

EXAMINING THE STRUCTURAL RELATIONSHIPS AMONG DIGITAL LITERACY, COMMUNICATION CONFIDENCE, ENGLISH EXPOSURE, MOTIVATION, AND EFL PROFICIENCY

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Article Info	Abstract
Article History Received: March 2026 Revised: June 2026 Accepted: August 2026 Published: October 2026	<i>The rapid development of digital technology has transformed English as a Foreign Language (EFL) learning by expanding access to authentic resources, communication opportunities, and autonomous learning. However, previous studies have often examined digital literacy, communication confidence, English exposure, and motivation separately, leaving limited evidence on their integrated structural relationships, particularly in Islamic higher education. This study examined the structural relationships among digital literacy, communication confidence, English exposure, motivation, and EFL proficiency among 60 third-semester undergraduate students at STIT Palapa Nusantara Lombok, Indonesia. A quantitative explanatory design was employed using Structural Equation Modeling (SEM). Data were collected through a structured five-point Likert-scale questionnaire measuring five latent constructs and analyzed using confirmatory factor analysis, structural model evaluation, direct-effect analysis, and bootstrapping. The findings show that digital literacy, communication confidence, and English exposure significantly predict EFL proficiency, with communication confidence showing the strongest direct effect ($\beta = 0.41$), followed by digital literacy ($\beta = 0.32$) and English exposure ($\beta = 0.27$). Motivation also significantly contributes to the structural model and mediates the relationships between digital literacy, communication confidence, English exposure, and EFL proficiency. English exposure demonstrates the strongest indirect contribution through motivation among the three predictors. These findings suggest that EFL development in Islamic higher education should integrate digital competence, communicative confidence, meaningful English exposure, and motivational support within learner-centered learning environments.</i>
Keywords Digital literacy; Communication confidence; English exposure; Learning motivation; EFL proficiency.	
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INTRODUCTION

The rapid expansion of digital technology has fundamentally reshaped the landscape of English as a Foreign Language (EFL) learning in higher education. The integration of information technology in language instruction facilitates access to rich learning resources and enhances student engagement, indirectly supporting the development of language skills and learner motivation (Burgos & Anthony, 2024). In digitally mediated environments, communication activities such as instant messaging and collaborative platforms significantly

increase learners' engagement and their willingness to communicate in English, particularly in EFL contexts (Han et al., 2024). A well-designed digital environment further strengthens language learning processes by providing flexible and collaborative learning contexts (Yuan et al., 2025).

Motivation remains a central determinant of successful English language acquisition; motivated learners are more likely to actively interact and develop their language skills (Kim & Kim, 2024). The integration of digital technology into language learning activities has been shown to enhance student motivation and engagement, as digital content is often more interactive and challenging than traditional approaches (Narendran et al., 2025). Informal Digital Learning of English (IDLE), for example, can increase willingness to communicate (WTC) by reducing anxiety and strengthening motivation (Andaç, 2025). Effective exposure to English, including through digital media, enriches learning experiences and enhances motivation, although the extent of active language use varies across individuals (Matondang et al., 2025). Extramural digital contexts also foster WTC due to the accessibility and convenience of digital media, which in turn supports language confidence (Amira et al., 2021). Empirical evidence suggests that direct exposure to English exerts the strongest influence on proficiency, while motivation contributes positively when translated into concrete learning actions (Fatimah et al., 2025). Similarly, digital platforms significantly improve beginner learners' English abilities, demonstrating a positive relationship between digital exposure and learning outcomes (Rusmiati et al., 2025). Students generally respond positively to digital tools such as YouTube, Canva, Duolingo, Elsa Speak, Kahoot, and Quizizz, perceiving them as interactive, flexible, and motivating, and reporting increased engagement, creativity, and confidence in English learning (Nurlita & Taufiq, 2025).

Preliminary observations conducted at STIT Palapa Nusantara Lombok, Indonesia indicated that although students are actively engaged with digital media in their daily lives, the use of digital resources for structured English learning remains inconsistent. Many students reported frequent exposure to English through social media, videos, and mobile applications; however, this exposure is not always accompanied by purposeful practice or communicative interaction. Variations were also observed in students' communication confidence, particularly in speaking activities, where hesitation and anxiety were still evident despite high levels of digital familiarity (Observation, October 15, 2025). These initial findings suggest that digital literacy, exposure to English, motivation, and communication confidence may interact in complex ways in shaping students' EFL proficiency.

