

## Developing Digital Literacy through E-Portfolio-Based Learning: A Pathway to Lifelong Learning in EFL Classrooms

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### Abstract

This study investigates how e-portfolio-based learning develops digital literacy and fosters lifelong learning in EFL classrooms. Drawing on Digital Literacy Theory (Ng, 2012), Lifelong Learning Theory (Candy, 2002), and Constructivist Learning Theory (Vygotsky, 1978), this research employs a qualitative case study design involving 12 undergraduate students from an English Education program. Data were collected through classroom observations, semi-structured interviews, and document analysis of students' e-portfolios. Thematic analysis revealed that e-portfolio-based learning effectively enhanced students' digital literacy across technical, cognitive, and socio-emotional dimensions. Students demonstrated greater ability to manage digital tools, evaluate information critically, and reflect on their learning processes. The findings also indicate that e-portfolio-based learning fosters learner autonomy, creativity, and sustained motivation—key characteristics of lifelong learning. Despite challenges such as limited digital confidence and time constraints, the results affirm that e-portfolio-based learning serves as an effective pedagogical approach for integrating digital competence and lifelong learning within EFL classrooms. The study highlights the need for reflective digital practices in language education to promote adaptive and continuous learning in the digital age.

**Keywords:** Digital Literacy, E-Portfolio-Based Learning, Lifelong Learning, Reflective Learning, EFL Classrooms

### Introduction

In the 21st century, digital literacy has become an indispensable competency for students navigating academic, social, and professional environments. Digital literacy encompasses technical skills to operate digital tools, cognitive skills to evaluate and process information, and socio-emotional skills to engage ethically and responsibly in digital spaces. As global demands for digital competence continue to rise, higher education institutions are increasingly encouraged to integrate digital literacy into curriculum design to prepare learners for the digital economy (Kayyali, 2024). The accelerated shift toward technology-enhanced learning has heightened the need for pedagogical approaches that support autonomy, reflection, and creativity, enabling learners to adapt continuously to emerging technological landscapes (Pospíšilová & Rohlíková, 2023).

One approach that aligns with these emerging educational priorities is e-portfolio-based learning. An e-portfolio serves as a digital collection of students' artifacts—such as assignments, reflections, projects, and multimedia materials—that demonstrates their progress and achievements over time. It emphasizes learner agency, metacognition, and reflective practice, making it well-suited to digital-age education. Research shows that e-portfolios enhance students' digital literacy across technical, cognitive, and socio-emotional dimensions (Karimah et al., 2023), support authentic communication and creativity, and promote reflective learning that extends beyond traditional assessment (Yang & Wong, 2024). In EFL contexts, digital portfolios provide meaningful opportunities for students to integrate language learning with digital skills, encouraging collaboration, critical thinking, and digital communication (Serpil, 2023).

The development of digital literacy through e-portfolios also intersects with broader principles of lifelong learning. Lifelong learning refers to an ongoing process of acquiring skills, knowledge, and attitudes throughout one's life. Candy (2002) highlights autonomy, self-regulation, and intrinsic motivation as core attributes of lifelong learners. E-portfolio-based learning supports these attributes by encouraging students to take ownership of their learning trajectories, set personal goals, and reflect on their progress. Evidence from recent studies indicates that e-portfolios strengthen learners' independence, motivation, and reflective habits—characteristics that are essential for sustaining learning across personal and professional contexts (Butakor, 2024; Chisango, 2024)

The theoretical foundation of this study is informed by three complementary frameworks. Digital Literacy Theory (Ng, 2012) conceptualizes digital literacy as comprising technical, cognitive, and socio-emotional dimensions, each contributing to learners' broader digital competence. Lifelong Learning Theory (Candy, 2002) emphasizes self-direction and reflective practice, positioning learners as active agents in their educational development. Complementing these is (Vygotsky, 1978) Constructivist Learning Theory, which situates learning as a socially mediated and reflective process. These theoretical perspectives collectively frame e-portfolio-based learning as a pedagogical approach that not only strengthens digital competence but also nurtures reflective, independent learners.

Previous research underscores the potential of e-portfolios in enhancing digital literacy and promoting autonomous, reflective learning behaviors. Studies by Kayyali (2024), Pospíšilová & Rohlíková (2023), and Yang & Wong (2024) highlight the transformative role of e-portfolios in enabling students to manage digital tools, critically assess information, collaborate meaningfully, and engage in continuous self-evaluation. Additionally, research by Karimah et al. (2023) and Serpil (2023) affirms that e-portfolios foster essential digital and communicative competences in EFL settings, supporting learners in integrating language skills with digital practices. Despite these promising findings, challenges remain—such as constraints in digital confidence, uneven access to technology, and variation in reflective abilities—which underscore the need for deeper investigation into the practical integration of e-portfolio-based learning in EFL classrooms.

