

Exploring Determinants of Online Learning Acceptance: The Role of Readiness, Peer Support, and Instructional Support

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Abstract: This study investigates influential aspects of students' acceptance of online learning: students' readiness, peer support, and instructional support. Readiness, driven by motivation, technical skills, and self-management, affects online learning participation. This readiness is made up of self-learning and communication abilities in online environments, which influence acceptance and satisfaction. Peer support inspires collaboration and enhances learning gains. It reduces loneliness, boosts motivation, and facilitates teamwork, while instructional support aids learning through organized interaction and feedback. Instructional support (e.g., immediate feedback and well-structured instruction) also improves engagement and perceived accomplishment in online education. The study employed a systematic sampling plan, using 308 students at an American university pursuing online or blended courses. Confirmatory factor analysis was used to validate the measurement model, confirming construct validity and reliability. Structural equation modeling confirmed the tested hypotheses and relationships among the variables. Students who perceive online learning as useful and convenient are more inclined to engage with the learning management system, which aligns with the technology acceptance model. Psychological, technological, and behavioral readiness play a primary role in determining whether self-efficacious and self-regulated learners will adapt. Peer support is important in offsetting the alienating effect of e-learning and facilitating engagement, motivation, and cognitive presence. Interpersonal behavior, such as peer mentoring and group discussion, increases social belonging, reduces anxiety, and develops academic resilience. Instructional support is critical to the acceptance of online learning. Timely scaffolding and immediate feedback increase students' engagement and motivation. Institutional investments in technical and non-technical resources enable active participation. The study's broader implications are multifaceted and require a holistic approach focusing on content delivery, actively preparing students, fostering social connections, and supporting them throughout their journey. Student readiness is not a static trait; rather, it can be intentionally developed over time. Administrators should take pre-emptive measures with course design and focused interventions, like student training that promotes independence and empowerment. Institutional-level policies promoting peer-to-peer cooperation will enable universities to raise the general acceptability of online learning, student involvement, and satisfaction. Instructional support must prioritize clarity and engagement to foster student acceptance of online learning. Institutions can significantly enhance the acceptance of online learning by employing academic and emotional support, integrating technology, and providing comprehensive learning support services. In addition, institutions must constantly build and maintain a solid technology and non-technology support system that includes e-advising, e-tutoring, and mental health counseling for online students. The study advances e-learning practices by reframing student readiness as a dynamic quality that organizations can cultivate with focused instruction and assistance. The results offer practical advice for creating welcoming, stimulating, and encouraging online environments that increase student acceptance of online learning.

Keywords: Online learning acceptance, Readiness for online learning, Peer support, Instructional support, Online learning, Higher education

1. Introduction

Online learning has become a mainstay of higher education in recent years due to technology developments, easy access to the internet, and growing demand for flexible learning choices (Seaman, Allen and Seaman, 2018). Online learning offers a more flexible and customized learning environment, enabling students to engage with course content asynchronously. However, this shift also introduces new challenges, particularly regarding students' acceptance of online learning environments. Educational institutions aiming to ensure student success and enhance learning outcomes in online settings must understand the factors influencing students' acceptance of these platforms (Al-Fraihat, Joy, and Sinclair, 2020). To this end, this study emphasizes three key elements: students' readiness, peer support, and instructional support.

In higher education, online learning must be appropriate, acknowledged, and accepted by students with various capacities and resources (Sharif-Nia, et al., 2024). Students' acceptance of online learning is influenced by their degree of readiness to interact with online learning environments. Among the elements shaping this readiness are personal drive, technological preparedness, and the perceived value of online learning resources. Since

online learning heavily relies on students' preparation, motivation, self-discipline, and computer proficiency, their ability to engage effectively in online education varies significantly (Joosten and Cusatis, 2020). This variation in students' engagement underscores the importance of readiness, as adapting to online environments often demands different skills and attitudes than those required in conventional face-to-face settings (Hung, et al., 2010). Students with the necessary skills and internal motivation are more likely to embrace and succeed in online learning environments (Xu, et al., 2023).

In addition to student readiness, peer support is critical in fostering students' acceptance of online learning. Peer support refers to the social, intellectual, and emotional encouragement that students receive from one another throughout their educational journey. Research has shown that peer interactions build a sense of community, increase engagement, and improve learning outcomes in online settings. Establishing and nurturing peer networks in digital environments can help reduce feelings of isolation and create a more interactive and collaborative learning experience (Huang et al., 2023). This is particularly important in online courses, where the lack of real-time social interaction can hinder motivation and involvement (Kebritchi, Lipschuetz, and Santiago, 2017).