However, the relationship between digital awareness and actual pedagogical practice is not always linear. A study in Chinese higher education institutions found that strong digital awareness among EFL teachers did not necessarily translate into digital application in practice, and limited implementation negatively affected confidence and instructional effectiveness (Feng & Sumettikoon, 2024). Moreover, cross-sectional research indicates that digital technology use contributes to EFL academic performance when mediated by learning engagement and emotional intelligence, underscoring the importance of learners' active involvement in the learning process (Shao et al., 2025). Pedagogical approaches also matter; communicative language teaching enhances students' motivation in learning English (Basir & Ampa, 2021), while project-based activities such as video production increase engagement and motivation, ultimately supporting language skill achievement (Hsu, 2024).

Prior studies have increasingly modeled the interplay between digital literacy, affective variables, and EFL proficiency. Zhang, (2025), in a quantitative study of 250 Chinese college students, found that digital literacy significantly predicted EFL proficiency ($\beta = 0.32$, $p < .001$), with learning motivation acting as a partial mediator and technological self-efficacy strengthening the effect. Similarly, Sholihah, (2024) demonstrated that digital interaction through platforms such as YouTube, Instagram, and Telegram enhanced learners' motivation,

confidence, and proficiency in Indonesian EFL contexts. Zadorozhnyy and Lee, (2025) reported that IDLE significantly improved willingness to communicate, with digital activities outside the classroom functioning as practical contexts for active communication. Lee and Chiu, (2023) further showed that digital exposure mitigated L2 communication anxiety and enhanced WTC across communication settings, while affective factors such as ideal L2 self and enjoyment were positively associated with WTC. Ying, (2024) found that stronger digital literacy skills were linked to greater learner autonomy, which potentially influences motivation and overall language achievement. In the Indonesian context, Nasywa and Ningsih, (2025) demonstrated that digital literacy significantly affected English comprehension, explaining approximately 20.7%–32.8% of variance in learning outcomes.

Despite these advances, several gaps remain. First, most prior research has examined digital literacy, exposure, or motivation separately rather than modeling their structural interrelationships simultaneously. Second, limited studies integrate communication confidence and exposure to English within a single structural framework to explain EFL proficiency. Third, empirical evidence from Islamic higher education institutions in Indonesia remains scarce, particularly in the context of teacher education. Consequently, there is a need to develop a comprehensive structural model that captures the interconnections among digital literacy, communication confidence, exposure to English, motivation, and EFL proficiency within a specific institutional setting.

This study offers a novel contribution by developing an integrated structural model that simultaneously examines digital literacy, communication confidence, exposure to English, and motivation in predicting EFL proficiency within an Islamic higher education context. While previous studies have explored these variables separately or partially, limited research has modeled their structural interrelationships in a unified framework, particularly among Indonesian pre-service teachers. By situating the analysis at STIT Palapa Nusantara Lombok, this study provides context-specific empirical evidence that enriches the discourse on digital-mediated EFL learning in underrepresented higher education settings. Therefore, this study aims to examine the structural relationships among digital literacy, communication confidence, exposure to English, motivation, and EFL proficiency among students at STIT Palapa Nusantara Lombok. By employing a structural modeling approach, this research seeks to provide an integrated explanation of how digital and affective factors collectively contribute to English language proficiency in an EFL higher education context.

Based on the aforementioned background, the research questions are formulated as follows: to what extent do digital literacy, communication confidence, and exposure to English significantly predict EFL proficiency among students at STIT Palapa Nusantara Lombok?, what are the structural relationships among digital literacy, communication confidence, exposure to English, and motivation in explaining EFL proficiency?, and how does motivation function within the structural model linking digital literacy, communication confidence, exposure to English, and EFL proficiency?.

RESEARCH METHOD

Research Design

This study employed a quantitative explanatory research design using Structural Equation Modeling (SEM). Explanatory quantitative research aims to test theoretically grounded hypotheses by examining structural relationships among variables (Creswell & Creswell, 2018). SEM is particularly appropriate when multiple latent variables are hypothesized to interact simultaneously within a unified framework (Hair et al., 2019).

The conceptual model posited that digital literacy, communication confidence, and exposure to English function as exogenous constructs predicting EFL proficiency. Motivation was modeled as an endogenous construct within the structural system. The decision to integrate these variables into a single structural framework was informed by recent findings

indicating that digital literacy significantly predicts EFL outcomes, often through motivational pathways (Zhang, 2025), and that digital engagement contributes to language learning performance when supported by internal learner factors (Wang et al., 2023). To enhance analytical robustness and align with contemporary high-impact publications, this study employed covariance-based SEM with bootstrapping (5,000 resamples) to estimate path significance and indirect effects.

