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ITBISA: A Novel and Sustainable Approach for Supporting EFL Learners' English Proficiency and Digital Literacy

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Abstract IT-Based Integrated Skills Approach (ITBISA) represents a pedagogical approach that combines Oxford's (2001) Integrated Skills Approach (ISA) with digital literacy dimensions outlined by Son (2017), aiming to improve both English proficiency and digital literacy among EFL learners. Developed for TEFL (Teaching English as a Foreign Language) instruction, ITBISA integrates the four essential language skills through the purposeful use of digital tools and platforms. This study investigates the implementation of ITBISA in a university TEFL course by examining perspectives from students and the teacher. The current implementation builds upon previous applications of the approach by incorporating updates to the national curriculum and integrating AI-based technologies to address the evolving challenges of education in the AI era. Data collection involved classroom observations, teacher and student questionnaires, analyzed thematically to identify learning patterns, technological engagement, and pedagogical insights. The findings show that ITBISA creates a learning environment that promotes active participation, critical thinking, and increased digital awareness. Students reported better confidence in using English in academic and digital contexts, while the teacher noted enhanced classroom interaction and student autonomy. ITBISA is shown to be a sustainable and adaptable approach for EFL instruction, offering a forward-looking framework that addresses the dual demands of language mastery and digital competence in today's AI era.

Keywords*:* Digital literacy; English proficiency; IT-Based Integrated Skills Approach (ITBISA); Sustainability

INTRODUCTION

The integration of technology into English as a Foreign Language (EFL) instruction has become increasingly essential in the last decade, particularly in the era of Artificial Intelligence (AI) and digital transformation. Traditional English teaching methods that focused solely on discrete skills (listening, speaking, reading, and writing) are no longer sufficient to meet learners' academic and professional demands. Instead, there is a growing need for pedagogical models that simultaneously foster language proficiency and digital literacy, preparing learners for participation in digitally mediated communication and global academic discourse (Adnyani, 2022; Fitriati & Lisa, 2019; Gemiharto & CMS, 2024; Pangrazio et al., 2020). While these studies confirm the urgency of combining linguistic and technological competencies, they stop short of providing a practical framework that addresses both dimensions in a balanced and sustainable way.

Oxford's (2001) Integrated Skills Approach (ISA) provides a strong foundation for language teaching, emphasizing the importance of practicing the four language skills in combination through authentic tasks. Building upon this, Son's framework of digital literacy (2017) introduces technical, cognitive, and socio-emotional dimensions that are crucial for navigating digital environments. The combination of these two perspectives suggests the potential for more holistic pedagogy. However, existing scholarship has rarely attempted to operationalize ISA and digital literacy simultaneously in a concrete model, which makes IT-Based Integrated Skills Approach (ITBISA) a timely contribution that bridges theoretical ideals with practical application.

Recent studies also emphasize the necessity of equipping learners with digital competencies alongside language skills. For instance, Deschênes (2024) highlights how digital literacy contributes to collaboration and information management in hybrid learning environments, while Hutagalung (2024) demonstrates that digital tools enhance both motivation and effective language acquisition. Similarly, the integration of AI-based applications such as ChatGPT, Duolingo, and Canva has been shown to foster autonomy, creativity, and critical thinking (Alharbi, 2023; Hadi et al., 2021; Loewen et al., 2019; Melvina & Julia, 2021; Ray, 2023). While these findings are encouraging, they tend to emphasize tool-specific

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outcomes rather than providing a coherent model that unites digital literacy and integrated language skills instruction. Thus, more systematic research is needed to evaluate a model that intentionally combines both domains in higher education contexts.

Despite these developments, significant gaps remain in the literature. Much of the existing research examines either the role of technology in improving language proficiency or its contribution to developing digital literacy, but very few studies have systematically explored how these two goals can be achieved simultaneously within a coherent pedagogical framework. Moreover, while the rapid emergence of AI tools has sparked interest in their potential for language education, empirical studies on how AI can be responsibly integrated into integrated-skills instruction are still limited (Boncea, 2022; Gautam, 2019). These gaps underscore the need not only for empirical validation but also for pedagogical innovation that is both scalable and sustainable.

To address these gaps, the present study investigates the implementation of ITBISA in a university-level TEFL course. Specifically, it examines both student and teacher perspectives to understand how ITBISA facilitates English proficiency, promotes digital competence, and adapts to the evolving needs of EFL learners in the AI era. In this way, the study not only adds empirical evidence to the growing literature on technology-enhanced pedagogy but also advances critical discussions about how EFL classrooms can remain relevant in the context of accelerating digital transformation.