Equally important is the role of instructional support in shaping students' perceptions and experiences in online learning. Instructional support includes technical resources facilitating learning and non-technical elements, such as academic assistance, prompt feedback, and a well-structured course design. Lasekan, et al. (2024) highlight the need for support systems (home, school, and peers) to manage the complex nature of the challenges associated with online learning. Furthermore, instructional support helps deal with information overload and perceived technical skill requirements, poor class format, and ambiguous communication, all of which affect perceived learning (Conrad, et al., 2022). Thus, schools must offer technological and non-technical support to promote positive student experiences and the acceptance of online learning environments.

These factors, readiness, peer support, and instructional support, are closely linked to the Technology Acceptance Model (TAM) theoretical framework. TAM posits that perceived usefulness and perceived ease of use are central determinants of technology adoption (Davis, 1989). In the context of online education, the flexibility and customization afforded by asynchronous engagement enhance the perceived usefulness of these platforms. Similarly, students' readiness, encompassing personal enthusiasm, technological competence, and perceived value of online learning resources, plays a crucial role in shaping both the perceived ease of use and the perceived usefulness of online learning environments (Joosten and Cusatis, 2020). Peer support further reinforces these perceptions by mitigating loneliness often experienced in online courses, thus influencing students' willingness to interact (Thongsri, et al., 2021; Sarfraz, et al., 2022). Moreover, instructional support directly impacts students' experiences by reducing barriers to engagement and promoting positive perceptions of online learning platforms (Zhao, Shao, and Su, 2022). Consequently, a comprehensive understanding of how readiness, peer support, and instructional support align to promote acceptance is essential for educational institutions seeking to foster greater adoption and success in online learning environments (Al-Fraihat, Joy and Sinclair, 2020).

Many concerns remain regarding the interactions among the aspects influencing the acceptance of online learning. Studies have been undertaken in higher education environments linking acceptance to issues like achievement outcomes (Szymkowiak and Jeganathan, 2022), economic sustainability (Ahmad, et al., 2023), and process virtualization (Alarabiat, et al., 2024), for example. According to Venkatesh, et al. (2003), a substantial amount of the current published research has focused mostly on technical aspects, such as the alleged simplicity of online learning systems. This trend is still relevant amongst more recent literature (e.g., Salloum, 2018; Baber, 2021; Thongsri, et al., 2021; Szymkowiak and Jeganathan, 2022; Loi, et al., 2023; Halász and Kenesei, 2024; and Sharif-Nia, et al., 2024). Despite this extensive research on online learning acceptance, a critical gap persists in understanding how non-technical factors, such as student readiness, instructional support, and peer interaction, interrelate and influence outcomes. This gap is particularly pressing as higher education increasingly adopts hybrid and fully online models, demanding a more integrated examination beyond technical usability. The broader significance of the study within the e-learning field is that it highlights the need to move beyond technical considerations in online learning environments and address the human and pedagogical dimensions that affect student success and engagement. This research aims to close the identified gap by systematically examining the following research question: How do the nontechnical factors of student readiness, peer support, and instructional support influence students' online acceptance of online learning? By focusing on student readiness, peer support, and instructional support, this research targets human and pedagogical dimensions of online learning that can be crucial to learner success. While individual studies have explored these factors in isolation, few have systematically examined how they interact to influence online learning acceptance. Analyzing

these interrelated components will help the research provide insights that will direct institutional policies and support instructors in establishing more successful online learning environments appropriate for a contemporary student population. Doing so provides a more holistic framework for understanding online learning acceptance, ultimately informing more inclusive and effective educational strategies. The remainder of this paper provides a review of the acceptance of online education, student readiness, peer support, and instructional support literature. Next, the theoretical model is empirically tested using structural equation modeling. Finally, a discussion of the model results, implications for higher education institutions, research limitations, and recommended future research is presented.

2. Literature Review

2.1 Students' Online Learning Acceptance

Students' acceptance of online learning reflects their willingness and preparedness to utilize its tools, platforms, and methodologies. Acceptance plays a crucial role in determining the overall success and perceived value of online learning as it helps level the initial environment for students (Loi, et al., 2023). Improving engagement and effectiveness in online learning environments requires understanding the aspects influencing students' acceptance of online learning. Learners' attitudes toward e-learning can be shaped by several personal, societal, and institutional elements, therefore affecting its acceptability (Sharif-Nia, et al., 2024). Robinson (2024) suggested that students consult various professionals for advice on efficient online learning practices. This shows the need for support systems in boosting student confidence and interaction with online learning. Moreover, Zheng, Bender and Lyon (2021) noted that students' acceptance of online learning in higher education environments primarily depends on their positive attitudes towards online learning and instructional strategies.

Strong e-learning systems greatly affect students' willingness to accept online learning, claims Goh and Blake (2021). In line with this, Salloum (2018) underlined that the acceptability and success of e-learning systems in higher education depend on the opinions and attitudes of the students. These results imply that institutions must invest in pedagogical techniques and technology developments to improve student acceptability and involvement in online learning environments. Acceptance of online learning by students is a complicated concept influenced generally by technical, institutional, and human aspects (Chaka and Govender, 2017). Administrators and instructors who know and enable these elements can create more successful online learning environments that satisfy different student needs.