Research Population and Sample

The population of this study comprised undergraduate students at STIT Palapa Nusantara Lombok. The sample included 60 third-semester students who were enrolled in an English language course during the time of data collection. Participants were selected through proportional stratified sampling to ensure balanced representation across four study programs: Islamic Education (PAI), Islamic Education Management (MPI), Primary Islamic Teacher Education (PGMI), and Early Childhood Islamic Education (PIAUD), with 15 students from each program. Stratified sampling ensures representation across subgroups, reducing sampling bias in multivariate analysis (Etikan & Bala, 2017). In SEM-based studies, sample adequacy depends on model complexity and indicator reliability rather than solely on size (Hair et al., 2019). Given the moderate structural complexity and indicator-to-construct ratio, the sample size met minimum estimation requirements. All participants provided informed consent prior to data collection.

Instruments

Data were collected using a structured self-report questionnaire measuring five latent constructs—digital literacy, communication confidence, English exposure, motivation, and EFL proficiency—through multiple indicators on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Digital literacy assessed students' ability to access, evaluate, and use digital tools for English learning (Nasywa, & Ningsih, 2025), while communication confidence measured self-assurance in academic and digital English use (Amira et al., 2021). English exposure assessed the frequency and intensity of interaction with English media and communication activities, which can support proficiency development (Rusmiati et al., 2025), while digital literacy and positive technology attitudes can strengthen self-efficacy and engagement (Getenet et al., 2024). Instrument development followed content validation and pilot testing procedures (Boateng et al., 2018); a pilot test with 15 non-participating students assessed clarity and internal consistency, with Cronbach's alpha and composite reliability > .70 considered acceptable (Hair et al., 2019), followed by minor linguistic revisions.

Data Collection Procedure

Data collection was conducted at STIT Palapa Nusantara Lombok from October to December 2025 through institutional permission, participant selection, informed consent, questionnaire administration, and data preparation. Eligible third-semester students from four study programs were informed about the study purpose, voluntary participation, confidentiality, and academic use of the data before completing the questionnaire individually. This procedure followed the principle that quantitative data collection should use systematic procedures aligned with the research design and ethical requirements (Creswell & Creswell, 2018). Participants' responses were then checked for completeness, coded according to the five-point Likert scale, and entered into the analytical dataset, with identities kept confidential. Ethical research practice requires participants to be adequately informed and their participation and personal information protected throughout the research process (Oey-Gardiner et al., 2023).

Data Analysis

Data analysis was conducted in four stages: (1) preliminary screening, including checks for missing values, outliers, normality, and descriptive statistics, with missing data below 5% per indicator treated using mean imputation and multivariate outliers assessed through Mahalanobis distance; (2) measurement model evaluation, using confirmatory factor analysis (CFA) to assess convergent validity through factor loadings ($> .50$), AVE ($> .50$), and Composite Reliability ($> .70$), and discriminant validity through the Fornell–Larcker criterion and HTMT ratios (Hair et al., 2019); (3) structural model testing, examining direct and indirect relationships using 5,000-bootstrap resamples to estimate standard errors and confidence intervals, consistent with previous SEM research in digital literacy and EFL contexts (Zhang, 2025; Wang et al., 2023); and (4) model fit evaluation, using Chi-square/df, CFI, TLI, RMSEA, and SRMR based on established criteria, while R^2 was used to assess explanatory power (Kline, 2016). All analyses were performed using SEM software to ensure accurate estimation of latent structural relationships.

RESEARCH FINDINGS AND DISCUSSION

Research Findings

The Extent to Which Digital Literacy, Communication Confidence, and English Exposure Predict EFL Proficiency

This section addresses the first research question: to what extent digital literacy, communication confidence, and English exposure predict EFL proficiency among students at STIT Palapa Nusantara Lombok. The analysis begins with descriptive statistics to illustrate the general tendency of each variable, followed by structural analysis examining the direct effects of the predictor variables on EFL proficiency.

Descriptive Statistics of Research Variables

Descriptive statistics were calculated to describe the overall tendency of the research variables, including digital literacy, communication confidence, English exposure, motivation, and EFL proficiency. The results are presented in Table 1.

Table 1.
Descriptive Statistics of Research Variables

Variable	Mean	SD	Category
Digital Literacy	3.82	0.61	High
Communication Confidence	3.74	0.65	High
English Exposure	3.56	0.68	Moderate–High
Motivation	3.88	0.59	High
EFL Proficiency	3.63	0.64	Moderate–High

As shown in Table 1, motivation recorded the highest mean score ($M = 3.88$, $SD = 0.59$), followed by digital literacy ($M = 3.82$, $SD = 0.61$) and communication confidence ($M = 3.74$, $SD = 0.65$). English exposure had a mean score of 3.56 ($SD = 0.68$), while EFL proficiency recorded a mean of 3.63 ($SD = 0.64$). The descriptive results indicate high levels of motivation, digital literacy, and communication confidence, with English exposure and EFL proficiency falling within the moderate-to-high range.