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METHODS

This study employed a mixed-method research design, combining quantitative and qualitative approaches (Mujiyanto & Fitriati, 2020) to gain a comprehensive understanding of the implementation of the IT-Based Integrated Skills Approach (ITBISA) in a university-level TEFL course. A mixed-method design was considered appropriate for two reasons. First, the quantitative strand, represented by a post-treatment questionnaire, allowed the researcher to systematically measure students' perceptions of ITBISA across various aspects such as motivation, engagement, and perceived improvement in English proficiency and digital literacy. Second, the qualitative strand, consisting of teacher reflective journals, classroom observations, and interviews, provided rich descriptions and deeper insights into how ITBISA was implemented in practice, how students responded to the activities, and how the teacher adjusted instructional strategies over time. By combining both strands, the study could capture not only measurable patterns but also the nuanced processes underlying the teaching and learning experience, thereby increasing the validity and depth of the findings (Creswell & Creswell, 2018).

The respondents were undergraduate students enrolled in an English education program at a state university in Central Java, Indonesia. Their identities and individual responses were kept confidential in line with ethical considerations.

The instruments for data collection included: (1) a structured questionnaire adapted from Cote and Milliner (2018), consisting of nineteen Likert-scale items that explored students' enjoyment, confidence, digital awareness, and perceptions of ITBISA; classroom observations that documented how ITBISA activities unfolded in real time and how students interacted with the digital tools; and (2) teacher reflective journals written at three points of the semester (beginning, middle, and end), complemented by short follow-up interviews, which provided insights into instructional planning, evolving classroom dynamics, and perceived student progress.

The implementation of ITBISA began at the start of the semester and continued throughout, with students engaging in tasks that integrated the four language skills using digital resources such as Padlet, Canva, Duolingo, Elsa Speak, ChatGPT, Google Forms, and Kahoot (Hadi et al., 2021; Jong & Kim Hua, 2021; Munday, 2016). The questionnaire was distributed at the end of the semester to capture students' cumulative perceptions. Reflective journals and interviews were collected periodically, while observational field notes were documented continuously during classroom sessions.

Data analysis combined descriptive calculations for the questionnaire responses with thematic analysis of qualitative data. The quantitative data highlighted general trends in students' attitudes and experiences, whereas the qualitative data revealed detailed patterns related to instructional practices, student engagement, and learning development. Integrating these two strands ensured a more holistic understanding of how ITBISA contributed to the improvement of English proficiency and digital literacy

FINDINGS AND DISCUSSIONS

The findings are presented in two strands: (1) students' perceptions of the IT-Based Integrated Skills Approach (ITBISA) as revealed in the questionnaire, and (2) the teacher's reflective insights documented across the semester. The triangulation of these two data sources provides a comprehensive picture of how ITBISA was perceived and implemented in practice.

Students' Perceptions

The questionnaire consisted of nineteen Likert-scale items focusing on aspects of enjoyment, engagement, digital literacy, authenticity, and English proficiency (Burić & Wang, 2024; Iskandar et al., 2022; Mötteli et al., 2023; Mujico & Lasagabaster, 2019; Nguyen et al., 2024). Table 1 summarizes the distribution of responses, while Figure 1 illustrates the overall proportions across all items.

Table 1. Distribution of Student Responses to ITBISA Questionnaire (N = 15)

Item	Statement (shortened)	SA (%)	A (%)	N (%)	D (%)	SD (%)
1	I enjoy using ITBISA	47	33	20	0	0
2	I like applying ITBISA via web learning	33	27	40	0	0
3	I enjoy learning and completing tasks via ITBISA	47	33	20	0	0
4	ITBISA helps me become more digitally literate	33	40	27	0	0
5	ITBISA makes me familiar with EFL software	30	53	27	0	0
6	ITBISA enhances my understanding of computer apps	34	53	13	0	0
7	ITBISA guides me in creating digital teaching media	33	47	20	0	0
8	ITBISA makes learning more engaging	40	47	13	0	0
9	ITBISA raises awareness of technological developments	46	47	7	0	0
10	ITBISA creates authentic learning environment	20	47	33	0	0
11	ITBISA uses multimedia to improve skills	47	33	20	0	0
12	ITBISA allows TOEFL practice using digital tools	40	33	27	0	0
13	ITBISA provides apps for TOEFL test practice	27	53	20	0	0
14	ITBISA introduces web-based programs	34	53	13	0	0
15	ITBISA familiarizes me with Duolingo, ChatGPT, Canva, etc.	53	40	7	0	0
16	ITBISA encourages critical & creative thinking	33	60	7	0	0
17	ITBISA guides me in selecting online materials	33	47	20	0	0
18	ITBISA motivates me to explore digital media	33	47	13	7	0
19	ITBISA allows me to measure TOEFL score individually	47	33	20	0	0