2.2 Students' Readiness for Online Learning

Students' readiness for online learning plays a pivotal role in shaping student perspectives and experiences within online learning spaces. Readiness is a multidimensional construct encompassing various psychological, technological, and behavioral factors, determining students' ability to engage with and accept online learning (Chung, Subramaniam and Dass, 2020). Rajeb, et al. (2023) realize that institutional designs and student-specific factors determine how individuals embrace online learning. The quality of student participation and performance in online learning depends on knowledge of different readiness dimensions (Jayanthi and Rajalakshmi, 2022). Comfort with e-learning explains how comfortable and confident a student is in working with online systems, and self-management focuses on the ability of a student to plan, organize, and control their learning environment. These factors express the requirement for psychological and behavioral readiness. This implies that students with greater self-control are more confident in an online setting.

Hung, et al. (2010) put forth five essential elements of online learning readiness: self-directed learning, motivation for learning, learner control, computer and internet self-efficacy, and online communication self-efficacy. Each component helps a student be competent in navigating, using, and gaining from online learning environments. Particularly important are self-directed learning and motivation since they allow a student to become naturally motivated to interact with the course contents without direct guidance. Learner control is the capacity to adjust to various learning speeds and approaches; technological self-efficacy affects a student's confident interaction with digital tools. Online communication self-efficacy guarantees that students may participate in debates, work with peers, and get help when necessary (Chung, Noor and Mathew, 2020).

Studies confirm that effective online learning outcomes are positively associated with greater degrees of readiness. Those students with a higher degree of readiness, who accounted for taking up course materials, were more self-directed with prior experience using learning technology (Chau, Law and Tang, 2021). Equally, Wei and Chou (2020) established that attitudes among students toward online learning were highly related to how ready they were, which results in smoother transitions to online learning. Research conducted by Ifinedo (2017) and Kirmizi (2015) provided a foundation for this relationship by showing that students with outstanding

technological self-efficacy and independent learning techniques had a propensity to embrace and succeed in computer-mediated learning environments. Following these findings, the following hypothesis is formulated.

H1: Students' readiness for online learning positively impacts their acceptance of online learning.

2.3 Peer Support

Peer support is important in preparing students for online learning by providing a sense of belonging, mitigating feelings of isolation, and promoting active engagement. Becoming accustomed to online learning poses challenges, including reduced face-to-face communication and limited real-time access to teachers, which could hinder the pace of the academic performance of students. However, peer support relieves these issues by offering collaborative learning experiences, enabling students to transition to online learning more smoothly. Lee, et al. (2011) emphasized that peer interactions, such as group discussions, group projects, peer teaching, peer tutoring, and peer facilitation, are essential in assisting students to adjust to online learning. Through these interactions, students can exchange knowledge, describe complex concepts, and learn problem-solving skills in collaboration. In addition, these activities allow students to refine their independent learning and critical thinking skills, which are crucial to success in online education.

Besides the cognitive benefits, peer support is important in maintaining students' motivation and emotional well-being. Online learning environments can become isolated, negatively affecting students' persistence and motivation (Muilenburg and Berge, 2005). As students actively mentor one another, they build a more cohesive and inclusive learning environment that counteracts the isolating influence of online learning. Emotional support from peers reduces anxiety, fosters a sense of belonging, and encourages students to remain committed to their studies despite challenges. Students' social and communication skills are critical determinants of their readiness for online learning, and these skills are reinforced through peer interactions (Osman, Mohamad and Mohamad 2021). Effective communication, collaboration, and interpersonal skills obtained in peer-facilitated learning environments make students more confident in participating in virtual discussions, engaging with course materials, and seeking assistance as needed. Furthermore, positive interactions with peers minimize anxiety and support a growth mindset, ultimately increasing students' learning readiness and performance (Muslichah, et al., 2022).

Students who engage in peer-supported learning activities acquire essential digital literacy and technological proficiency, which are fundamental for online education. They become more adept at using learning management systems (LMS), online collaboration tools, and communication platforms, increasing their overall readiness for online learning (Thongsri, et al., 2021; Sarfraz, et al., 2022). The enabling characteristic of peer learning serves to prepare, empower, and make students more confident to handle the dynamics of online learning. Based on these observations, peer support is a crucial antecedent to students' readiness for online learning, facilitating their learning achievement, emotional stability, and social competence. The following hypothesis is proposed:

H2: Peer support positively impacts students' readiness for online learning.