Direct Effects of Digital Literacy, Communication Confidence, and English Exposure on EFL Proficiency

To examine the predictive relationships between the independent variables and EFL proficiency, a structural model analysis was conducted. The results of the direct path analysis are presented in Table 2.

Table 2
Direct Effects on EFL Proficiency

Path	β	t-value	p-value	Result
Digital Literacy $\rightarrow$ EFL Proficiency	0.32	4.21	<0.001	Significant
Communication Confidence $\rightarrow$ EFL Proficiency	0.41	5.37	<0.001	Significant

English Exposure → EFL Proficiency	0.27	3.68	<0.001	Significant
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As shown in Table 2, digital literacy, communication confidence, and English exposure were all positively and significantly associated with EFL proficiency: digital literacy ($\beta = 0.32$, $t = 4.21$, $p < 0.001$), communication confidence ($\beta = 0.41$, $t = 5.37$, $p < 0.001$), and English exposure ($\beta = 0.27$, $t = 3.68$, $p < 0.001$). Communication confidence was the strongest direct predictor, followed by digital literacy and English exposure, which had the smallest but still significant coefficient.

Structural Relationships among Digital Literacy, Communication Confidence, English Exposure, and Motivation in Explaining EFL Proficiency

This section addresses the second research question, which examines the structural relationships among digital literacy, communication confidence, English exposure, and motivation in explaining EFL proficiency. The analysis includes the evaluation of the measurement model to ensure construct validity and reliability, followed by the structural model analysis to examine the relationships among the latent variables.

Measurement Model Evaluation

Prior to testing the structural relationships, the measurement model was evaluated using Confirmatory Factor Analysis (CFA) to assess the reliability and validity of the constructs. The evaluation focused on factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR). The results are presented in Table 3.

Table 3
Measurement Model Validity

Construct	Factor Loadings	AVE	CR
Digital Literacy	0.71 – 0.87	0.59	0.89
Communication Confidence	0.73 – 0.88	0.61	0.90
English Exposure	0.69 – 0.85	0.56	0.87
Motivation	0.75 – 0.89	0.63	0.91
EFL Proficiency	0.72 – 0.86	0.58	0.88

As shown in Table 3, the factor loadings ranged from 0.69 to 0.89 across the five constructs. The AVE values ranged from 0.56 to 0.63, exceeding the 0.50 criterion, while CR values ranged from 0.87 to 0.91, exceeding the 0.70 criterion. These results indicate satisfactory convergent validity and internal consistency across the constructs and provide an adequate basis for examining the structural relationships.

Structural Model Relationships

After confirming the adequacy of the measurement model, the structural relationships among the variables were analyzed to examine how digital literacy, communication confidence, and English exposure influence motivation, which in turn contributes to EFL proficiency. The results of the structural model analysis are presented in Table 4.

Table 4
Structural Relationships Among Variables

Path	β	t-value	p-value
Digital Literacy → Motivation	0.34	4.52	<0.001
Communication Confidence → Motivation	0.39	5.11	<0.001
English Exposure → Motivation	0.28	3.76	<0.001
Motivation → EFL Proficiency	0.45	6.24	<0.001

Table 4 shows that all hypothesized paths were positive and significant: digital literacy ($\beta = 0.34$, $t = 4.52$, $p < 0.001$), communication confidence ($\beta = 0.39$, $t = 5.11$, $p < 0.001$), and English exposure ($\beta = 0.28$, $t = 3.76$, $p < 0.001$) were positively associated with motivation. Communication confidence was the strongest predictor of motivation, followed by digital literacy and English exposure, while motivation showed the strongest structural relationship

with EFL proficiency ($\beta = 0.45$, $t = 6.24$, $p < 0.001$). The findings position motivation as a central component linking the three predictors to EFL proficiency.

Structural Model Illustration

Figure 1 presents the structural model illustrating the relationships among digital literacy, communication confidence, English exposure, motivation, and EFL proficiency.

