From Cliks to Competence: Digital Literacy and User Experience Evaluation of A Google Sites-Based Module in A Tell Context

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Abstract. This study examined students' digital literacy, user experience, and the relationship between these two constructs when using a Google Sites–based learning module in a World Englishes Pronunciation course. Employing a quantitative descriptive-correlational design, data were collected from 61 first-semester students in the English Education Study Program at UIN Antasari Banjarmasin using a four-point Likert-scale questionnaire. The data were analyzed using descriptive statistics and Pearson correlation analysis. The findings indicate that students demonstrated high to very high levels of digital literacy (M = 2.81–3.34), with digital safety and privacy receiving the highest mean score and communication and collaboration the lowest. Students also reported positive user experiences across all evaluated dimensions (M = 2.86–3.10), with information structure rated highest and accessibility rated lowest. Furthermore, a strong positive correlation was found between digital literacy and user experience ($r = 0.714$, $p < .001$), suggesting that students with higher digital literacy tended to report more positive experiences when using the web-based learning module. These findings highlight the importance of aligning students' digital competencies with well-designed digital learning environments to support effective TELL implementation. The study contributes to the growing body of TELL research by providing empirical evidence on students' digital literacy, user experience, and the association between these two constructs in a Google Sites–based learning environment.

Keywords: TELL; Digital Literacy; User Experience Evaluation; Google Site Module; ELT

1 Introduction

English Language Teaching (ELT) is one of the many academic disciplines whose practices have been profoundly influenced by the rapid development of digital technology. Over the past few decades, these advancements have transformed how students engage, communicate, and access information in classroom environments. This transformation has led to the

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emergence of Technology Enhanced Language Learning (TELL), a concept that emphasizes the use of digital tools and resources to support and enrich language learning processes. Through web-based platforms, multimedia materials, and artificial-intelligence-supported tools, TELL enables more flexible and learner-centered instructional approaches that extend learning beyond traditional classroom settings.

One of the fundamental requirements for implementing TELL in the classroom is students' digital literacy. As language learning increasingly relies on digital platforms, learners must possess the necessary skills to interact effectively with technological tools and online resources. In recent years, particularly after pandemic, digital literacy has emerged as a crucial competence for students, particularly in educational contexts where learning activities are mediated through digital technologies.

Ng (2012) conceptualizes digital literacy as a set of competencies that enable individuals to function effectively in digital environments. She explains that digital literacy involves "a multiplicity of literacy associated with the use of digital technologies" and includes technical, cognitive, and social-emotional dimensions. These dimensions suggest that digital literacy not only requires operational skills in using technology but also the ability to critically analyze digital information and interact responsibly in online environments.

Expanding this perspective, Dudeney et al. (2013) describe digital literacy as a combination of individual and social skills that allow people to interpret, manage, share, and construct meaning through various digital communication channels. This view highlights the communicative and collaborative aspects of digital literacy in contemporary digital spaces. In a similar vein, Jisc (2014) emphasizes that digital literacy encompasses a range of capabilities that enable individuals to participate effectively in a digital society, supporting their engagement in everyday life, learning, and professional activities. Together, these perspectives indicate that digital literacy is a multidimensional competence that integrates technological skills, critical thinking, communication abilities, and responsible digital participation.

While digital literacy equips students with the competencies needed to navigate digital environments, the effectiveness of TELL is also influenced by how digital platforms are designed and experienced by users. In other words, even when students possess adequate digital skills, their learning experiences may still be affected by the quality of interaction between users and the digital system. Therefore, another important factor in determining the success of digital learning environments is user experience (UX).

User experience (UX) refers to users' perceptions and responses that emerge when interacting with a system or digital platform. According to the international standard ISO 9241-210, user experience is defined as "a user's perceptions and responses that result from the use and/or anticipated use of a system, product, or service." This definition highlights that UX encompasses not only usability but also users' emotions, beliefs, preferences, and behaviors that occur before, during, and after interaction with a digital system (International Organization for Standardization, 2019).

In language learning environments, the quality of user experience can significantly influence students' engagement with digital learning platforms. Previous research also highlights the importance of well-designed digital learning environments in supporting effective interaction and learning outcomes. For instance, a study conducted by Orozco & Crosetti (2025) found that gamification elements such as challenges, points, and rewards, particularly when combined with adaptive feedback, can significantly enhance learners' motivation and engagement in ELT virtual learning environments. However, the study also emphasizes that positive user experience depends on intuitive interface design, timely feedback, and consideration of learners' digital readiness and technological constraints.