Peer support is a significant element in students' acceptance of online learning because it provides a network of intellectual, social, and emotional support. A supportive online learning community encourages student participation through peer interactions that enhance the learning experience (Zhao, Shao and Su, 2022). The necessity of peer connection is well-documented because the absence of social interaction is among the predominant problems in online learning (Muilenburg and Berge, 2005). When students experience isolation, their motivation to attend online courses diminishes, leading to lower acceptance and satisfaction with online learning systems. Conversely, students who develop meaningful peer relationships will likely perceive online learning as beneficial and become more accepting and adaptive to such learning (Fabríz, Mendzheritskaya and Stehle, 2021).

The impact of peer support spans learning's social interaction, cognitive, and affective aspects. Wei and Chou (2020) concluded that how students perceive teachers and how they perceive their peers determines their overall acceptance and satisfaction with online learning. An effective peer network enhances a feeling of belonging, deters apprehension, and stimulates motivation. Such a feeling of belonging is also crucial in transcending common online learning barriers, such as technical difficulty and loneliness (Halász and Kenesei, 2024). Once students know they can rely on their peers for assistance in comprehending course material or troubleshooting technical issues, their confidence in online learning increases. Furthermore, social influence is crucial in organizing students' attitudes towards online learning. Students' peer interaction is accountable for a collaborative learning culture, which upholds the legitimacy and benefits of learning online (Halász and Kenesei,

2024). Facilitating cooperation through group assignments, peer review, and discussion forums makes it possible to have a collaborative learning environment, where students feel appreciated and respected. Such a collaborative setting, in return, enhances participation and academic achievement, thus making online learning a more attractive and viable option for students.

Theoretically, peer support is aligned with the TAM, indicating that perceived usefulness, ease of use, and social influence are crucial determinants of technology acceptance (Davis, 1989). This alignment suggests that peer support can enhance students' perceptions of the usefulness and ease of online learning, reinforcing the influence of social factors on their acceptance of technology. If students observe their peers effectively using online learning environments and deriving benefits from them, they will learn to appreciate online learning as more acceptable and feasible. Thus, Institutions must prioritize activities that promote peer interaction, such as structured peer mentoring programs, online study groups, and interactive learning interfaces (Szymkowiak and Jeganathan, 2022). Peer support is a precursor to the acceptance of online learning since it fulfills social, cognitive, and emotional requirements. By fostering a feeling of community, removing barriers, and consolidating favorable attitudes towards online learning, peer interactions are vital in enhancing students' intentions to utilize and accept online learning. The discussion above supports the following hypothesis:

H3: Peer support positively impacts students' online learning acceptance.

2.4 Instructional Support

Students' acceptance of online learning depends on their access to effective resources that foster engagement, satisfaction, and perceived learning outcomes, all of which can be supported by instructor guidance. As defined by Lee, et al. (2011), instructional support involves answering questions, clarifying misunderstandings, and providing structured feedback to create an effective online learning environment. This support enhances students' motivation and understanding of the material, emphasizing the need for instructor presence in online classrooms (Lee, et al., 2011). Instructional support allows educators to respond to individual students' needs, measure their progress, and adjust their pedagogical approach accordingly (Ahmad, et al., 2023). Full-scale learning support services, such as advising and study assistance, promote learner engagement and individual and collaborative learning (Zhao, Shao, and Su, 2022).

Instructor feedback and engagement are essential to students' acceptance and success in online education. Research indicates that instruction interactions have a greater impact in virtual settings than in traditional classrooms, which implies that the frequency and quality of instructor interaction are vital to student acceptance and learning engagement (Rajeb, et al., 2023; Lasekan, et al., 2024). Moreover, multiple researchers have identified the strong correlation between instructional presence and learner acceptance of e-learning. Immediate feedback via technology tools, like instant messaging, can increase positive attitudes and acceptance of online learning (Maheshwari, 2021). As part of the quality control of an online learning environment, instructor attitude and interaction are useful (Baber, 2021). Effective interactions between the instructor and student provide more opportunities for learning to take place. Lee (2018) supported that quality instructor-student interaction can lead to more student motivation and inspired learning. According to these studies, learners tend to accept e-learning if they perceive instructional support as being timely, responsive, and personalized. When learners feel that the instructors are individually involved in their learning process, they become more interested in the coursework and participate actively in discussions, leading to greater satisfaction and acceptance of the online mode.

In addition, instructional support can ease the difficulties of self-regulated learning in online settings. In contrast with the more traditional face-to-face instruction, e-learning tends to make students commit themselves to being more responsible learners. Facilitative instruction based on formative feedback could enhance learners' self-efficacy and reduce feelings of isolation (Sun and Rueda, 2012). By addressing learners' academic and emotional requirements, instructional support boosts their general learning process and improves their readiness to adopt online learning as a viable education model. Moreover, instructional support and technological support services contribute to developing effective online learning environments (Lee, 2010). Combining instructional and technological support makes students more likely to achieve greater acceptance and performance in e-learning environments. Rajeb, et al. (2023) emphasize that enhanced instructional support significantly increases students' acceptance and satisfaction with online learning methods. Therefore, the following is hypothesized:

H4: Instructional support positively impacts students' online learning acceptance.