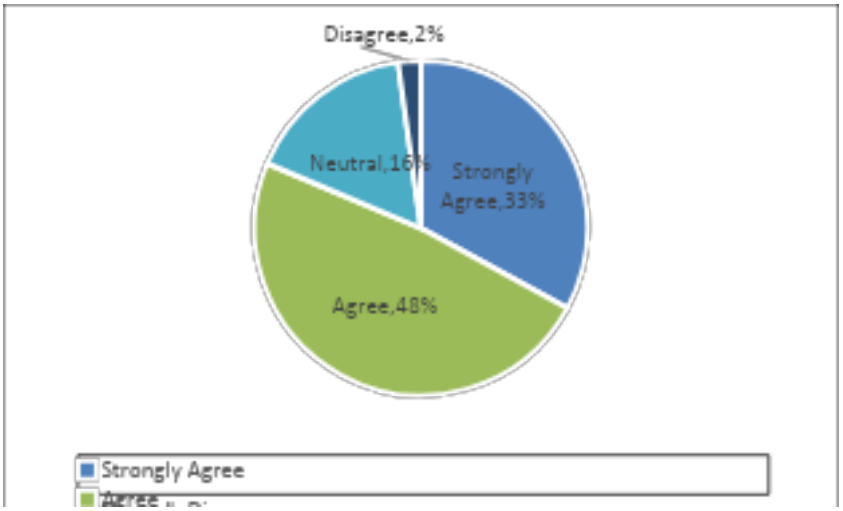

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Figure 1. Overall distribution of responses across 19 items
(Bar chart: SA = 39%, A = 44%, N = 15%, D = 2%, SD = 0%)

As seen in Table 1 and Figure 1, the majority of students expressed positive perceptions toward ITBISA. Strongly Agree and Agree responses together accounted for more than 80% of answers across all items. Neutral responses were present but relatively small (≈15%), while negative responses were negligible (<3%).

Enjoyment and Motivation
Items 1–3 directly measured students' enjoyment of ITBISA. Nearly half (47%) of the students strongly agreed that they enjoyed using the approach, while another third (33%) agreed. Similar trends were found in their willingness to complete tasks through ITBISA. This suggests that ITBISA created an affectively supportive environment. The teacher reflection confirmed this, stating: *"Students were more motivated to complete writing and speaking tasks when they could use digital tools like Padlet and Canva"* (Teacher Journal, Week 5).

The findings of this study are presented in alignment with the dual focus of ITBISA, namely fostering English proficiency and enhancing digital literacy. Data were drawn from the student questionnaire consisting of nineteen items and from teacher reflections collected across the semester. The quantitative data are reported in terms of percentages and frequencies, while the qualitative reflections provide illustrative evidence that deepens the interpretation of the survey results. For clarity, the findings are organized thematically into five interrelated domains: (1) enjoyment and motivation, (2) digital literacy development, (3) engagement and authenticity, (4) language proficiency and TOEFL preparation, and (5) critical thinking and autonomy. Together, these results provide a comprehensive picture of how ITBISA was perceived and experienced by both learners and the teacher in a university EFL context.

Digital Literacy Development
Items 4–7 highlighted the role of ITBISA in digital literacy. Students strongly endorsed statements about becoming more digitally literate (33% SA, 40% A) and learning to create teaching media with digital platforms (33% SA, 47% A). This finding resonates with the teacher's mid-semester reflection: *"Most students now design their lesson plans with Canva or Wordwall, which indicates not only linguistic creativity but also improved digital competence"* (Teacher Interview, Mid-Semester).

Engagement and Authenticity
Items 8–10 addressed student engagement and authenticity. Over 85% agreed that ITBISA made learning more engaging, and almost half strongly agreed that it raised awareness of technological developments. However, in creating an "authentic learning environment," students were slightly more divided, with 33% remaining neutral. This ambivalence may reflect challenges in aligning digital tools with real-world communicative contexts, a theme also noted by the teacher: *"Although students used AI-based apps effectively, some were still unsure about their real-world applications beyond classroom assignments"* (Teacher Journal, Week 8).