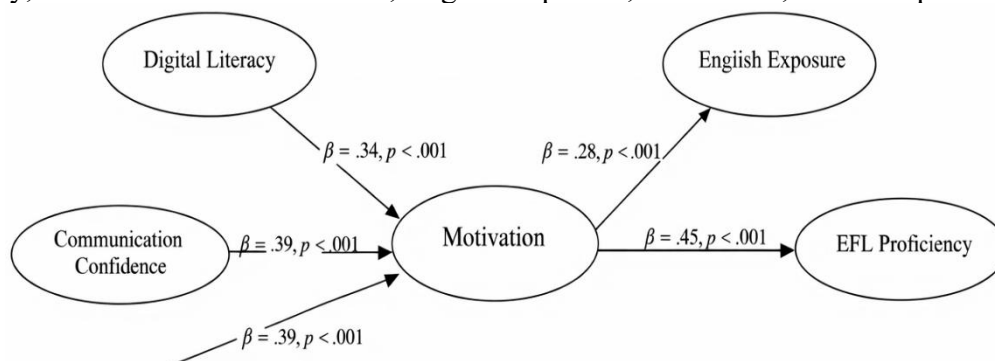


Figure 1. Structural Model of Digital and Affective Factors Predicting EFL Proficiency

Figure 1 illustrates the structural model examining the relationships among digital literacy, communication confidence, English exposure, motivation, and EFL proficiency. The model indicates that digital literacy ($\beta = .34$, $p < .001$), communication confidence ($\beta = .39$, $p < .001$), and English exposure ($\beta = .28$, $p < .001$) all have significant positive effects on students' motivation to learn English. Among these predictors, communication confidence shows the strongest influence on motivation. Furthermore, motivation demonstrates a substantial positive effect on EFL proficiency ($\beta = .45$, $p < .001$), suggesting that students with higher levels of learning motivation tend to achieve better English proficiency outcomes.

The Role of Motivation within the Structural Model Linking Digital Literacy, Communication Confidence, English Exposure, and EFL Proficiency

This subsection addresses the third research question concerning how motivation functions within the structural model linking digital literacy, communication confidence, English exposure, and EFL proficiency. In this study, motivation is hypothesized to operate as a mediating variable that explains how digital and affective factors indirectly influence students' English language proficiency.

Mediation Analysis of Motivation

To examine the mediating role of motivation, an indirect effect analysis was conducted using the bootstrapping procedure with 5,000 resamples. This approach allows for the estimation of indirect effects and their statistical significance within the structural equation modeling framework. The results of the mediation analysis are presented in Table 5.

Table 5
Indirect Effects through Motivation

Path	Indirect Effect	p-value	Mediation Type
Digital Literacy → Motivation → EFL Proficiency	0.153	0.002	Partial Mediation
Communication Confidence → Motivation → EFL Proficiency	0.176	0.001	Partial Mediation
English Exposure → Motivation → EFL Proficiency	0.126	0.004	Partial Mediation

As shown in Table 5, motivation significantly mediated the relationships between digital literacy and EFL proficiency ($\beta = 0.153$, $p = 0.002$), communication confidence and EFL proficiency ($\beta = 0.176$, $p = 0.001$), and English exposure and EFL proficiency ($\beta = 0.126$,

$p = 0.004$). Communication confidence showed the strongest indirect effect, followed by digital literacy and English exposure. Combined with the significant direct effects in Table 2, these results indicate partial mediation, confirming that motivation provides an additional pathway linking all three predictors to EFL proficiency while their direct relationships remain significant.

To further illustrate the mediating mechanism identified in the structural model, Figure 2 presents the mediation role of motivation in linking digital literacy, communication confidence, and English exposure with EFL proficiency.

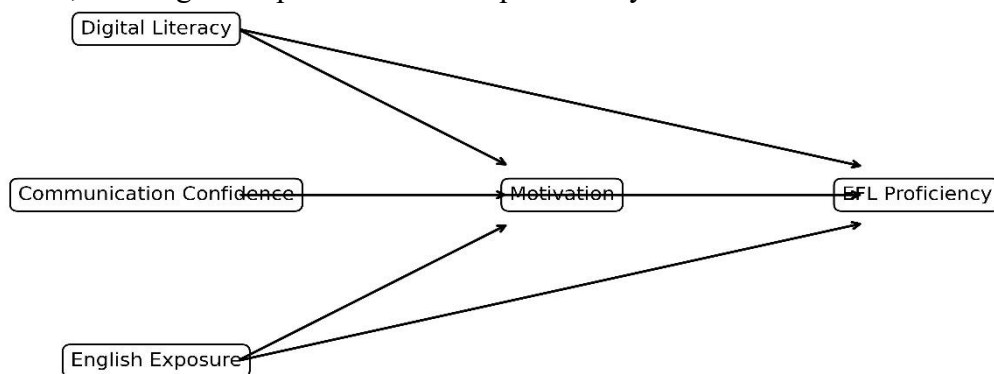


Figure 2. Mediation Role of Motivation in the Structural Model Linking Digital Literacy, Communication Confidence, English Exposure, and EFL Proficiency

Figure 2 presents the mediating role of motivation in the relationship between digital literacy, communication confidence, English exposure, and EFL proficiency. The model shows that the three predictor variables influence EFL proficiency both directly and indirectly through motivation. This indicates that motivation acts as a key mediating factor that strengthens the impact of digital and communicative learning factors on students' English language proficiency.