Figure 1 illustrates each of the previously proposed hypotheses and the corresponding conceptual framework.

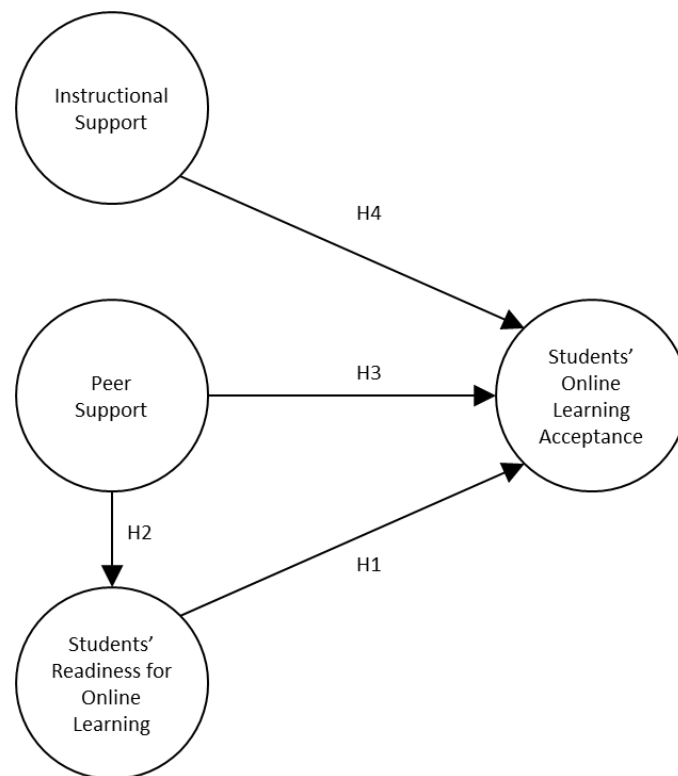


Figure 1: Research Model and Hypotheses

3. Methodology

3.1 Data Collection

The selection approach for this study employed a structured sampling frame that included undergraduate and graduate students currently enrolled in fully online or hybrid courses. Participants were recruited from a four-year university in the southwestern United States. The study adhered to rigorous ethical guidelines, as the Institutional Review Board (IRB) at the researcher's university thoroughly reviewed and approved the research protocol before data collection commenced. The recruitment process was facilitated using the cloud-based SONA Systems platform, which was integrated into the university's research participation system. This platform allowed for efficient participant management and ensured compliance with institutional research guidelines.

All collected data were securely stored in a protected database to maintain strict confidentiality. The research team took extensive measures to anonymize responses, ensuring no personally identifiable information was linked to individual participants. Any findings derived from the study were reported in an aggregated manner to preserve participant privacy. The study yielded 308 usable responses from volunteer participants, who received extra credit as compensation for their involvement. The sample comprised 70% females, 29% males, and 1% individuals with an undeclared gender identity. Additionally, 82% of respondents were undergraduate students, while 18% were graduate students, all representing diverse business disciplines.

3.2 Measurement Scales

The study employed multi-item scales acknowledged and validated within the discipline, distinguished by clearly articulated conceptual frameworks and substantiated by significant evidence of their reliability and validity. All items were selected from established measurement scales; where appropriate, adjustments were implemented to ensure alignment with the study setting. A 7-point Likert scale was utilized to assess responses for all items, with 1 indicating "strongly disagree" and 7 denoting "strongly agree." Compared to other scales, a 7-point Likert scale provides a balanced range of response options, improving measurement sensitivity and permitting more nuance in participants' attitudes without overwhelming respondents as longer scales might. The dependability of each measure was assessed utilizing Cronbach's coefficient alpha. The reliability of each measurement scale was considered acceptable, above the commonly acknowledged threshold of .70 (Hair, et al., 2019). Table 1 shows the reliability of each construct, and Appendix 1 summarizes the measurement scales, their sources, and the items.

Table 1: Reliability of Constructs

Constructs	No. of items	Cronbach's Alpha
Students' Online Learning Acceptance	3	.900
Students' Readiness for Online Learning	6	.881
Peer Support	4	.792
Instructional Support	5	.914

Note. All Cronbach's alphas are significant at the 0.01 level (2-tailed).

