google Meet amid online meeting platform competition in Indonesia. *Technology Reports of Kansai University*, *62*(6), 2829–2839.

Qoriawan, T., & Apriliyanti, I. D. (2023). Exploring connections within the technology-based entrepreneurial ecosystem (EE) in emerging economies: understanding the entrepreneurship struggle in the Indonesian EE. *Journal of Entrepreneurship in Emerging Economies*, *15*(2), 301–332. https://doi.org/10.1108/JEEE-02-2021-0079

Rahman, M. M., Lesch, M. F., Horrey, W. J., & Strawderman, L. (2017). Assessing the utility of TAM, TPB, and UTAUT for advanced driver assistance systems. *Accident Analysis and Prevention*, *108,* 361–372. https://doi.org/10.1016/j.aap.2017.09.011

Ramadiani, Azainil, Hidayanto, A. N., Khairina, D. M., & Jundillah, M. L. (2020). Teacher and student readiness using e-learning and m-learning. *Bulletin of Electrical Engineering and Informatics*, *9*(3), 1176–1182. https://doi.org/10.11591/eei.v9i3.2006

Rejón-Guardia, F., Polo-Peña, A. I., & Maraver-Tarifa, G. (2020). The acceptance of a personal learning environment based on Google apps: The role of subjective norms and social image. *Journal of Computing in Higher Education*, *32*(2), 2023–233. https://doi.org/10.1007/s12528-019-09206-1

Rocca, L., Veneziani, M., & Carini, C. (2023). Mapping the diffusion of circular economy good practices: Success factors and sustainable challenges. *Business Strategy and the Environment*, *32*(4), 2035–2048. https://doi.org/10.1002/bse.3235

Santos, G., Marques, C. S., Justino, E., & Mendes, L. (2020). Understanding social responsibility's influence on service quality and student satisfaction in higher education. *Journal of Cleaner Production*, *256,* 1–10. https://doi.org/10.1016/j.jclepro.2020.120597

Sattin, D., Magnani, F. G., Bartesaghi, L., Caputo, M., Fittipaldo, A. V., Cacciatore, M., Picozzi, M., & Leonardi, M. (2021). Theoretical models of consciousness: A scoping review. *Brain Sciences, 11*(5), 1–58 . https://doi.org/10.3390/brainsci11050535

Şimşek, A. S., & Ateş, H. (2022). The extended technology acceptance model for Web 2.0 technologies in teaching. *Innoeduca. International Journal of Technology and Educational Innovation*, *8*(2). https://doi.org/10.24310/innoeduca.2022.v8i2.15413

Sivagurunathan, R., Senathirajah, A. R. B. S., Ramasamy, G., Isa, M. B. M., Haque, R., Chanjin, Y., & Sivagurunathan, L. (2024). A study on development of educational leadership program using equine assisted experiential learning. Eurasian Journal of Educational Research, (112), 1–14. https://doi.org/10.14689/ejer.2024.112.01

Sofwan, M., Habibi, A., Attar, R. W., Alqahtani, T. M., Alahmari, S. A., & Alhazmi, A. H. (2024). Factors affecting teachers' behavior of innovative teaching with technology: Structural equation modelling. *Sustainability*, *16*(19), 8496–8509. https://doi.org/10.3390/su16198496

Sofwan, M., Yaakob, M. F. M., & Habibi, A. (2024). Technological, pedagogical, and content knowledge for technology integration: A systematic literature review. *International Journal of Evaluation and Research in Education (IJERE)*, *13*(1), 212–222. https://doi.org/10.11591/ijere.v13i1.26643

Tabandeh, A., Jia, G., & Gardoni, P. (2022). A review and assessment of importance sampling methods for reliability analysis. *Structural Safety*, *97,* 1–18. https://doi.org/10.1016/j.strusafe.2022.102216

Toufaily, E., Zalan, T., & Dhaou, S. Ben. (2021). A framework of blockchain technology adoption: An investigation of challenges and expected value. *Information and Management*, *58*(3), 1–17. https://doi.org/10.1016/j.im.2021.103444

Turnbull, D., Chugh, R., & Luck, J. (2021). Transitioning to E-Learning during the COVID-19 pandemic: How have higher education institutions responded to the challenge? *Education and Information Technologies*, *26*(5), 6401–6419. https://doi.org/10.1007/s10639-021-10633-w

Yuanjue, Y., Senathirajah, A. R. B. S., Ramasamy, G., Qazi, S. Z., Fauzee, M. S. O., Haque, R., & Lertatthakornkit, T. (2025). Sports products and services: Technological acceptance and psychological factors influencing online purchase behavior amongst university students. WSEAS Transactions on Business and Economics, 22, 2444–2455. https://doi.org/10.37394/23207.2025.22.192

Wang, G., Tan, G. W. H., Yuan, Y., Ooi, K. B., & Dwivedi, Y. K. (2022). Revisiting TAM2 in behavioral targeting advertising: A deep learning-based dual-stage SEM-ANN analysis. *Technological Forecasting and Social Change*, *175,* 1–15. https://doi.org/10.1016/j.techfore.2021.121345

Appendix A

Items

Indonesian
Jenis Kelamin
Semester:
Umur

Computer Self-Efficacy
1. Saya bisa menyelesaikan tugas menggunakan e-learning jika saya hanya memiliki petunjuk manual.
2. Saya merasa percaya diri dalam menggunakan e-learning jika ada orang lain yang membantu saya untuk memulai.
3. Saya bisa menyelesaikan tugas menggunakan e-learning jika saya memiliki banyak waktu untuk menyelesaikannya.
4. Saya merasa nyaman menggunakan e-learning jika saya memiliki akses ke petunjuk manual.