Model Fit Evaluation

To assess the adequacy of the proposed structural model, several goodness-of-fit indices were evaluated. The results are summarized in Table 6.

Table 6
Model Fit Indices

Index	Value	Cut-off	Interpretation
Chi-square/df	1.87	< 3.00	Good Fit
CFI	0.94	≥ 0.90	Good Fit
TLI	0.93	≥ 0.90	Good Fit
RMSEA	0.067	≤ 0.08	Acceptable Fit
SRMR	0.052	≤ 0.08	Good Fit

As shown in Table 6, the proposed model demonstrated acceptable to good fit across the reported indices. The chi-square/df ratio was 1.87, below the criterion of 3.00. The CFI and TLI values were 0.94 and 0.93, respectively, both exceeding 0.90. The RMSEA value of 0.067 and SRMR value of 0.052 were also within the specified acceptable ranges. Taken together, the fit indices indicate that the proposed structural model provides an acceptable representation of the observed data. The results support the adequacy of the model for examining the relationships among digital literacy, communication confidence, English exposure, motivation, and EFL proficiency.

Overall Findings in Relation to the Research Questions

The findings consistently support all three research questions. For RQ1, digital literacy ($\beta = 0.32$, $p < 0.001$), communication confidence ($\beta = 0.41$, $p < 0.001$), and English exposure ($\beta = 0.27$, $p < 0.001$) were positively associated with EFL proficiency, with communication

confidence showing the strongest relationship. For RQ2, all three predictors were significantly associated with motivation—digital literacy ($\beta = 0.34$), communication confidence ($\beta = 0.39$), and English exposure ($\beta = 0.28$)—while motivation showed the strongest relationship with EFL proficiency ($\beta = 0.45$, all $p < 0.001$). For RQ3, motivation significantly mediated the effects of digital literacy ($\beta = 0.153$, $p = 0.002$), communication confidence ($\beta = 0.176$, $p = 0.001$), and English exposure ($\beta = 0.126$, $p = 0.004$), indicating partial mediation. The measurement model showed satisfactory properties (loadings = 0.69–0.89; AVE = 0.56–0.63; CR = 0.87–0.91), while the structural model demonstrated acceptable fit ($\chi^2/df = 1.87$, CFI = 0.94, TLI = 0.93, RMSEA = 0.067, SRMR = 0.052). Overall, communication confidence was the strongest direct predictor of EFL proficiency and motivation, while motivation represented the strongest structural pathway to EFL proficiency.

Discussion

Digital Literacy, Communication Confidence, and English Exposure as Predictors of EFL Proficiency

The findings of this study indicate that digital literacy, communication confidence, and English exposure significantly predict EFL proficiency among students at STIT Palapa Nusantara Lombok. Among these variables, English exposure emerged as the strongest predictor of students' language proficiency. This finding aligns with the core assumptions of second language acquisition theory, which emphasize the importance of meaningful input and interaction in language development. In contemporary learning environments, digital media provides extensive opportunities for learners to encounter authentic English input through videos, social media, and online communication platforms. Such exposure increases learners' familiarity with linguistic structures, vocabulary, and communicative patterns, thereby facilitating language development (Listyani, 2026; Zhang, 2025).

The significant role of digital literacy in predicting EFL proficiency highlights the importance of technological competence in modern language learning contexts. Students with strong digital literacy skills are better equipped to access, evaluate, and utilize online learning resources, enabling them to engage more effectively with digital learning platforms and language-learning applications. These technological skills allow learners to independently explore digital learning opportunities and participate in interactive language learning environments. Previous studies have demonstrated that digital literacy significantly enhances language learning outcomes because it supports learners' engagement, autonomy, and access to authentic language resources (Wang et al., 2023; Yuan et al., 2025).

Communication confidence also emerged as a significant predictor of EFL proficiency in the present study. Students who possess higher confidence in using English tend to participate more actively in communicative activities, which increases opportunities for language practice and interaction. Confidence reduces communication anxiety and encourages learners to express ideas more freely in both academic and informal communication contexts. Research in EFL contexts consistently shows that learners with higher levels of communication confidence or willingness to communicate are more likely to engage in meaningful language interaction, which ultimately contributes to improved language proficiency (Amira et al., 2021; Lee & Chiu, 2023).