4. Results

4.1 Confirmatory Factor Analysis

Brown and Moore (2012) recommended that a confirmatory factor analysis (CFA) be conducted using AMOS Version 29 to evaluate the alignment between observed variables and their respective latent constructs. The measurement model included all construct-related items, which were simultaneously tested with each item constrained to load onto its designated conceptual component. The chi-square test yielded a value of 281.785 with 138 degrees of freedom (df) and a significance level ($p < 0.000$). The normed chi-square value (CMIN/DF = 2.042) was below the critical threshold of 5.0, indicating an acceptable fit. Following established guidelines, additional fit indices were examined to assess model adequacy. Based on criteria from Hair, et al. (2019) and Hu and Bentler (1999), the measurement model demonstrated satisfactory fit, as indicated by the following indices: standardized root-mean-square residual (SRMR) = 0.0521, Goodness-of-Fit Index (GFI) = 0.914, Tucker-Lewis Index (TLI) = 0.951, Comparative Fit Index (CFI) = 0.961, and Normed Fit Index (NFI) = 0.926.

Each variable's average variance extracted (AVE) was examined to assess convergent validity. The AVE for students' online learning acceptance, students' readiness for online learning, peer support, and instructional support exceeded the threshold of 0.50, indicating strong convergent validity (Fornell and Larcker, 1981). Discriminant validity was assessed by comparing the square roots of the AVE values to the maximum squared pairwise correlation (0.583). The results confirmed that the square roots of the AVE values exceeded the correlations between variables, meeting the criteria established by Fornell and Larcker (1981). Furthermore, it was verified that the square roots of the AVE values for each construct were above 0.7 and exceeded the correlations between variables, reinforcing discriminant validity (Fornell and Larcker, 1981). Table 2 displays various characteristics of each measurement scale, including Composite Reliabilities (CR), AVE values, scale correlations, and the square roots of the AVE values.

Table 2: Composite Reliability, Average Variance Extracted, Correlations, and Square Root of AVE

Constructs	CR	AVE	1	2	3	4
Students' Online Learning Acceptance	.903	.700	.837			
Students' Readiness for Online Learning	.875	.539	.549	.734		
Peer Support	.824	.541	.569	.431	.736	
Instructional Support	.916	.687	.516	.367	.548	.829

Note. All correlations are significant at the 0.01 level (2-tailed). Numbers shown on the diagonal denote the square root of the average variance extracted.

4.2 Structural Equation Modeling

Structural equation modeling (SEM) simultaneously examines multiple relationships, accounting for measurement errors and comprehensively evaluating theoretical models (Arbuckle, 2022; Byrne, 2016). This approach is particularly suitable for testing hypotheses (Hair, et al., 2019). Additionally, SEM integrates CFA and path analysis, ensuring that measurement and structural models align with theoretical expectations (Kline, 2023). The analysis demonstrated that the resultant indices, including Chi-square (CMIN = 265.057, df = 141, $p < 0.000$), CMIN/DF (1.880), RMSEA (0.054), SRMR (0.0632), GFI (0.921), TLI (0.959), CFI (0.966), and NFI (0.931), indicated a good fit. An examination was conducted on the structural model's standardized residuals and modification indices, revealing no substantiated rationale for any theoretically significant alterations. These findings align with the recommendations of Hair, et al. (2019) and Hu and Bentler (1999), suggesting that the postulated structural model that underlies the study was deemed appropriate for continued investigation.

All standardized beta estimates had positive values and demonstrated statistical significance. The path coefficients were analyzed to determine if the collected evidence supported the hypotheses. The higher measurement of a student's readiness for online learning was positively related to a higher measurement of the student's online learning acceptance ($\beta = 0.258$, $t = 4.897$). The higher perception of peer support was positively related to a higher measurement of the students' readiness for online learning ($\beta = 0.571$, $t = 6.451$). It was found that a higher perception of peer support was positively related to a higher measurement of the student's online learning acceptance ($\beta = 0.301$, $t = 3.905$). Finally, a higher perception of instructional support was positively related to a higher measurement of the student's online learning acceptance ($\beta = 0.230$, $t = 4.298$). Table 3 presents the beta values, t-values, and tests of hypothesized relationships of the constructs.

Table 3: Results of Hypothesis Testing

	Hypothesis Pathways	β value	t-value	Results
H1	Students' Readiness for Online Learning $\rightarrow$ Students' Online Learning Acceptance	.258	4.897	Supported
H2	Peer Support $\rightarrow$ Students' Readiness for Online Learning	.571	6.451	Supported
H3	Peer Support $\rightarrow$ Students' Online Learning Acceptance	.301	3.905	Supported
H4	Instructional Support $\rightarrow$ Students' Online Learning Acceptance	.230	4.298	Supported

