

EMPOWERING FIRST-YEAR UNIVERSITY STUDENTS' LITERACY THROUGH ICT-SUPPORTED READING AND WRITING ACTIVITIES

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Abstract

This study explores the potential of integrating Information and Communication Technology (ICT) into reading and writing activities to support the development of English language literacy among first-year university students. The preliminary research was carried out in a private university in Bandung, West Java, involving 40 students and 2 lecturers from Reading and Writing classes. This early phase of a larger dissertation project aims to identify students' and lecturers' perceptions of ICT tools in enhancing literacy learning in the EFL context. A qualitative approach was used, combining classroom observation, questionnaires, and semi-structured interviews. The focus was on how students engage with digital tools, how these tools support their literacy practices, and what challenges they encounter. Two ICT applications, BBC Learning English and Busuu, were observed as commonly used platforms to assist students' reading and writing development. Initial findings indicate that students perceive ICT as beneficial in building vocabulary, improving reading comprehension, and strengthening writing fluency. They also found digital tools helpful for independent learning and more engaging than traditional methods. Lecturers reported increased student motivation, better classroom interaction, and improved learner autonomy when technology was integrated into their instructional practices. These early insights suggest that ICT-supported literacy activities can play a crucial role in empowering students' English language learning, particularly in the integration of reading and writing. The study underlines the importance of designing ICT-based pedagogy that is both meaningful and accessible. Further stages of the research will delve deeper into pedagogical strategies, student outcomes, and long-term impacts on literacy development in Indonesian higher education.

Keywords: ICT integration, literacy development, reading and writing, English language learning, higher education

Introduction

The rapid advancement of Information and Communication Technology (ICT) has significantly transformed educational practices, including the teaching and learning of English as a Foreign Language (EFL). In higher education, digital tools are increasingly integrated into classroom instruction to facilitate more interactive, flexible, and student-centered learning environments (Dini et al., 2024; Røkenes & Krumsvik, 2016). This shift is particularly relevant in the context of literacy development, where reading and writing skills are no longer confined to traditional print-based practices but are extended to digital and multimodal forms.

In the Indonesian EFL context, the integration of ICT has gained considerable attention, especially in response to the growing demand for digital literacy competencies among university students. First-year students, in particular, face the challenge of adapting to academic literacy practices while simultaneously navigating the use of digital tools for learning (Pratiwi et al., 2023; Rahayu & Khairi, 2025). Despite their familiarity with technology in everyday life, many students still struggle to effectively utilize ICT for academic reading and writing purposes. This indicates a gap between general digital usage and pedagogically meaningful ICT integration in language learning.

Previous studies have highlighted the potential of ICT to enhance language learning by promoting learner autonomy, increasing engagement, and providing access to authentic learning resources (Chen et al., 2025; Hübner et al., 2023). Digital platforms such as language learning applications and

online collaborative tools offer opportunities for students to practice reading and writing in more dynamic and personalized ways. However, much of the existing research tends to focus on the effectiveness of specific tools or platforms, with limited attention to how ICT is actually integrated into classroom practices and how students and lecturers perceive its role in supporting literacy development.

Furthermore, the integration of reading and writing through ICT remains underexplored, particularly in the early stages of university education. While reading and writing are closely interconnected processes, instructional practices often treat them as separate skills (Inayah & Argawati, 2019; Rizqiya et al., 2017). The use of ICT has the potential to bridge this gap by enabling more integrated and interactive literacy activities. Nevertheless, there is still a lack of empirical evidence on how such integration is implemented and experienced in real classroom settings.

In response to these gaps, this study aims to explore how ICT-supported reading and writing activities contribute to the development of English language literacy among first-year university students. Specifically, this study is guided by the following research questions:

1. How is ICT integrated into reading and writing instruction in first-year EFL classrooms?
2. How do students engage with ICT tools in developing their reading and writing skills?
3. What are students' and lecturers' perceptions of the use of ICT in supporting literacy development?