Structural Interactions among Digital Literacy, Exposure, Confidence, and Motivation

The findings of this study demonstrate that digital literacy, communication confidence, and English exposure interact structurally through students' learning motivation in explaining EFL proficiency. Rather than functioning as isolated predictors, these variables form an interconnected system in which technological competence, experiential engagement with English, and affective readiness collectively contribute to language learning outcomes. This result supports contemporary perspectives in digital language learning which emphasize that

successful EFL development emerges from the interaction of technological skills, learning experiences, and psychological factors within technology-mediated environments.

The structural relationship between digital literacy and motivation suggests that students who possess higher levels of digital competence are more capable of using technology strategically for learning purposes. Digital literacy enables learners to access authentic learning materials, participate in online learning communities, and engage in self-directed learning practices. As a result, students become more motivated to explore English learning resources independently and sustain their engagement beyond classroom instruction. Recent studies have indicated that digital literacy significantly enhances learners' motivation and engagement by expanding access to interactive learning platforms and supporting autonomous learning behavior (Sari & Ningsih, 2025; Firmansyah, 2025).

English exposure also plays a significant structural role in shaping learners' motivation. Frequent interaction with English-language content through digital platforms such as streaming media, social networking sites, and online learning applications provides learners with authentic linguistic input and meaningful contexts for language use. Such exposure increases learners' familiarity with the language and stimulates their curiosity and interest in further language exploration. Empirical studies have shown that continuous exposure to English through digital media contributes to increased motivation and engagement in foreign language learning, particularly among university students who frequently interact with online content (Derakhshan & Fathi, 2023); Dewaele & Li, 2020). In digitally connected environments, exposure to authentic language input outside the classroom serves as an important complementary learning source that supports formal language instruction.

Communication confidence also contributes to motivation by reducing communication anxiety and encouraging students to participate actively in English-learning activities. Students who perceive themselves as capable English users are more willing to communicate, take linguistic risks, and sustain their learning efforts (Porto et al., 2022; Peng, 2024). Overall, the findings indicate that digital competence, English exposure, and communication confidence complement one another through motivation, creating a supportive pathway toward improved EFL proficiency.

The Mediating Role of Motivation in Digital-Based EFL Learning

The findings of this study indicate that motivation plays a significant mediating role in the relationship between digital learning factors and EFL proficiency. Specifically, digital literacy, communication confidence, and exposure to English contribute to improved language proficiency not only through direct pathways but also indirectly through their influence on students' motivation to engage in English learning activities. This result suggests that technological competence and learning opportunities become more effective when they stimulate learners' intrinsic and instrumental motivation. In digitally mediated learning environments, students who perceive technology as accessible and useful tend to develop stronger motivation to participate in language learning tasks, which subsequently enhances their language performance.

Studies on computer-assisted and mobile-assisted language learning demonstrate that digital tools can significantly increase learners' motivation, reduce anxiety, and strengthen self-efficacy, which ultimately supports language acquisition outcomes (Dong et al., 2022). In such environments, motivation functions as an important psychological mechanism that translates technological affordances into meaningful learning engagement and language development. Furthermore, recent studies have shown that motivation can function as a mediating variable linking digital competencies and learning outcomes. For example, research on digital learning environments found that learners' digital literacy indirectly influences academic success through motivational pathways, indicating that students with higher

technological competence are more likely to develop positive learning motivation and engagement (Bülbül & Özelçi, 2024).

In addition, emerging research on AI-mediated and informal digital English learning highlights that motivational factors play a crucial role in sustaining learners' participation in digital language learning activities. Motivation and positive learning emotions can partially mediate the relationship between digital learning environments and students' engagement in English learning practices (Zhang, 2025).

Comparison with Previous Studies

The findings are consistent with previous research showing that digital literacy, communication confidence, English exposure, and motivation are interconnected in EFL learning. Digital literacy positively predicted EFL proficiency ($\beta = 0.32$, $p < 0.001$), supporting Zhang, (2025) and Nasywa and Ningsih, (2025), who found that strategic use of digital resources improves English learning outcomes. Communication confidence was also positively related to EFL proficiency ($\beta = 0.41$, $p < 0.001$), consistent with Amira et al., (2021) and Han et al., (2024), who emphasized communication and digital interaction in promoting English use and engagement. It was the strongest direct predictor among the three exogenous variables, indicating that digital resources and English exposure may be more effective when learners are confident in using English.

English exposure positively predicted EFL proficiency ($\beta = 0.27$, $p < 0.001$), supporting Matondang et al., (2025) and Rusmiati et al., (2025). However, its smaller coefficient suggests that exposure alone may be insufficient without active language engagement. Digital literacy, communication confidence, and English exposure also significantly predicted motivation, with coefficients of $\beta = 0.34$, $\beta = 0.39$, and $\beta = 0.28$, respectively. These findings support Kim and Kim, (2024), Narendran et al., (2025), Han et al., (2024), and Lee & Chiu, (2023), who emphasized motivation, digital learning, communication, and interaction as important for learner engagement.