Similarly, a study by Asi et al. (2024), which explored learners' experiences with web-based English learning platforms, found that positive user experience contributes to more

efficient interaction with learning materials and fosters a more engaging learning environment. Taken together, these findings highlight the importance of evaluating learners' experiences when interacting with digital learning platforms, particularly tools that allow educators to design interactive and accessible learning environments.

Digital literacy and user experience can be understood as two complementary dimensions that collectively shape students' engagement in TELL environments. While digital literacy operates on the learner side, particularly equipping students with the competencies to access, evaluate, and use digital tools responsibly, UX operates on the platform side, determining how intuitively and effectively those tools support learning interactions. This relationship can be understood through the lens of the Technology Acceptance Model (TAM) (Davis, 1989), which posits that users' perceived ease of use and perceived usefulness of a technology jointly influence their willingness to engage with it. In a TELL context, digital literacy shapes learners' capacity to perceive and utilize these affordances, while a well-designed UX lowers the cognitive and technical barriers to engagement. Consequently, evaluating both dimensions together provides a more complete picture of how students interact with digital learning environments than examining either construct in isolation (Chapelle, 2016; Hassenzahl & Tractinsky, 2006). This conceptual interdependence motivates the present study's focus on Google Sites as a representative web-based learning platform in the TELL context.

One platform that has gained growing attention for developing web-based learning environments is Google Sites. As a web-authoring tool provided by Google, it enables educators to create structured and easily accessible websites without requiring advanced programming skills. The platform allows instructors to integrate various types of learning materials, including text, images, videos, hyperlinks, and embedded resources, making it suitable for developing interactive digital learning modules.

Research on the integration of Google Sites in educational settings has demonstrated its potential as an effective digital learning platform. By providing interactive and multimedia-based learning resources, Google Sites–based materials can support higher levels of student engagement, motivation, and learning achievement. For instance, Ratnawati et al. (2024) reported that modules developed using Google Sites were able to enhance students' critical thinking skills and engagement in EFL learning environments, highlighting the value of incorporating this platform into the language learning process.

Similarly, Yani et al. (2026) found that interactive teaching materials developed using Google Sites and integrated with a Problem-Based Learning (PBL) model demonstrated strong educational value. Their study reported a high validity coefficient (0.905), very high practicality based on teacher and student responses (99.58% and 94.16%), and high effectiveness with an N-Gain score of 0.80. These findings indicate that Google Sites- based learning materials can serve as valid, practical, and effective tools for enhancing student engagement and learning outcomes in classroom settings.

Despite the growing adoption of Google Sites in educational settings, existing studies have primarily evaluated its impact on learning outcomes and student engagement (Ratnawati et al., 2024; Yani et al., 2026), without examining the learner-side competencies that mediate interaction with the platform. Similarly, research on digital literacy in ELT contexts (Shopova, 2014; Tang & Chaw, 2016) has largely been conducted in general blended learning environments rather than in the context of specific web-based authoring platforms such as Google Sites. Furthermore, while recent UX studies in ELT virtual environments (Asi et al., 2024; Orozco & Crosetti, 2025) have highlighted the role of interface design and usability in shaping learner engagement, they have not integrated digital literacy as a concurrent variable. This gap is significant because digital literacy and UX are conceptually interdependent in TELL environments: learners' ability to navigate and evaluate digital content (digital literacy) directly shapes how they perceive and interact with the platform (UX), yet these two

dimensions have rarely been examined simultaneously in the context of web-based language learning modules. To address this gap, the present study aims to provide a descriptive account of both dimensions in a single TELL context. Specifically, this study addresses the following research questions: (1) What is the level of students' digital literacy when interacting with a Google Sites–based learning module in a Technology-Enhanced Language Learning (TELL) context? (2) How do students evaluate their user experience when using the Google Sites–based learning module in a World Englishes Pronunciation course? (3) What is the relationship between students' digital literacy and their user experience when interacting with the Google Sites–based learning module? The study contributes to the growing body of TELL research by providing empirical evidence on students' digital literacy, user experience, and the association between these two constructs within a Google Sites–based learning environment.