Language Proficiency and TOEFL Preparation
Items 11–14 and 19 focused on proficiency. Students strongly agreed that multimedia and apps like Duolingo, Elsa Speak, and ChatGPT enhanced their proficiency. Approximately 73% believed ITBISA prepared them for TOEFL tests, with many using online TOEFL practice apps. At the end of the semester, the teacher observed measurable outcomes: *"Most students advanced at least one CEFR level in speaking and writing tasks, which aligns with their self-reports in the questionnaire"* (Teacher Journal, End-Semester).

Critical Thinking and Autonomy
Items 15–18 reflected higher-order skills. Students strongly agreed that ITBISA introduced them to diverse apps (53% SA, 40% A) and motivated them to explore digital media. Most also believed the approach encouraged critical and creative thinking. These results were confirmed by teacher reflections noting that *"Students began experimenting with new AI tools, beyond those introduced in class, such as Grammarly and Perplexity AI, demonstrating learner autonomy"* (Teacher Interview, End-of-Semester).

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Teacher Reflections

The qualitative data from teacher journals and interviews were analyzed thematically. Four main themes emerged across the semester: instructional planning, student engagement, challenges in implementation, and observed progress (Diggele et al., 2020; McGuinness & Fulton, 2019; Mokhtari, 2023). Table 2 presents a synthesis of these themes with illustrative quotes from the teacher's reflections.

Table 2. Thematic Analysis of Teacher Reflections

Stage of Semester	Theme	Observed Pattern	Illustrative Quote
Beginning	Instructional planning	Integration of multiple digital platforms (Padlet, Canva, Duolingo, ChatGPT, Kahoot) to balance English proficiency and digital literacy.	"I prepared tasks combining language skills with digital applications so that students could practice both simultaneously."
Middle	Student engagement	Students adapted to ITBISA and showed active participation, particularly in writing and speaking.	"Students were enthusiastic in collaborative Padlet projects and gained confidence in Canva-based presentations."
Middle	Challenges	Some students experienced boredom with repetitive tasks and struggled with certain applications.	"A few learners felt disengaged when using the same app repeatedly, while others needed extra guidance to use Duolingo effectively."
End	Progress in proficiency	Most students improved one CEFR level, especially in speaking and writing.	"Their fluency and writing quality increased noticeably by the end of the semester."
End	Growth in digital literacy	Students developed autonomy in applying AI tools and multimedia resources.	"Several students were able to design their own teaching media using Canva and employ ChatGPT to draft academic essays independently."

In addition to the student questionnaire, teacher reflections (collected through weekly journals and mid- and end-semester interviews) provided rich qualitative insights into the implementation of ITBISA. These reflections were analyzed thematically to capture recurring patterns in instructional practice and classroom dynamics. Unlike the student perceptions, which primarily documented learner attitudes and self-reported outcomes, the teacher data offered a longitudinal and pedagogical perspective on how ITBISA unfolded across the semester. The analysis revealed five interrelated themes: instructional planning, student engagement, challenges in implementation, observed progress, and an integrated view of the approach. Together, these themes complement the survey results by illustrating the pedagogical rationale behind ITBISA, its affordances and constraints in practice, and the extent to which it fostered sustainable growth in both language proficiency and digital literacy.

Instructional Planning

At the beginning of the semester, the teacher emphasized integrating ITBISA with a clear pedagogical rationale: combining Oxford's Integrated Skills Approach (ISA) with Son's digital literacy framework. The teacher carefully selected a range of digital tools (Padlet, Canva, Duolingo, Elsa Speak, ChatGPT, WordWall, Google Forms, and Kahoot) to support specific skill areas. For instance, Padlet was assigned to promote collaborative writing and brainstorming, while Canva was intended to foster creativity in designing teaching media. The explicit goal was not only to enhance students' linguistic competence but also to ensure that they acquired practical digital literacy skills required in academic and professional contexts. This stage of planning illustrates how ITBISA was designed as a holistic model rather than a simple adoption of technology.

Student Engagement

By the middle of the semester, reflections documented that students were increasingly comfortable with ITBISA. They demonstrated active engagement in collaborative tasks, particularly in writing and

speaking. For example, projects conducted on Padlet encouraged peer interaction and knowledge sharing, while Canva-based activities promoted creativity and presentation skills. The teacher noted that students "gained confidence in delivering their ideas in English while simultaneously learning how to design visually appealing slides." This indicates that ITBISA not only fostered language use but also enhanced students' multimodal literacy, which is crucial in contemporary academic communication. The engagement theme suggests that ITBISA created a more dynamic and participatory classroom atmosphere compared to conventional approaches.