Note. All t-values are significant at $p < .001$

5. Discussion

The results support a positive relationship between students' online learning readiness and acceptance. A complex concept, readiness consists of psychological, technological, and behavioral elements influencing students' capacity to participate in online learning (Chung, Subramaniam, and Dass, 2020). Thus, increasing acceptance and efficiency depends on the evaluation of readiness. Before or at the beginning of a course, it is essential to measure and foster student readiness by administering structured readiness assessments. More ready students are often confident and creative, improving their capacity to negotiate online learning settings (Yusuf, et al., 2021). Higher readiness, defined by self-regulation, drive, and technological competency, correlates with greater acceptance, as confident students are more inclined to embrace online learning (Ucar and Ugurhan, 2023). Implementing targeted workshops that focus on enhancing digital literacy, time management, and self-regulation skills can provide students with the foundational competencies required for success in engagement with the course. Strong self-efficacy and digital literacy also help students move more naturally into online learning, supporting the connection between acceptance and readiness (Wei and Chou, 2020; Saqr, Al-Somali and Sarhan, 2024). Incorporating confidence-building activities alongside regular, formative feedback can significantly strengthen students' self-efficacy and engagement throughout the learning process. Thus, student acceptance and success depend on encouraging readiness.

The study supports the critical need for peer support in addressing acceptance issues, as an influence on student readiness and acceptance. Peer support becomes crucial given limited face-to-face contact and immediate access to the instructor. Course designers should include mandatory peer interactions, like forums, discussion groups, and peer reviews, to provide structured support to help clarify concepts, exchange knowledge, and solve problems. These interactions are essential for the effectiveness of online education as they foster critical thinking and self-directed learning. Educators should actively promote and integrate structured peer support systems into the design and delivery of online courses. These strategies are effective in enhancing student engagement, motivation, and confidence and are essential for reducing feelings of isolation, a common barrier in online learning environments. Peer mentorship programs can connect experienced or high-performing students with newer learners, providing a valuable avenue for sharing strategies, building digital literacy, and fostering a sense of belonging. Study groups offer regular opportunities for academic collaboration and clarification of course content, encouraging deeper cognitive engagement and reinforcing accountability. Collaborative projects develop teamwork, communication, and problem-solving skills, all while enhancing students' readiness and willingness to accept online learning modalities.

The findings indicate that students who receive peer support exhibit increased engagement, motivation, and cognitive presence in online learning environments. A common issue in online education, isolation, is lessened by peer collaboration, which also helps the learning group to feel belonging (Gao, et al., 2024). Social presence,

the view of peers as real and engaging humans in an online environment, helps students participate in higher-order cognitive processes, improving the learning environment (Lee, 2014). This finding is consistent with research demonstrating that knowledge-sharing activities, peer discussions, and group projects contribute to students' academic persistence and success in online learning (Huang, et al., 2023). In order to develop confidence and acceptance in online learning, students should model their behavior on successful classmates. Observing peers effectively manage their online courses motivates students to use the same techniques, enhancing their technological skills. This is consistent with social learning theory, which says people acquire abilities by observing others and mimicking their behavior (Bandura, 1986). Well-run peer mentorship programs give students opportunities for direction, support, and shared experiences, enabling them to accept online learning even more. Programs encouraging interactions, such as debating forums and combined projects, help students to be open to online learning approaches (Mudau and Van den Berg, 2023). By institutionalizing these peer-driven initiatives, administrators and educators can create a supportive and socially rich online environment that encourages active participation, increases persistence, and ultimately improves academic outcomes.

Strong online infrastructure improves student experiences, hence institutional support also matters (Rajeb, et al., 2023). The research emphasizes how instructional support can help students accept online learning. Effective instructional support improves learning, increases involvement, and encourages participation. In online courses, instructors who apply interactive learning techniques give timely comments and use adaptive procedures to raise student motivation (Redmond, et al., 2023). Institutions must provide continuous academic and technical support through virtual office hours and digital help centers to meet student needs. Courses should incorporate multimedia elements, gamification techniques, and a clear, well-organized design to enhance engagement and minimize frustration. Access to these options fosters acceptance of online education and confidence. In online courses, instructional scaffolding, which provides ordered direction while boosting learner autonomy, greatly enhances engagement and performance (Zhu and Bonk, 2022).

Acceptance of online learning also depends on institutional assistance. Universities that invest in technology and non-technology-based tools, educator training, and digital infrastructure raise students' motivation and confidence. Instructors should be trained to effectively use interactive tools, deliver timely feedback, and implement instructional scaffolding strategies that foster student autonomy. Engagement is improved by organized interventions like LMS access, digital literacy courses, and instructor development (Robinson, 2024). Overall, this research deals with filling existing research gaps by reinforcing that online learning readiness is multidimensional and has a bearing on student acceptance of online learning. It integrates previously fragmented literature on readiness, peer support, and institutional factors. It also explicitly links social learning theory to peer support structures and thus provides a theoretical basis for observed behaviors related to online learning. Additionally, it advocates for practical interventions such as readiness assessments, peer mentoring, or buddy systems, and structured digital literacy workshops that have typically been cited in isolation in previous studies.