2 Method

2.1 Design

This study employed a quantitative descriptive-correlational research design to examine students' digital literacy, their user experience, and the relationship between these two constructs when interacting with a Google Sites–based learning module. The descriptive component was used to provide a systematic description of students' digital literacy and their evaluations of the learning module, while the correlational component examined the association between digital literacy and user experience using Pearson correlation analysis. This design was considered appropriate because it enabled the study not only to describe students' perceptions of the web-based learning environment but also to explore the extent to which the two variables were related without inferring causal relationships.

2.2 Participant

Table 1. Demographic Profile of Respondents

Characteristic	Category	Frequency (n)	Percentage (%)
Age	18 years	61	100.0
Gender	Male	23	37.7
	Female	38	62.3
Primary device used to access the Google Sites module	Smartphone	35	57.4
	Laptop	24	39.3
	Tablet	2	3.3
Frequency of using the Google Sites module	Once	4	6.6
	Twice	36	59.0
	Three times	16	26.2
	Four times	5	8.2

The participants of this study were first-semester students (aged 18 years) enrolled in the *World Englishes Pronunciation* course in the English Language Education study program at UIN Antasari Banjarmasin. A total of 61 students participated in the study. These students were selected because they were actively using Google Sites–based digital learning module as part of their learning activities in that course. Participants were selected using total

population sampling, as all students enrolled in the course met the inclusion criteria and voluntarily participated in the study. The inclusion criteria were: (1) being enrolled in the English Language Education Study Program at UIN Antasari Banjarmasin; (2) having completed the World Englishes Pronunciation course activities using the Google Sites–based learning module; and (3) being willing to participate in the study by completing the online questionnaire.

Table 1 presents the demographic profile of the respondents. Of the 61 participants, 38 (62.3%) were female, and 23 (37.7%) were male. Most respondents accessed the Google Sites–based learning module using smartphones (57.4%), followed by laptops (39.3%), while only 3.3% used tablets. Regarding usage frequency, the majority of students reported accessing the module twice (59.0%), followed by three times (26.2%), four times (8.2%), and once (6.6%). These characteristics indicate that all participants had sufficient exposure to the digital learning module before evaluating their digital literacy and user experience.

2.3 Instrument/ Data collection

Data were collected using an online questionnaire administered through Google Forms. The questionnaire consisted of two sections measuring students' digital literacy and their user experience when interacting with the Google Sites–based learning module. It was administered at the end of the semester, after students had completed the World Englishes Pronunciation course using the Google Sites–based module, allowing them to evaluate their digital competencies and overall learning experiences based on sustained use of the platform.

Before data collection, the questionnaire underwent a validation and reliability process to ensure the quality of the instrument. The items were developed based on established frameworks: digital literacy indicators were adapted from Hague & Payton (2010) digital literacy framework and the DigComp 2.1 framework Carretero et al. (2017), while UX indicators were developed in alignment with the multidimensional UX constructs proposed by Ghani & Wan Shamsuddin (2020). Content validity was established through expert judgment, in which one lecturer with expertise in educational technology and language teaching reviewed the items for relevance, clarity, and alignment with the construct definitions. Revisions were made based on their feedback before the instrument was administered. Reliability was assessed using Cronbach's alpha coefficient.

Table 2. Indicators of Digital Literacy

Variable	Indicators
Digital Literacy	Digital platform operation
	Searching and understanding digital information
	Evaluating digital information
	Digital safety and privacy
	Communication and collaboration
	Digital ethics

As shown in Table 2, digital literacy in this study is examined through several indicators, including digital platform operation, searching and understanding digital information, evaluating digital information, digital safety and privacy, communication and collaboration, and digital ethics. The selected indicators are also aligned with the framework proposed by Hague & Payton (2010), which emphasizes components such as functional digital skills, information retrieval, critical evaluation, communication, collaboration, and e-safety.

Therefore, the indicators used in this study represent key aspects of digital literacy that are relevant to students' interaction with web-based learning platforms.