Against this backdrop, the present study explores how e-portfolio-based learning develops digital literacy and fosters lifelong learning among undergraduate EFL students. By examining students' experiences, reflections, and digital artifacts within an e-portfolio-integrated course, this study seeks to contribute to a deeper understanding of how digital literacy and lifelong learning can be cultivated through purposeful and reflective digital pedagogies in higher education.

## **Method**

This study employed a qualitative case study design to investigate how e-portfolio-based learning develops digital literacy and fosters lifelong learning among students in an English as a Foreign Language (EFL) classroom. A case study approach was chosen because it enables an in-depth understanding of participants' experiences within a real educational setting and allows the researcher to closely examine the processes and interactions involved (Creswell, 2018). The research took place in the English Education Department at a private university in Jakarta during the 2024–2025 academic year, involving nine sixth-semester undergraduate students selected through purposive sampling. Participants were chosen based on their active engagement in a course that integrated e-portfolio-based learning, their willingness to participate in interviews, and their ability to reflect on their learning in English.

Data were collected over eight weeks through classroom observations, semi-structured interviews, and document analysis of students' e-portfolios. Observations were conducted non-participatively to capture students' engagement with digital tools, their patterns of collaboration, and their reflective behaviors during e-portfolio activities. Semi-structured interviews, lasting 30–45 minutes each, were used to explore students' perceptions on how e-portfolio-based learning influenced their digital literacy, reflective practices, and lifelong learning attitudes. These interviews enabled students to describe how they evaluated digital information, organized their digital workspaces, and sustained motivation throughout the learning process. Document analysis was conducted to examine students' digital artifacts—including reflective journals, uploaded assignments, and e-portfolio pages—which provided concrete evidence of their technical, cognitive, and socio-emotional growth.

The data collection procedures began with a preparation phase in which the researcher coordinated with the course lecturer to integrate e-portfolio tasks into weekly learning activities. Students were briefed on ethical considerations, including confidentiality and voluntary participation. During the implementation phase, students created and gradually developed their e-portfolios using platforms such as Google Sites, Padlet, or Mahara, responding to weekly reflection prompts and documenting their developing digital literacy skills. In the final phase, interviews were conducted and e-portfolios were reviewed to obtain a comprehensive understanding of students' learning journeys.

All data—including observation notes, interview transcripts, and e-portfolio artifacts—were analyzed using Braun & Clarke (2006) thematic analysis. The analysis began with data familiarization, followed by systematic coding to identify elements related to digital literacy

development, reflective learning, and learner autonomy. Codes were organized into potential themes, which were then reviewed, refined, and interpreted in relation to the study's theoretical frameworks. Final themes were defined to capture the depth and complexity of students' experiences.

To ensure trustworthiness, the study employed several strategies. Credibility was enhanced through triangulation of data sources—observations, interviews, and documents—as well as member checking, allowing participants to verify the accuracy of interpretations. Transferability was achieved by providing detailed descriptions of the research context and participant characteristics. Dependability was maintained by documenting an audit trail of research activities, including data collection timelines and coding procedures. Confirmability was strengthened through reflexive journaling to ensure that findings were grounded in participants' experiences rather than researcher bias.

## Findings and Discussion

### Development of Digital Literacy

Findings indicate that e-portfolio-based learning significantly enhanced students' digital literacy in three dimensions:

1. **Technical skills**, demonstrated through improved proficiency in navigating digital platforms and integrating multimedia;
2. **Cognitive skills**, reflected in students' growing ability to evaluate digital information critically, synthesize content, and curate artifacts; and
3. **Socio-emotional skills**, seen in their ethical digital behaviors, online collaboration, and responsible communication.

These results align with previous studies emphasizing the multidimensional nature of digital literacy (Karimah et al., 2023; Pospíšilová & Rohlíková, 2023).

### Fostering Lifelong Learning Characteristics

E-portfolios encouraged students to become autonomous learners by enabling them to take responsibility for organizing, documenting, and reflecting on their progress. Students reported increased creativity due to opportunities to personalize layouts, integrate multimedia, and produce visually engaging content. The process also strengthened self-regulated learning and motivation, supporting key lifelong learning attributes identified by (Candy, 2002). These findings are reinforced by existing literature showing that e-portfolios cultivate reflective and independent learning habits (Butakor, 2024; Chisango, 2024)

Despite these benefits, students faced challenges such as initial digital anxiety and time management. Nevertheless, their overall engagement and progress demonstrate that e-portfolio-based learning is both feasible and beneficial in EFL contexts.

## Conclusions

This study concludes that e-portfolio-based learning is an effective pedagogical approach for developing digital literacy and fostering lifelong learning in EFL classrooms. Students demonstrated notable improvement in technical, cognitive, and socio-emotional aspects of digital literacy. They also displayed enhanced autonomy, creativity, and sustained motivation—traits essential for lifelong learning. Although challenges such as limited digital confidence and time constraints were present, the overall impact of e-portfolio-based learning was positive. These findings highlight the importance of integrating reflective digital practices into language education to prepare students for continuous learning in a rapidly evolving digital world.

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