Subjective Norm
1. Orang-orang yang berpengaruh dalam hidup saya berpikir bahwa saya harus menggunakan e-learning.
2. E-learning adalah kebiasaan yang umum di lingkungan saya.
3. Orang-orang yang penting bagi saya berpikir bahwa saya harus menggunakan e-learning.
4. Saya merasa diharapkan untuk menggunakan e-learning oleh orang-orang di sekitar saya.

Knowledge
1. E-learning memungkinkan saya untuk mengelola pengetahuan secara efektif.
2. Saya menggunakan e-learning untuk berbagi pengetahuan dengan orang lain.
3. E-learning memungkinkan saya untuk menyimpan dan mengakses pengetahuan kapan saja.
4. Saya menggunakan e-learning untuk memperbarui pengetahuan saya secara rutin.

Relative Advantage
1. E-learning memberikan keuntungan lebih dibandingkan metode pembelajaran tradisional.
2. Menggunakan e-learning membuat saya lebih produktif dalam belajar.
3. E-learning memungkinkan saya untuk belajar dengan cara yang lebih fleksibel.
4. Saya merasa e-learning memberikan manfaat yang lebih besar dibandingkan metode lain.

Compatibility
1. E-learning kompatibel dengan gaya belajar saya.
2. Saya merasa e-learning sesuai dengan cara saya belajar.
3. E-learning cocok dengan kebutuhan saya dalam belajar.

Complexity
1. Saya merasa e-learning sulit untuk digunakan.
2. E-learning membutuhkan usaha ekstra untuk memahami cara kerjanya.
3. Saya merasa e-learning terlalu rumit untuk digunakan secara rutin.

Management support
1. Manajer tertarik pada penggunaan layanan e-learning.

2. Manajer bersedia berinvestasi pada sumber daya yang diperlukan.
3. Manajer bersedia mengambil risiko yang terlibat dalam penggunaan elearning.

Innovation
1. Saya sadar bahwa penggunaan e-learning membawa inovasi dalam pengajaran dan pembelajaran
2. Saya menyadari penggunaan e-learning membawa inovasi dalam pengajaran dan pembelajaran

Quality
1. Saya merasa kualitas e-learning yang saya gunakan sangat baik.
2. E-learning yang saya gunakan memiliki kualitas yang konsisten.

E-learning readiness
1. Saya memiliki keyakinan positif terhadap efisiensi e-learning dalam studi saya.
2. Saya seorang pelopor dalam menggunakan e-learning dalam studi saya.
3. Jika saya ingin menggunakan e-learning dalam studi saya, saya lebih suka menggunakan fitur dasar.
4. Saya tidak percaya menggunakan e-learning dalam penelitian saya.

Actual use of e-learning
1. Saya benar-benar menggunakan e-learning untuk belajar.
2. Saya sering menggunakan e-learning dalam kegiatan belajar saya.
3. Saya menggunakan e-learning secara teratur untuk berkolaborasi.

Indonesian
Gender
Semester:
Age

Computer Self-Efficacy
1. I can complete the task using e-learning if I only have manual instructions.
2. I feel confident in using e-learning if someone else helps me to get started.
3. I can complete the task using e-learning if I have plenty of time to complete it.
4. I feel comfortable using e-learning if I have access to manual instructions.

Subjective Norm
1. Influential people in my life think that I should use e-learning.
2. E-learning is a common habit in my environment.
3. People who are important to me think that I should use e-learning.
4. I feel expected to use e-learning by those around me.

Knowledge
1. E-learning allows me to manage knowledge effectively.
2. I use e-learning to share knowledge with others.
3. E-learning allows me to store and access knowledge at any time.
4. I use e-learning to update my knowledge regularly.

Relative Advantage
1. E-learning provides more advantages over traditional learning methods.
2. Using e-learning makes me more productive in learning.

3. E-learning allows me to learn in a more flexible way.
4. I feel e-learning provides greater benefits compared to other methods.

Compatibility
1. E-learning is compatible with my learning style.
2. I believe e-learning suits my learning style.
3. E-learning suits my needs in learning.

Complexity
1. I find e-learning difficult to use.
2. E-learning requires extra effort to understand how it works.
3. I find e-learning too complicated to use regularly.

Management support
1. Managers are interested in the use of e-learning services.
2. The manager is willing to invest in the necessary resources.
3. Managers are willing to take the risks involved in the use of elearning.

Innovation
1. I am aware that the use of e-learning brings innovation in teaching and learning
2. I realize the use of e-learning brings innovation in teaching and learning

Quality
1. I feel the quality of the e-learning I use is excellent.
2. The e-learning I use is of consistent quality.

E-learning readiness
1. I have a positive belief in the efficiency of e-learning in my study.
2. I am a pioneer in using e-learning in studies death.
3. If I want to use e-learning in my studies, I am more like to use basic features.
4. I do not believe in using e-learning in my research.

Actual use of e-learning
1. I actually use e-learning for learning.
2. I often use e-learning in my learning activities.
3. I use e-learning regularly to collaborate.