Table 3 presents the user experience (UX) indicators used in this study, including usability, navigation, visual design, accessibility, information structure, engagement and satisfaction. The UX indicators in this study are consistent with prior literature that conceptualizes UX as a multidimensional construct consisting of usability, accessibility, value, hedonic quality, and visual aesthetics Ghani & Wan Shamsuddin (2020). Specifically, navigation and information structure relate to ease of use and value, while engagement and satisfaction represent the experiential dimensions of user interaction.

Table 3. Indicators of User Experience Evaluation

Variable	Indicators
User Experience Evaluation	Usability
	Navigation
	Visual Design
	Accessibility
	Information Structure
	Engagement and Satisfaction

To measure digital literacy and UX dimension, the questionnaire included two items for each indicator, resulting in a total of twelve digital literacy and twelve UX items. Using more than one item for each indicator is aimed to helps capture different aspects of the same construct and improves the reliability of the measurement. Multiple items also allow researchers to reduce measurement error and obtain more stable mean scores representing each dimension of user experience.

Prior to the main data analysis, the questionnaire was subjected to validity and reliability testing to ensure the quality of the measurement instrument. Item validity was examined using Pearson's product–moment correlation by comparing the correlation coefficient of each questionnaire item with the critical value of the correlation coefficient (r-table). With a sample size of 61 respondents, the critical r-value was 0.248 at the 0.05 significance level. The results showed that all questionnaire items for both the Digital Literacy and User Experience constructs produced correlation coefficients greater than the critical value ($r > 0.248$), indicating that all items were valid and suitable for subsequent analysis.

Instrument reliability was then assessed using Cronbach's Alpha coefficient. The Digital Literacy scale obtained a Cronbach's Alpha value of 0.833, while the User Experience scale achieved a Cronbach's Alpha value of 0.904. These values exceeded the recommended threshold of 0.70 for acceptable internal consistency (Hair et al., 2010), indicating good reliability for the Digital Literacy instrument and excellent reliability for the User Experience instrument. Therefore, both instruments were considered sufficiently reliable for measuring the constructs investigated in this study.

To ensure that the participants clearly understood each statement, the questionnaire was written in Indonesian, which is the students' native language. Each item was measured using a four-point Likert scale, ranging from 1 (strongly disagree), 2 (disagree), 3 (agree), to 4 (strongly agree). The neutral option was intentionally excluded to encourage respondents to provide a clear level of agreement or disagreement. Students were asked to indicate their responses based on their experiences when interacting with the digital learning module.

2.4 Data Analysis

The collected data were analyzed using descriptive statistics. First, the questionnaire responses were coded using a four-point Likert scale, where 1 represented strongly disagree, 2 disagree, 3 agree, and 4 strongly agree. The coded data were tabulated and analyzed using IBM SPSS Statistics to obtain mean scores (M) and standard deviations (SD) for each indicator. The mean scores were used to determine the overall level of each digital literacy and UX dimension based on the four-point Likert scale interpretation table (Table 4), while the standard deviation values were used to assess the degree of response variation among participants, providing additional context for interpreting the consistency of students' perceptions across indicators. This descriptive approach is appropriate for the study's purpose of providing a systematic profile of students' digital literacy and UX perceptions, in alignment with the quantitative descriptive design (Creswell, 2012). The results were then interpreted to identify general patterns in students' digital literacy and user experience when interacting with the Google Sites–based learning module.

Table 4. Likert Scale Interpretation

Mean Score	Interpretation
3.25 – 4.00	Very High
2.50 – 3.24	High
1.75 – 2.49	Low
1.00 – 1.74	Very Low

The results were then interpreted to identify general patterns in students' digital literacy and experiences when using the digital learning platform.

3 Results and Discussion

3.1 Results

3.1.1 Students' Digital Literacy

Table 5. Students' Digital Literacy in Using the Google Sites–Based Learning Module

Indicators	Mean Score	Interpretation	Standard Deviation
Digital platform operation	3.0246	High	0.51175
Searching and understanding digital information	3.1475	High	0.46855
Evaluating digital information	3.0082	High	0.38179
Digital safety and privacy	3.3361	Very High	0.42545
Communication and collaboration	2.8115	High	0.48446
Digital ethics	3.2623	Very High	0.37201

The first section of the questionnaire examined students' digital literacy when interacting with the Google Sites–based learning module. The analysis was conducted by calculating the mean scores of each item using descriptive statistics.