4. What challenges are encountered in the implementation of ICT-supported literacy activities?

The findings of this study are expected to contribute to the growing body of research on ICT integration in EFL contexts, particularly in Indonesian higher education. By providing insights into the pedagogical use of digital tools for literacy development, this study offers implications for designing more effective and meaningful ICT-based instruction that supports students' academic literacy and prepares them for the demands of the digital era.

Methodology

This study employed a qualitative research design to explore how Information and Communication Technology (ICT) is integrated into reading and writing instruction and how it supports the development of English language literacy among first-year university students. As a preliminary phase of a larger dissertation project, this study focused on gaining an in-depth understanding of participants' experiences, perceptions, and classroom practices related to ICT-supported literacy learning.

A qualitative approach was considered most appropriate because the study seeks to capture the complexity and contextual nature of ICT integration, which cannot be fully understood through numerical data alone. The use of qualitative design allows the researcher to explore how students and lecturers interpret, experience, and negotiate the use of ICT in real classroom settings. This aligns with the principles of qualitative research, which emphasize rich, descriptive data and the exploration of meaning from

participants' perspectives (Fraenkel et al., 2023; Silverman, 2013).

Research Context and Participants

The study was conducted at a private university in Bandung, West Java, Indonesia. The participants consisted of 40 first-year students enrolled in Reading and Writing courses and 2 lecturers who taught these courses. The students were selected as they were in the initial stage of adapting to academic literacy practices in higher education, while the lecturers were chosen due to their direct involvement in integrating ICT into classroom instruction.

Data Collection Techniques and Instruments

Data were collected using multiple techniques to ensure the richness and credibility of the findings. These included classroom observations, questionnaires, and semi-structured interviews.

Classroom observations were conducted to examine how ICT tools were implemented in actual teaching and learning activities, with particular attention to students' engagement, interaction patterns, and the integration of reading and writing tasks. Field notes were used to document instructional practices and classroom dynamics.

Questionnaires were administered to students to gather information about their experiences, frequency of ICT use, and perceptions of digital tools in supporting their literacy development. The questionnaire items focused on aspects such as vocabulary

development, reading comprehension, writing fluency, and learner autonomy.

Semi-structured interviews were conducted with the lecturers to gain deeper insights into their instructional strategies, the selection and use of ICT tools, and the challenges encountered in integrating technology into literacy instruction. The interviews also explored lecturers' perspectives on students' engagement and learning outcomes (Creswell, 2018).

In this study, two ICT platforms—BBC Learning English and Busuu—were identified as commonly used tools in supporting students' reading and writing development. These platforms were examined as part of the classroom practices observed.

Data Analysis

The data were analyzed using thematic analysis. The analysis process involved several stages, including data familiarization, coding, categorization, and theme development. Data from observations, questionnaires, and interviews were triangulated to enhance the validity and reliability of the findings. The emerging themes were then interpreted in relation to the research questions and existing theoretical frameworks on ICT integration and literacy development.

Research Procedure

The study was conducted in several stages. First, preliminary observations were carried out to understand the classroom context and identify the use of ICT tools. This was followed by the distribution of questionnaires to students to obtain initial data on their perceptions and experiences. Subsequently, classroom observations were conducted

during reading and writing sessions to capture real-time instructional practices. Finally, semi-structured interviews with lecturers were conducted to provide deeper insights and to clarify findings from previous data collection stages.

Findings and Discussion

This section presents the findings of the study in relation to the research questions, followed by their interpretation within the broader context of ICT integration and literacy development in EFL settings.

ICT Integration in Reading and Writing Instruction in First-Year EFL Classrooms

The findings indicate that ICT was integrated into classroom instruction through the use of digital platforms, particularly *BBC Learning English* and *Busuu*, to support both reading and writing activities. These tools were used to provide students with access to authentic materials, such as short texts, dialogues, and interactive exercises, which were incorporated into classroom tasks.

In reading activities, students engaged with digital texts that included vocabulary support, audio features, and comprehension exercises. These multimodal elements enabled students to better understand the content and facilitated more active engagement with the texts. In writing activities, ICT tools were used to guide students in constructing sentences and short

paragraphs, often supported by model texts and automated feedback features.