Challenges in Implementation

Despite the positive engagement, the reflections also highlighted challenges. A recurring issue was boredom from repetitive use of certain applications. For instance, when Duolingo was used repeatedly for vocabulary practice, some students expressed fatigue. Additionally, technical difficulties emerged: a number of students required additional scaffolding to navigate applications effectively, particularly those less familiar with web-based platforms. These challenges underline the importance of variety in digital tool selection and the need for ongoing digital literacy support. Importantly, the teacher reflected that "not all students progress at the same pace in mastering the apps, so extra time and guidance are needed." This theme indicates that while ITBISA is effective, its implementation requires adaptive teaching strategies to maintain engagement and inclusivity.

Observed Progress

By the end of the semester, the teacher reported significant student progress across both dimensions of the ITBISA model. In terms of English proficiency, students demonstrated measurable improvement, with many achieving one CEFR level higher, especially in productive skills (speaking and writing). The teacher described visible gains in fluency, coherence, and vocabulary range in student presentations and essays. In terms of digital literacy, students transitioned from being passive users of technology to becoming autonomous and creative digital practitioners. They independently employed Canva to design teaching materials, used Mendeley for academic referencing, and leveraged ChatGPT to draft and refine essays. The reflections emphasized that students had become "more autonomous in exploring digital resources and more confident in integrating them into their learning tasks." This theme confirms the sustainability of ITBISA as a pedagogical approach that develops transferable skills.

Integrated View

The thematic analysis of teacher reflections corroborates the quantitative findings from the student questionnaire. Both data strands converge on the conclusion that ITBISA successfully enhanced language proficiency and digital literacy. More importantly, the reflections provide contextual nuance by identifying the pedagogical planning behind ITBISA, the dynamic engagement it fostered, the challenges encountered, and the observable progress achieved. This layered perspective strengthens the argument that ITBISA is not only effective but also adaptable for long-term use in higher education.

Discussion

The findings of this study on *ITBISA: A Novel and Sustainable Approach for Supporting EFL Learners' English Proficiency and Digital Literacy* demonstrate that the integration of digital tools within an Integrated Skills Approach (ISA) framework can effectively support both linguistic competence and digital literacy development. The quantitative data revealed that more than 80% of student responses across nineteen questionnaire items were positive, with particularly strong endorsement of items related to enjoyment, motivation, and digital literacy. Meanwhile, the qualitative strand, derived from teacher reflections, provided thematic insights into planning, engagement, challenges, and progress throughout the semester. Together, these findings offer a comprehensive account of ITBISA as a pedagogical model that responds to the dual demands of language education and digital transformation.

From a theoretical perspective, the results corroborate Oxford's ISA, which underscores the need for listening, speaking, reading, and writing to be taught in an integrated manner through authentic communicative tasks. In ITBISA, this was operationalized through activities such as collaborative writing via Padlet, multimodal oral presentations using Canva, TOEFL practice with Duolingo, and real-time feedback through ChatGPT. Students' positive perceptions suggest that learning was not only enjoyable but also meaningful, since tasks embedded multiple skills in realistic contexts. These outcomes support

previous findings that integrated-skill pedagogy enhances motivation and prepares learners for authentic communication (Boncea, 2022; Simon, 2021). They also extend the earlier work of Kurniadi et al. (2025), who first conceptualized ITBISA as a systematic instructional design model, by providing empirical evidence of its classroom implementation and impact on learners.

The emphasis on digital literacy further strengthens the sustainability of ITBISA. In line with Son's framework, which views digital literacy as encompassing critical, creative, and communicative uses of technology, students reported that ITBISA increased their awareness of digital platforms and enhanced their confidence in employing them. Teacher reflections confirmed that learners transitioned from passive consumers to active producers of digital content, for example, by designing their own teaching media in Canva and employing ChatGPT to draft academic essays. Similar evidence has been reported in recent studies showing that guided integration of digital tools fosters not only technical competence but also higher-order skills such as creativity and autonomy (Kwangmuang et al., 2021; Sagala & Andriani, 2019).

The integration of AI within ITBISA represents one of its most novel contributions. Students used ChatGPT as a writing scaffold rather than as a replacement for their own work, reflecting responsible engagement with AI. The teacher observed that students became more autonomous in drafting, revising, and polishing essays, aligning with recent findings that AI can support learner autonomy, creativity, and higher-order thinking if used critically (Aljuaid, 2024; Kamalov et al., 2023; Lin et al., 2024). A meta-analysis published in *Humanities and Social Sciences Communications* further confirms that ChatGPT integration has a strong positive effect on learning performance ($g = 0.867$) and a moderate effect on higher-order thinking ($g = 0.457$), demonstrating the pedagogical potential of AI when properly mediated (Wang & Fan, 2025).