6. Conclusion

This study significantly impacts e-learning practices by shifting the focus from purely technical aspects of online learning acceptance to a more holistic understanding of the human and pedagogical dimensions involved. Specifically, it highlights how student readiness, peer support, and instructional support are critical nontechnical factors that shape students' willingness to engage in and succeed with online learning. The broader implications of these findings for online education are significant and multifaceted, requiring a holistic approach that not only focuses on content delivery but also actively prepares students, fosters social connections, and supports them throughout their learning journey.

Student readiness promotes success and acceptance in online environments; however, it is not a fixed trait. It can be deliberately cultivated through structured interventions. The study shows that fostering readiness through initiatives that build digital literacy, time management, motivation, and self-directed learning can increase students' confidence and engagement. Readiness is made up of several components, including technological and social competencies, which enhance a student's ability to participate effectively in online learning (Chung, Subramaniam, and Dass, 2020). Educators should take proactive steps in course design and implement training programs that promote independence and empowerment. Peer support is emphasized as a powerful mechanism for reducing isolation, enhancing motivation, and building a collaborative learning culture, thereby improving both readiness and acceptance. It drives engagement by increasing sociability, sustaining interest, and fostering investment through cooperative learning. Therefore, policies that promote peer-to-peer

cooperation should be implemented at the institutional level and embedded into the core of academic activities, rather than treated as optional. Course design should strategically include peer interaction as a purposeful element to leverage its influence on acceptance and involvement.

Instructional support, including timely feedback, appropriate guidance, and structured communication, is shown to elevate student satisfaction and learning outcomes. For instructional support to foster student acceptance, it must prioritize clarity, engagement, and consistent presence. Institutions can significantly enhance online learning acceptance by integrating academic and emotional support, encouraging instructor-student interaction, and providing comprehensive support services. This includes functional LMS platforms, e-advising, e-tutoring, and mental health counseling. Professional development programs must equip educators with tools to design more interactive online environments. These programs should include training on digital technologies that foster interactivity, methods to encourage peer engagement, and strategies for delivering multimedia feedback effectively (Lasekan et al., 2024). By integrating these nontechnical elements into course design and institutional strategies, this study provides a practical roadmap for improving the effectiveness and inclusivity of e-learning. Its findings support a more student-centered approach, one that advances not only technology adoption but also sustainable academic engagement and success in online learning environments.

7. Limitations and Future Research

This study presents several limitations that should be addressed in future research. One key limitation is sampling bias, as the students were drawn exclusively from a single university. This limited demographic diversity may reduce the generalizability of the findings to students from different institutions or cultural backgrounds. The use of convenience sampling may further compound this issue because the students who volunteer may not accurately represent the broader student population. Additionally, the reliance on self-reported data introduces potential bias through socially desirable responses and memory inaccuracies. Poorly worded or ambiguous survey items may have also contributed to measurement error and respondent uncertainty. To improve the robustness of future studies, research should consider recruiting a more diverse and representative sample using stratified or random sampling methods across multiple universities and regions. Employing mixed-method approaches, such as combining self-reports with direct behavioral observations or academic performance data, can enhance the validity of findings. Moreover, future research should explore longitudinal designs to examine the long-term impact of preparatory programs on students' success and sustained engagement in online learning environments. Investigating the integration of adaptive learning technologies and artificial intelligence tools can also provide insights into how personalized support systems influence student readiness, acceptance, and achievement. These directions will contribute to a more comprehensive understanding of effective practices in online education.

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Appendix 1: Scale Items and Factor Loadings

Construct/Item (Source)	Loadings
Students' Online Learning Acceptance (Lee, 2010)	
If I need to study for advanced degrees (programs), I expect to use my school's online learning system.	.690
If asked, I would likely recommend my school's online learning system as an ideal learning platform.	.905
For future advanced degrees (programs/certificates), I would probably use my school's online learning system.	.834
Overall, I am satisfied with my school's online learning system.	.847
Students' Readiness for Online Learning (Hung, et al., 2010)	
I manage my time well.	.758
I set up my learning goals	.742
I have higher expectations for my learning performance.	.762
I can direct my own learning progress.	.759
I have the motivation to learn.	.719
I improve from my mistakes.	.654
Peer Support (Lee, et al., 2011)	
In my online courses, I enjoyed the group discussions.	.701
In my online courses, there were many opportunities to interact with peers.	.836
In my online courses, I felt that I was respected by other students.	.704
In my online courses, students were willing to provide help to other students.	.682
Instructional Support (Lee, et al., 2011)	
In my online courses, I felt that I could ask any questions regarding the course materials to the instructor.	.803
In my online courses, there were appropriate ways of communicating with the instructor.	.812
In my online courses, I felt that the instructor was easily accessible.	.929
In my online courses, the instructor encouraged students to be successful in this course.	.705
In my online courses, the instructor responded to students' questions in a timely manner.	.877

Note. All measures employed a 1–7 Likert-type scale.