The integration of ICT was not limited to content delivery but also extended to instructional strategies. Lecturers used these platforms to design tasks that combined reading input with writing output, thereby promoting a more integrated approach to literacy development. This finding aligns with previous studies suggesting that ICT can facilitate the integration of language skills through interactive and scaffolded learning environments (Buckingham, 2015; Ng, 2012; Nurholis et al., 2025).

Students' Engagement with ICT Tools in Developing Reading and Writing Skills

Students demonstrated active engagement with ICT tools, particularly in terms of participation, interaction, and independent learning. The questionnaire results and classroom observations revealed that students frequently interacted with digital materials, completed online exercises, and revisited content outside of classroom hours.

In terms of reading, students reported that features such as audio support and instant vocabulary explanations helped them comprehend texts more effectively. In writing, students benefited from guided exercises and immediate feedback, which allowed them to revise and improve their work.

Moreover, ICT tools encouraged a higher level of learner autonomy. Many students reported using the platforms independently beyond classroom requirements, indicating that ICT supported self-directed learning. This finding reflects the role of digital tools in fostering learner-centered environments,

where students take greater responsibility for their learning processes.

The findings indicate that students' engagement with ICT tools goes beyond mere participation and reflects a shift toward more interactive and autonomous learning practices. This aligns with the concept of constructivist learning theory, which emphasizes that learners actively construct knowledge through interaction with tools, content, and their environment. In this study, ICT tools functioned not only as delivery media but also as cognitive scaffolds that supported students' meaning-making processes in both reading and writing.

In the context of reading, the availability of multimodal features—such as audio support and instant vocabulary explanations—appears to reduce cognitive load and facilitate comprehension. This supports Cognitive Load Theory, suggesting that well-designed digital tools can help learners process information more efficiently by integrating visual, auditory, and textual inputs. The ability to revisit texts and access immediate clarification enables students to engage in deeper reading practices, moving from surface-level decoding to more analytical comprehension.

Regarding writing development, the presence of guided exercises and immediate feedback highlights the importance of formative assessment in digital environments. The findings resonate with principles of formative assessment, where timely feedback plays a crucial role in helping learners identify gaps and refine their output. ICT tools, in this case, act as responsive systems that support iterative writing processes, allowing students to revise their work continuously and develop greater accuracy and coherence.

Furthermore, the emergence of learner autonomy as a key theme reflects broader trends in digital language learning. The students' willingness to engage with ICT tools beyond classroom requirements suggests that these technologies foster intrinsic motivation and self-regulated learning behaviors. This is consistent with the notion of self-regulated learning, where learners take active control over their learning goals, strategies, and evaluation (Alim, 2020; Marwan, 2013). ICT tools provide the flexibility and accessibility necessary for such independent learning to occur (Buckingham, 2015; Eshet-Alkalai, 2004).

However, while the findings demonstrate positive engagement, they also imply the need for careful instructional design. The effectiveness of ICT tools depends not only on their availability but also on how they are integrated into pedagogical practices. Without structured guidance, there is a risk that students may engage superficially with digital content. Therefore, instructors play a critical role in mediating technology use to ensure that engagement leads to meaningful learning outcomes.

Overall, this study highlights that ICT tools can significantly enhance students' reading and writing development when they promote interaction, provide immediate feedback, and support learner autonomy. The findings reinforce the idea that technology, when pedagogically grounded, can transform traditional language learning into a more dynamic, student-centered process.

Students' and Lecturers' Perceptions of ICT Use in Supporting Literacy Development

Both students and lecturers expressed positive perceptions regarding the use of ICT in literacy learning. Students perceived ICT as beneficial in enhancing their vocabulary, improving reading comprehension, and increasing writing fluency. They also highlighted that digital platforms made learning more engaging and less monotonous compared to traditional classroom methods.