The consistency between students' positive responses and the teacher's observations reflects a convergence that enhances the validity of ITBISA. Similar to earlier studies on Padlet and Google Classroom (Jong & Kim Hua, 2021; J. B. Son et al., 2024; Wahyuni & Arieffiani, 2022), ITBISA succeeded in fostering engagement, collaboration, and authentic language practice. However, it extended beyond those approaches by embedding a broader range of digital tools and explicitly targeting digital literacy as a learning outcome alongside English proficiency. This dual focus makes ITBISA distinctive and particularly relevant in an era when EFL learners must navigate academic and professional contexts that are increasingly mediated by technology.

Nevertheless, the study also identified challenges that must be addressed for ITBISA to remain sustainable. Some students reported boredom from repetitive use of certain applications, while others struggled with more complex tools, highlighting uneven levels of digital literacy within the class. These findings echo broader concerns in the literature that overreliance on a narrow set of digital tools can reduce engagement (Han et al., 2024; Li, 2022), and that scaffolding is essential to ensure inclusivity when learners have diverse levels of digital competence. Addressing these challenges requires thoughtful instructional design that varies digital tasks, maintains novelty, and provides ongoing support for learners at different proficiency levels.

This study affirms that ITBISA is a novel and sustainable pedagogical model that merges integrated skills pedagogy with digital literacy development in ways that are relevant for the twenty-first-century classroom. It not only enhances language proficiency but also equips learners with transferable digital skills, preparing them for academic and professional demands in an AI-mediated world. The convergence of quantitative and qualitative evidence suggests that ITBISA is not only effective but also adaptable across diverse EFL contexts. These findings have implications for curriculum design, teacher education, and policy development, especially in contexts where digital transformation is reshaping education.

CONCLUSION

This study set out to investigate the potential of ITBISA (*IT-Based Integrated Skills Approach*) as a novel and sustainable framework for supporting EFL learners' English proficiency and digital literacy. The objective was to examine whether integrating Oxford's Integrated Skills Approach with digital literacy principles and emerging AI tools could provide a more effective and relevant model of language instruction in higher education. The findings and discussion confirm that these objectives were achieved: students not only improved their linguistic skills, especially in speaking and writing, but also developed greater confidence and autonomy in navigating digital platforms. Teacher reflections further revealed that learners transitioned from being passive users of technology into active and critical producers of digital

content, illustrating the sustainability of ITBISA in fostering transferable academic and professional skills.

The study highlights ITBISA's relevance as a pedagogical response to the dual challenges of language mastery and digital transformation. Its contribution lies in demonstrating that integrated-skill pedagogy, when combined with purposeful digital and AI tool use, can enhance both communicative competence and digital literacy in ways that are aligned with the demands of twenty-first century learning. This synthesis of purposes, findings, and theoretical grounding positions ITBISA as a valuable framework for rethinking EFL instruction in an AI-mediated era.

The practical implications are significant. For teachers, ITBISA offers a flexible model that can increase classroom engagement while cultivating higher-order skills. For curriculum developers and institutions, ITBISA provides a blueprint for embedding digital literacy within language programs, ensuring that graduates are not only proficient in English but also digitally competent. Policymakers may also view ITBISA as evidence that language education must integrate technological fluency as a core outcome.

Future research should expand on this foundation by testing ITBISA across different contexts, learner populations, and proficiency levels. Larger-scale studies could further validate its effectiveness and examine its scalability. Additionally, as AI technologies continue to evolve, further investigation is needed into how tools such as ChatGPT, adaptive testing platforms, and multimodal applications can be more deeply embedded within ITBISA to promote critical and ethical digital engagement. Such studies would not only strengthen the evidence base for ITBISA but also ensure that language pedagogy remains adaptive, sustainable, and responsive to the rapidly changing digital landscape.

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REFERENCES

Adnyani, W. S. (2022). An overview of English language proficiency index in EFL countries. *Yavana Bhasa: Journal of English Language Education*, *5*(2), 186–199. https://doi.org/https://doi.org/10.25078/yb.v5i2.959

Alharbi, W. (2023). AI in the foreign language classroom: A pedagogical overview of automated writing assistance tools. *Education Research International*, *2023*, 1–15. https://doi.org/10.1155/2023/4253331

Aljuaid, H. (2024). The impact of artificial intelligence tools on academic writing instruction in higher education: A systematic review. *Arab World English Journal*, *1*(1), 26–55. https://doi.org/10.24093/awej/chatgpt.2

Boncea, I. J. (2022). Integrated skills in online technical English classes. *Revista de Științe Politice. Revue Des Sciences Politiques*, *76*(1), 184–193.