Table 5 summarizes the mean scores and standard deviations of students' digital literacy across six indicators. Overall, the findings indicate that students demonstrated generally high levels of digital literacy when interacting with the Google Sites–based learning module. The relatively low standard deviation values across all indicators (SD = 0.37–0.51) suggest that students' responses were fairly consistent, indicating a relatively homogeneous perception of their digital literacy competencies.

Among the indicators, digital safety and privacy recorded the highest mean score (M = 3.34, SD = 0.43), followed by digital ethics (M = 3.26, SD = 0.37), both categorized as very high. These findings indicate that students possess strong awareness of responsible, ethical, and secure behavior when interacting in digital environments. The relatively low standard deviation values further suggest a high level of agreement among respondents regarding these competencies.

Meanwhile, searching and understanding digital information (M = 3.15, SD = 0.47), digital platform operation (M = 3.02, SD = 0.51), and evaluating digital information (M = 3.01, SD = 0.38) were all categorized as high. These results indicate that students generally possess adequate competencies to access, understand, and critically evaluate digital information within the Google Sites–based learning environment. The moderate to low standard deviations indicate that these perceptions were relatively consistent across participants.

In comparison, communication and collaboration obtained the lowest mean score (M = 2.81, SD = 0.48), although it remained within the high category. This finding suggests that while students are generally capable of interacting and collaborating in digital environments, this dimension represents the area with the greatest potential for improvement. Nevertheless, the relatively low standard deviation indicates that this perception was shared by most respondents rather than being influenced by a small number of participants.

Overall, these findings suggest that students in the English Language Education Study Program at UIN Antasari Banjarmasin possess sufficient digital competencies to engage effectively in TELL environments. The consistently low standard deviation values across all indicators further indicate that students demonstrated relatively homogeneous perceptions of their digital literacy, providing a strong foundation for their interaction with the Google Sites–based digital module used in the World Englishes Pronunciation course.

3.1.2 Students' User Experience Evaluation

The second section of the questionnaire examined students' user experience when using the Google Sites–based learning module. The analysis focused on students' perceptions of usability, navigation, visual design, accessibility, information structure, and also engagement and satisfaction with the platform.

Table 6 presents the mean scores and standard deviations of students' user experience when interacting with the Google Sites–based learning module across six dimensions: usability, navigation, visual design, accessibility, information structure, and engagement and satisfaction. Overall, the findings indicate that students reported a high level of user experience across all evaluated dimensions. The relatively low standard deviation values (SD = 0.34–0.60) indicate that students' perceptions were generally consistent, suggesting a relatively homogeneous evaluation of the learning module.

Among the evaluated dimensions, information structure recorded the highest mean score (M = 3.10, SD = 0.34), indicating that students found it relatively easy to locate learning

materials within the module. This finding suggests that the organization of content in the Google Sites–based platform was clear and effectively supported students' access to learning resources. Similarly, visual design (M = 3.08, SD = 0.34) and navigation (M = 3.04, SD = 0.37) also achieved high mean scores, indicating that the platform's interface was perceived as visually appealing and easy to navigate. The relatively low standard deviations for these dimensions further demonstrate a high level of agreement among respondents regarding the usability of the platform's interface.

Table 6. Students' User Experience Evaluation of the Google Sites–Based Learning Module

Indicators	Mean Score	Interpretation	Standard Deviation
Usability	2.9918	High	0.45177
Navigation	3.0410	High	0.36850
Visual Design	3.0820	High	0.34376
Accessibility	2.8607	High	0.59952
Information Structure	3.0984	High	0.33936
Engagement and Satisfaction	3.0082	High	0.35930

Meanwhile, engagement and satisfaction (M = 3.01, SD = 0.36) and usability (M = 2.99, SD = 0.45) were also categorized as high, suggesting that students generally felt comfortable using the module and expressed positive overall satisfaction with their learning experience. The standard deviation values indicate that these positive perceptions were relatively consistent across participants.

In contrast, accessibility recorded the lowest mean score (M = 2.86, SD = 0.60), although it remained within the high category. Compared with the other dimensions, accessibility exhibited the largest standard deviation, indicating greater variation in students' responses. This finding suggests that although the module was generally accessible, students experienced different levels of convenience when accessing the platform across various devices or internet conditions.