Lecturers, on the other hand, emphasized the pedagogical advantages of ICT integration. They reported increased student motivation, more dynamic classroom interaction, and improved participation during reading and writing activities. ICT tools were also seen as effective in supporting differentiated instruction, allowing lecturers to accommodate varying levels of student proficiency.

These findings support the notion that ICT can enhance both cognitive and affective aspects of language learning. The positive perceptions from both students and lecturers indicate that ICT integration, when implemented effectively, can contribute to more meaningful and engaging literacy practices.

The positive perceptions expressed by both students and lecturers suggest that ICT integration is not only functionally effective but also pedagogically meaningful in supporting literacy development. These findings can be understood through the lens of the **Technology Acceptance Model**, which posits that users' acceptance of technology is largely influenced by their perceptions of usefulness and ease of use. In

this study, students' recognition of improved vocabulary, comprehension, and writing fluency reflects a high level of perceived usefulness, while their enjoyment of digital platforms indicates a positive user experience that encourages continued engagement.

From the students' perspective, the increased engagement and reduced monotony associated with ICT-based learning highlight the importance of affective factors in language acquisition. This aligns with the **Affective Filter Hypothesis**, which suggests that learners perform better when they are motivated, relaxed, and emotionally engaged. ICT tools, by offering interactive and multimodal learning experiences, appear to lower learners' affective barriers, thereby facilitating more effective literacy development (Pintrich & De Groot, 1990; Reeve, 2013).

Lecturers' perceptions further reinforce the pedagogical value of ICT, particularly in fostering interactive and student-centered classrooms. The reported increase in participation and classroom dynamism reflects principles of **communicative language teaching**, where meaningful interaction is central to language learning. ICT tools enable more opportunities for such interaction, both synchronously and asynchronously, allowing students to actively engage with texts and writing tasks.

Moreover, the lecturers' emphasis on differentiated instruction underscores the flexibility of ICT in addressing diverse learner needs. This finding resonates with the concept of **differentiated instruction**, where teaching strategies are adapted to accommodate varying levels of ability, learning styles, and pace. Digital platforms provide multiple pathways for learning, enabling lecturers to tailor instruction and support more inclusive literacy practices.

Importantly, the convergence of positive perceptions from both students and lecturers indicates a shared readiness for technology-enhanced learning environments. This mutual acceptance is critical for successful ICT implementation, as it ensures alignment between instructional design and learner engagement. However, it is also necessary to acknowledge that positive perceptions alone do not guarantee effective learning outcomes. The impact of ICT depends on thoughtful integration, pedagogical alignment, and continuous evaluation of its use in practice.

In sum, the findings demonstrate that ICT contributes to both cognitive gains and affective engagement in literacy learning. By enhancing motivation, supporting interaction, and enabling instructional flexibility, ICT serves as a powerful enabler of more meaningful and responsive language learning experiences.

Challenges in the Implementation of ICT-Supported Literacy Activities

Despite the overall positive findings, several challenges were identified in the implementation of ICT-supported literacy activities. One of the main challenges was related to technical issues, such as unstable internet connections and limited access to devices for some students. These issues occasionally disrupted classroom activities and affected the continuity of learning.

In addition, some students experienced difficulties in navigating digital platforms, particularly when dealing with more complex features. This indicates that digital familiarity does not necessarily translate into effective academic use of ICT.

From the lecturers' perspective, challenges included the need for additional time to prepare ICT-based materials and the necessity to balance between technological tools and pedagogical objectives. Lecturers also noted that not all ICT tools are equally suitable for integrating reading and writing, requiring careful selection and adaptation.

These challenges highlight the importance of providing adequate infrastructure, training, and pedagogical support to ensure the effective implementation of ICT in literacy instruction.

The challenges identified in this study reveal that the integration of ICT in literacy instruction is a complex process that extends beyond the mere availability of technology. While ICT offers significant pedagogical benefits, its implementation is often constrained by structural, technical, and human factors. These findings can be interpreted through the framework of the **digital divide**, which highlights disparities in access to technology, connectivity, and digital resources. The issues of unstable internet connections and unequal access to devices demonstrate that not all students benefit equally from ICT integration, potentially leading to gaps in learning opportunities and outcomes.