Burić, I., & Wang, H. (2024). Relationships among teacher enjoyment, emotional labor, and perceived student engagement: A daily diary approach. *Journal of School Psychology*, *103*, 1–19. https://doi.org/10.1016/j.jsp.2023.101271

Cote, T., & Milliner, B. (2018). A survey of EFL teachers' digital literacy: A report from a Japanese university. *Teaching English with Technology*, *18*(4), 71–89. https://tewtjournal.org/download/6-a-survey-of-efl-teachers-digital-literacy-a-report-from-a-japanese-university-by-travis-cote-and-brett-milliner/

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches (fifth edition)*. SAGE.

Deschênes, A. A. (2024). Digital literacy, the use of collaborative technologies, and perceived social proximity in a hybrid work environment: Technology as a social binder. *Computers in Human Behavior Reports*, *13*, 1–9. https://doi.org/10.1016/j.chbr.2023.100351

Diggele, C. van, Burgess, A., & Mellis, C. (2020). Planning, preparing and structuring a small group teaching session. *BMC Medical Education*, *20*(2), 1–8. https://doi.org/10.1186/s12909-020-02281-4

Fitriati, S. W., & Lisa, A. (2019). *Discourse studies in English language education*. UNNES PRESS.

Gautam, P. (2019). Integrated and segregated teaching of language skills: An exploration. *Journal of NELTA Gandaki (JoNG)*, *1*(1), 100–107. https://doi.org/https://doi.org/10.3126/jong.v1i0.24464

Gemiharto, I., & CMS, S. (2024). Inclusivity and accessibility in digital communication tools: Case study of AI-enhanced platforms in Indonesia. *Jurnal Pewarta Indonesia*, *6*(1), 78–88. https://doi.org/10.25008/jpi.v6i1.154

Hadi, M. S., Izzah, L., & Paulia, Q. (2021). Teaching writing through Canva application to enhance students' writing performance. *JOLLT Journal of Languages and Language Teaching*, *9*(2), 228–235. https://doi.org/10.33394/jollt.v%vi%i.3533

Han, R., Alibakhshi, G., Lu, L., & Labbafi, A. (2024). Digital communication activities and EFL learners' willingness to communicate and engagement: Exploring the intermediate language learners' perceptions. *Heliyon*, *10*(3), 1–14. https://doi.org/10.1016/j.heliyon.2024.e25213

Hutagalung, G. U. (2024). Decoding the digital world: How digital literacy skills support language acquisition. *CULTURALISTICS: Journal of Cultural, Literary, and Linguistic Studies*, *8*(1), 28–42. https://doi.org/https://doi.org/10.14710/ca.v8i1.23654

Iskandar, I., Sumarni, S., Dewanti, R., & Asnur, M. N. A. (2022). Infusing digital literacy in authentic academic digital practices of English language teaching at universities. *International Journal of Language Education*, *6*(1), 75–90. https://doi.org/10.26858/ijole.v6i1.31574

Jong, B., & Kim Hua, T. (2021). Using Padlet as a technological tool for assessment of students' writing skills in online classroom settings. *International Journal of Education and Practice*, *9*(2), 411–423. https://doi.org/10.18488/journal.61.2021.92.411.423

Kamalov, F., Santandreu Calonge, D., & Gurrib, I. (2023). New era of artificial intelligence in education: Towards a sustainable multifaceted revolution. *Sustainability (Switzerland)*, *15*(16). https://doi.org/10.3390/su151612451

Kurniadi, D., Yuliasri, I., Wahyuni, S., & Sakhiyya, Z. (2025). Contriving IT-Based Integrated Skills Approach (ITBISA) for students' English proficiency and digital literacy skills. *Qubahan Academic Journal*, *5*(1), 782–797. https://doi.org/10.48161/qaj.v5n1a1595

Kwangmuang, P., Jarutkamolpong, S., Sangboonraung, W., & Daungtod, S. (2021). The development of learning innovation to enhance higher order thinking skills for students in Thailand junior high schools. *Heliyon*, *7*(6). https://doi.org/10.1016/j.heliyon.2021.e07309

Li, C. (2022). Foreign language learning boredom and enjoyment: The effects of learner variables and teacher variables. *Language Teaching Research*. https://doi.org/10.1177/13621688221090324

Lin, X., Chan, R. Y., Sharma, S., & Bista, K. (2024). *ChatGPT and global higher education: Using artificial intelligence in teaching and learning*. STAR Scholars Press.