Overall, these findings indicate that the Google Sites–based learning module provided a positive user experience by offering a well-organized, visually appealing, and user-friendly learning environment. The relatively low standard deviation values across most dimensions further indicate that students shared similar perceptions regarding the quality of the platform, reinforcing its suitability as a web-based learning medium within the TELL context.

Taken together, the findings on students' digital literacy and user experience suggest that participants were generally well prepared to engage with the Google Sites–based learning module. The relatively high levels of digital literacy indicate that students possessed the necessary competencies to operate digital platforms, access and evaluate information, and interact effectively within online learning environments. At the same time, the consistently high user experience scores demonstrate that the module was perceived as clear, accessible, and supportive of learning activities. Collectively, these findings indicate that the combination of adequate digital competencies and a well-designed digital learning platform can facilitate meaningful student engagement within a Technology-Enhanced Language Learning (TELL) environment.

3.1.3 Correlation Analysis between Digital Literacy and User Experience Evaluation

To complement the descriptive findings, a Pearson correlation analysis was conducted to examine the relationship between students' digital literacy and their user experience when using the Google Sites–based learning module. The analysis revealed a strong positive correlation between the two variables ($r = 0.714$, $p < 0.001$), indicating that higher levels of digital literacy were associated with more positive user experiences.

The correlation coefficient ($r = 0.714$) suggests a substantial positive relationship, implying that students who demonstrated stronger digital literacy skills tended to report higher levels of usability, navigation, visual design, accessibility, information structure, and overall satisfaction with the Google Sites–based learning module. Furthermore, the significance value ($p < 0.001$) indicates that the observed relationship was statistically significant and unlikely to have occurred by chance.

These findings complement the descriptive results presented in Tables 4 and 5 by suggesting that students' digital competencies are closely associated with their perceptions of the digital learning environment. Although the primary purpose of this study was descriptive, the additional correlation analysis provides further evidence that students with stronger digital literacy tend to experience more effective and satisfying interactions with the web-based learning platform.

3.2 Discussion

The findings of this study indicate that students generally possessed high levels of digital literacy and reported positive user experiences when interacting with the Google Sites–based learning module. Taken together, these findings suggest that students were sufficiently prepared to engage with the web-based learning environment provided in the World Englishes Pronunciation course. Rather than viewing digital literacy and user experience as separate constructs, the results imply that both play complementary roles in supporting students' participation in Technology-Enhanced Language Learning (TELL).

The high level of digital literacy observed in this study suggests that students possessed the basic competencies required to participate in web-based learning activities. Students reported high levels of competence in operating digital platforms, searching for and understanding digital information, evaluating digital information, and demonstrating responsible digital behaviour. These findings are consistent with previous studies suggesting that digital literacy enables learners to access, evaluate, and utilize digital resources more effectively in educational settings (Ng, 2012; Tang & Chaw, 2016). Within the context of TELL, these competencies may help learners interact more confidently with digital learning materials and minimize potential technological barriers during the learning process.

Among the digital literacy dimensions, digital safety and privacy as well as digital ethics received the highest mean scores. Although this study did not investigate the reasons underlying these results, the findings may indicate that students were generally aware of responsible and ethical practices when using digital technologies. Such competencies are increasingly recognized as important components of digital literacy because students are expected not only to access digital information but also to use digital resources responsibly and protect their personal data (Carretero et al., 2017). In language learning environments, these competencies may also contribute to more responsible participation in online learning activities and appropriate use of digital learning resources (Chapelle, 2016).

In contrast, communication and collaboration received the lowest mean score, although it remained within the high category. This finding suggests that students perceived themselves as slightly less confident in collaborative aspects of digital learning than in other

dimensions of digital literacy. One possible explanation is related to the instructional use of the Google Sites module in this study, which primarily functioned as a platform for accessing learning materials rather than facilitating extensive collaborative interaction. Consequently, students may have had fewer opportunities to practice digital communication through the learning activities provided.