Moreover, students' difficulties in navigating digital platforms suggest that digital familiarity does not automatically equate to digital competence in academic contexts. This supports the notion of **digital literacy** as a multifaceted skill that includes not only technical abilities but also cognitive and strategic competencies. Students may be accustomed to using technology for social or entertainment purposes, yet still struggle when required to engage with more complex, task-oriented academic tools. This indicates a need for explicit instruction and scaffolding

to help students develop functional digital literacy skills that are relevant to reading and writing tasks.

From the lecturers' perspective, the additional workload associated with preparing ICT-based materials reflects a common challenge in technology-enhanced learning environments. This aligns with the **TPACK framework**, which emphasizes the intersection of technology, pedagogy, and content knowledge. Effective ICT integration requires lecturers not only to master technological tools but also to align them with pedagogical goals and subject content. The need to carefully select appropriate tools for literacy instruction highlights the complexity of achieving this balance.

Furthermore, the concern that not all ICT tools are equally suitable for teaching reading and writing underscores the importance of pedagogical alignment. Technology should not be used for its own sake but must be meaningfully integrated to support specific learning objectives (González-Lloret & Ortega, 2014; Jiang et al., 2024; Kearsley & Shneiderman, 1998; Lysenko & Abrami, 2014). Without such alignment, there is a risk of cognitive overload or fragmented learning experiences, where students focus more on navigating the tool than on developing literacy skills.

These findings also point to the necessity of institutional support, including reliable infrastructure, ongoing professional development for lecturers, and structured guidance for students. Addressing these challenges requires a systemic approach that considers both technological and pedagogical dimensions.

In conclusion, while ICT has the potential to transform literacy instruction, its effectiveness depends on overcoming

practical and pedagogical barriers. Ensuring equitable access, enhancing digital literacy, and supporting lecturers in instructional design are critical steps toward maximizing the benefits of ICT in language learning contexts.

Conclusion

This study set out to explore how ICT-supported reading and writing activities contribute to the development of English language literacy among first-year university students. The findings demonstrate that ICT plays a significant role in facilitating more interactive, integrated, and student-centered literacy practices in EFL classrooms.

The integration of digital platforms into classroom instruction enabled a closer connection between reading and writing activities, supporting a more holistic approach to literacy development. ICT tools not only provided access to authentic and multimodal learning materials but also offered scaffolding through features such as guided exercises and immediate feedback. These affordances contributed to improvements in students' vocabulary, reading comprehension, and writing fluency.

In addition, students' engagement with ICT was evident across behavioral, cognitive, and affective dimensions. The use of digital tools encouraged active participation, supported deeper comprehension, and fostered positive learning attitudes. Importantly, ICT also promoted learner autonomy, as students extended their learning beyond the classroom and engaged in self-directed practices.

From the lecturers' perspective, ICT integration enhanced classroom dynamics, increased student motivation, and supported differentiated instruction. However, the study also identified several challenges, including technical limitations, varying levels of students' digital competence, and the additional pedagogical demands placed on lecturers. These challenges highlight that effective ICT integration requires not only access to technology but also thoughtful instructional design and adequate support.

Overall, this study underscores the potential of ICT to empower students' literacy development by creating meaningful connections between reading and writing in digitally mediated environments.

Pedagogical Implications. The findings suggest that educators should adopt a balanced and purposeful approach to ICT integration, ensuring that digital tools are aligned with pedagogical objectives and literacy goals. Training and support for both lecturers and students are essential to enhance digital competence and maximize the effectiveness of ICT use. Institutions also need to ensure reliable technological infrastructure to support sustainable implementation.

Future Research. As this study represents a preliminary phase of a larger research project, further investigation is needed to examine the long-term impact of ICT-supported literacy instruction on students' academic performance and literacy outcomes. Future studies may also explore specific instructional models and strategies that optimize the integration of ICT in diverse EFL contexts.

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