Loewen, S., Crowther, D., Isbell, D. R., Kim, K. M., Maloney, J., Miller, Z. F., & Rawal, H. (2019). Mobile-assisted language learning: A Duolingo case study. *ReCALL*, *31*(3), 293–311. https://doi.org/10.1017/S0958344019000065

McGuinness, C., & Fulton, C. (2019). Digital literacy in higher education: A case study of student engagement with e-tutorials using blended learning. *Journal of Information Technology Education: Innovations in Practice*, *18*, 1–28. https://doi.org/10.28945/4190

Melvina, M., & Julia, J. (2021). Learner autonomy and English proficiency of Indonesian undergraduate students. *Cypriot Journal of Educational Sciences*, *16*(2), 803–818. https://doi.org/10.18844/CJES.V16I2.5677

Mokhtari, F. (2023). Fostering digital literacy in higher education: Benefits, challenges, and implications. *International Journal of Linguistics, Literature and Translation*, *6*(10), 160–167. https://doi.org/10.32996/ijllt

Mötteli, C., Grob, U., Pauli, C., Reusser, K., & Stebler, R. (2023). The influence of personalized learning on the development of learning enjoyment. *International Journal of Educational Research Open*, *5*, 1–10. https://doi.org/10.1016/j.ijedro.2023.100271

Mujico, F. G., & Lasagabaster, D. (2019). Enhancing L2 motivation and English proficiency through technology. *Complutense Journal of English Studies*, *27*, 59–78. https://doi.org/10.5209/cjes.62990

Mujiyanto, Y., & Fitriati, S. W. (2020). *Benang merah: Pokok-pokok penulisan karya ilmiah di Perguruan Tinggi*. Unnes Press.

Munday, P. (2016). The case for using Duolingo as part of the language classroom experience. *RIED*, *19*(1), 83–101. https://doi.org/10.5944/ried.19.1.14581

Nguyen, T. T., Tran, T. N. H., Do, T. H. M., Dinh, T. K. L., Nguyen, T. U. N., & Dang, T. M. K. (2024). Digital literacy, online security behaviors and E-payment intention. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(2). https://doi.org/10.1016/j.joitmc.2024.100292

Oxford, R. (2001). Integrated skills in the ESL/EFL classroom. *TESOL France*, *8*(1), 5–12. https://www.tesol-france.org/en/pages/108/the-journal-volume-8-2001.html

Pangrazio, L., Godhe, A. L., & Ledesma, A. G. L. (2020). What is digital literacy? A comparative review of publications across three language contexts. *E-Learning and Digital Media*, *17*(6), 442–459. https://doi.org/10.1177/2042753020946291

Ray, P. P. (2023). ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope. *Internet of Things and Cyber-Physical Systems*, *3*, 121–154. https://doi.org/10.1016/j.iotcps.2023.04.003

Sagala, P. N., & Andriani, A. (2019). Development of Higher-Order Thinking Skills (HOTS) Questions of Probability Theory Subject Based on Bloom's Taxonomy. *Journal of Physics: Conference Series*, *1188*(1). https://doi.org/10.1088/1742-6596/1188/1/012025

Simon, B. S. R. S. (2021). An integrated approach to teaching language skills. *International Journal of Innovative Research in Technology*, *8*(5), 190–195.

Son, J. B., Park, M., & Liu, M. H. (2024). Language teacher development in technology integration: Exploration, communication, collaboration, and reflection. *Online Learning Journal*, *28*(3), 474–496. https://doi.org/10.24059/olj.v28i3.3842

Son, J.-B., Park, S.-S., & Park, M. (2017). Digital literacy of language learners in two different contexts. *JALT Call Journal*, *13*(2), 77–96. https://doi.org/10.29140/jaltcall.v13n2.213

Wahyuni, E. S., & Arieffiani, D. (2022). Google classroom as a web-based instruction in teaching English writing and speaking during covid-19. *Research and Innovation in Language Learning*, *5*(1), 1. https://doi.org/10.33603/rill.v5i1.5659

Wang, J., & Fan, W. (2025). The effect of ChatGPT on students' learning performance, learning perception, and higher-order thinking: insights from a meta-analysis. In *Humanities and Social Sciences Communications* (Vol. 12, Issue 1). Springer Nature. https://doi.org/10.1057/s41599-025-04787-y

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