The findings also demonstrate that students generally reported positive user experiences across all evaluated dimensions. Information structure received the highest evaluation, followed by visual design and navigation. These findings suggest that students perceived the organization of learning materials and the interface design as supporting their interaction with the learning module. Previous studies have highlighted that clear information organization and intuitive navigation contribute to learners' perceptions of usability in digital learning environments (Hassenzahl & Tractinsky, 2006). Likewise, multimedia learning theory proposes that well-organized presentation of information can facilitate cognitive processing by enabling learners to focus on learning content rather than searching for information (Mayer, 2009). Although this study did not directly measure learning performance, the positive evaluation of these aspects suggests that the module provided a learning environment that students perceived as accessible and easy to use.

Accessibility obtained the lowest mean score among the user experience dimensions, despite remaining within the high category. Compared with the other dimensions, accessibility also showed the greatest variation in students' responses. This result may indicate that students experienced different levels of convenience when accessing the learning module. Since the present study did not investigate contextual factors such as internet connectivity, device availability, or technical limitations, it is not possible to determine the specific reasons for this variation.

One of the most important findings of this study is the strong positive correlation between digital literacy and user experience ($r = 0.714$, $p < .001$). This result suggests that students with higher levels of digital literacy tended to report more positive experiences when using the Google Sites–based learning module. Although the correlational design does not permit causal conclusions, the finding indicates that these two variables are closely associated. A possible interpretation is that students who possess stronger digital competencies may find it easier to navigate digital learning environments, interpret online information, and utilize platform features effectively, leading to more favourable perceptions of the learning experience. This interpretation is consistent with previous studies suggesting that digital literacy is associated with learners' confidence and adaptability in technology-supported learning environments (Shopova, 2014; Tang & Chaw, 2016).

Taken together, these findings highlight the importance of considering both learner-related and platform-related factors when implementing Technology-Enhanced Language Learning (TELL). While a well-designed digital learning platform may facilitate students' engagement with learning materials, learners also require sufficient digital competencies to interact effectively with digital resources. The strong positive association identified between digital literacy and user experience further suggests that these two aspects are closely related in shaping students' experiences with web-based learning environments. Therefore, the successful integration of digital learning platforms should not only emphasize instructional design but also support the continuous development of students' digital literacy, particularly in aspects related to communication and collaboration. From a pedagogical perspective, language instructors may consider incorporating more collaborative learning activities, such as online discussions, peer feedback, and group-based digital projects, to provide students with greater opportunities to develop these competencies. At the same time, designers of web-based learning modules should continue to prioritize clear information organization, intuitive navigation, and accessible interface design, as these features were consistently

perceived positively by students and may contribute to more meaningful learning experiences.

Despite these contributions, several limitations should be acknowledged when interpreting the findings. First, the study was conducted within a single study program at one university. As a result, the findings may not fully represent students from other institutions or educational contexts. Second, the study relied on self-reported questionnaire data, which captured students' perceptions rather than their actual digital literacy performance or observable interactions with the Google Sites–based learning module. Third, although a significant positive correlation was identified between digital literacy and user experience, the correlational design does not permit causal conclusions regarding the relationship between these variables.

These limitations also provide several directions for future research. Future studies could involve participants from multiple institutions and disciplinary backgrounds to examine whether similar patterns emerge across different educational settings. To complement self-reported data, researchers may also integrate qualitative methods, such as interviews, focus group discussions, or classroom observations, to gain deeper insights into how students experience digital learning environments and what factors influence their perceptions. In addition, longitudinal or experimental studies could investigate whether enhancing students' digital literacy contributes to improvements in user experience and, more importantly, in language learning outcomes, such as pronunciation development, learner engagement, or learning autonomy within TELL environments.

4 Conclusion

This study examined students' digital literacy and user experience when interacting with a Google Sites–based learning module in a World Englishes Pronunciation course. The findings indicate that students generally demonstrated high levels of digital literacy and reported positive user experiences across the evaluated dimensions. In addition, the strong positive correlation between digital literacy and user experience suggests that students with stronger digital competencies tended to perceive the web-based learning environment more positively. Although the correlational design does not permit causal conclusions, the findings highlight the close association between learner readiness and students' experiences with digital learning platforms.

These findings contribute to the growing body of research on TELL by demonstrating that the effective implementation of web-based learning environments involves not only thoughtful instructional design but also students' digital competencies. From a practical perspective, the study suggests that language educators should combine well-designed digital learning platforms with learning activities that foster students' digital literacy, particularly in communication and collaboration. Such an approach may help create more accessible, engaging, and learner-centred digital learning experiences in higher education.

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