Motivation showed the strongest relationship with EFL proficiency ($\beta = 0.45$, $p < 0.001$), consistent with Zhang, (2025). Extending this previous evidence, the present study integrates digital literacy, communication confidence, and English exposure within one structural model, positioning motivation as an intervening mechanism. Motivation significantly mediated the relationships between digital literacy and EFL proficiency ($\beta = 0.153$, $p = 0.002$), communication confidence and EFL proficiency ($\beta = 0.176$, $p = 0.001$), and English exposure and EFL proficiency ($\beta = 0.126$, $p = 0.004$). Because the direct effects remained significant, all three relationships showed partial mediation. While supporting Zhang (2025), these findings extend previous research by demonstrating that motivation also mediates the effects of communication confidence and English exposure.

Overall, the findings confirm and extend previous studies (Amira et al., 2021; Han et al., 2024; Kim & Kim, 2024; Matondang et al., 2025; Rusmiati et al., 2025; Zhang, 2025). The main contribution is the integration of technological, communicative, exposure, and motivational factors into a single model in an Islamic higher education context, with communication confidence as the strongest direct predictor and motivation as a significant partial mediator across all three relationships.

Implications for EFL Learning in Islamic Higher Education Contexts

The findings suggest that EFL learning in Islamic higher education should move toward technology-supported and learner-centered approaches. Digital literacy, communication confidence, and English exposure can be strengthened through authentic digital resources, interactive communication, and autonomous learning activities (Wang et al., 2023; Zhang, 2025). Supportive learning environments are also important for reducing communication anxiety and encouraging active English use (Derakhshan & Fathi, 2023; Dewaele & Li, 2020).

Expanding exposure through online lectures, educational videos, and language-learning applications can provide authentic input for language development (Golonka et al., 2014; Lee & Chiu, 2023). Finally, motivational strategies should be integrated into technology-enhanced learning to sustain students' engagement and participation (Listyani, 2026).

Limitations of the Study

This study has several limitations that should be considered when interpreting the findings. First, the sample size was relatively small and limited to students from a single institution, STIT Palapa Nusantara Lombok, which may restrict the generalizability of the results to other higher education contexts. Second, the data were collected using self-reported questionnaires, which may be subject to response bias and may not fully capture students' actual language proficiency or behavioral practices. Third, the cross-sectional design of the study limits the ability to examine causal relationships or changes over time. Future research is therefore recommended to involve larger and more diverse samples, incorporate objective measures of language proficiency, and employ longitudinal designs to better understand the dynamic relationships among digital literacy, communication confidence, English exposure, motivation, and EFL proficiency.

CONCLUSION

This study examined the structural relationships among digital literacy, communication confidence, English exposure, motivation, and EFL proficiency among students at STIT Palapa Nusantara Lombok using a structural equation modeling approach. The findings reveal that digital literacy, communication confidence, and English exposure significantly contribute to students' EFL proficiency. Among these factors, English exposure shows a particularly strong influence, indicating that frequent interaction with English through digital media, learning applications, and online communication platforms plays an important role in improving language competence. The analysis also indicates that motivation functions as an important internal factor that supports students' engagement in English learning activities. In addition, communication confidence emerges as a meaningful predictor of EFL proficiency, as students who feel more confident in expressing ideas in English tend to demonstrate higher language proficiency.

The study integrates technological, communicative, experiential, and affective factors through motivation using SEM, highlighting the importance of digital learning, authentic English exposure, active communication, and motivational support for lecturers, students, and institutions. Limitations include the small single-institution sample, self-reported data, and cross-sectional design; future research should use larger, diverse samples, longitudinal and qualitative approaches, and objective EFL proficiency measures.

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INFORMED CONSENT STATEMENT

Participation in this study was entirely voluntary. Prior to data collection, all participants were informed about the objectives, procedures, and academic purpose of the research. They were also assured that their responses would remain confidential and used solely for research purposes. Participants had the right to decline participation or withdraw from the study at any stage without any negative consequences. By completing the questionnaire, participants provided their informed consent to take part in the study under the stated conditions.

DATA AVAILABILITY STATEMENT

The dataset used and analyzed during the current study is not publicly available due to ethical considerations related to participant confidentiality and institutional data protection policies. However, the data may be made available from the corresponding authors upon reasonable request for academic or research purposes, subject to approval from the relevant institutional authority and compliance with ethical research standards.

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