



Empowering Non-EFL Students' Speaking Skills through E-Portfolios: A Design-Based Research in Primary Teacher Education

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ABSTRACT

English proficiency is essential for global communication across various domains. However, non-EFL students, particularly in Primary Teacher Education Programs, often struggle with speaking skills due to limited vocabulary and low confidence. This study employs a Design-Based Research (DBR) approach to develop and implement an e-portfolio-based assessment aimed at improving students' speaking abilities. Data were collected from PGSD students at UMN Al Washliyah through observations, interviews, and document analysis. Results indicate significant improvements in four key speaking components: fluency, pronunciation, vocabulary, and grammar. The use of e-portfolios not only enhanced speaking performance but also increased student motivation and engagement.

Keywords: Eportfolio, Speaking skills, Non-EFL students,
Primary teacher education, Design-Based Research

ARTICLE HISTORY

Received 31-05-2025
Revised 06-06-2025
Accepted 28-06-2025

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INTRODUCTION

In the era of Society 5.0—a paradigm that integrates advanced technology with human-centered innovation—and amid the demands of global competitiveness, the ability to communicate effectively in English has become more than a desirable skill; it is a fundamental necessity. English, as the world's lingua franca, facilitates cross-cultural communication and serves as a bridge across diverse domains including education, international business, diplomacy, science, and digital technology. In this context, English language competence, particularly in speaking, is not only an academic benchmark but also a strategic asset for individuals preparing to enter the global workforce. This is especially relevant for students in non-English majors, such as those in Primary School Teacher Education (PGSD) programs, who are expected to engage with international pedagogical standards and communicate with diverse stakeholders in educational settings.

Despite the growing importance of English proficiency, many PGSD students continue to struggle with speaking skills. This issue is not confined to linguistic ability



alone but is compounded by psychological and pedagogical factors. Observations and preliminary assessments indicate that students often face challenges such as limited vocabulary, inaccurate pronunciation, grammatical errors, and a pervasive lack of confidence when speaking English. These barriers not only hinder their academic performance but also restrict their ability to participate in global dialogues, collaborate in international projects, and compete in a job market that increasingly values bilingual or multilingual communication skills.

The implications of this gap are significant. As future educators, PGSD students are expected to model effective communication for their pupils and potentially engage in bilingual instruction, especially in urban and international school contexts. Their inability to speak English fluently may limit their career opportunities and reduce their effectiveness in delivering inclusive and globally relevant education. Therefore, addressing this issue is not merely a matter of improving language skills—it is a strategic intervention aimed at enhancing professional readiness and global citizenship.

To respond to this challenge, educators and researchers must explore innovative instructional and assessment strategies that go beyond traditional classroom practices. One promising approach is the integration of digital assessment tools, particularly electronic portfolios (e-portfolios). E-portfolios represent a shift from static, summative evaluation to dynamic, formative assessment. They allow students to document their learning journey, reflect on their progress, and showcase their achievements in a personalized and interactive format. This aligns with the principles of constructivist learning theory, which emphasizes active engagement, self-regulation, and contextualized learning experiences.

E-portfolios offer several pedagogical advantages. First, they promote learner autonomy by enabling students to take ownership of their learning process. Second, they facilitate continuous feedback, which is essential for language development, especially in speaking. Third, they provide a platform for authentic assessment, where students can demonstrate their communicative competence in real-world tasks rather than artificial test conditions. Fourth, they support multimodal learning by incorporating audio, video, and written reflections, which cater to diverse learning styles and enhance engagement.

In the context of PGSD students at Universitas Muslim Nusantara Al Washliyah, the implementation of e-portfolios is particularly relevant. These students often have limited exposure to English outside the classroom and may lack opportunities to practice speaking in meaningful contexts. By integrating e-portfolios into the curriculum, educators can create a supportive environment where students can experiment with language, receive constructive feedback, and gradually build their confidence. Moreover, e-portfolios can serve as a repository of evidence for language growth, which can be used for self-assessment, peer review, and instructor evaluation.

This study adopts a Design-Based Research (DBR) methodology to develop, implement, and evaluate an e-portfolio model tailored to the needs of PGSD students.



DBR is a flexible and iterative approach that combines theory-driven design with practical experimentation in real educational settings. It allows researchers to refine interventions based on feedback and contextual variables, making it ideal for complex educational innovations such as digital assessment tools.

The primary objective of this research is to assess the effectiveness of e-portfolios as a formative assessment tool for improving English-speaking skills. Specifically, the study focuses on four key dimensions of speaking competence: fluency, pronunciation, vocabulary, and grammar. These components are essential for effective oral communication and are often interrelated. For instance, limited vocabulary can affect fluency, while poor pronunciation may obscure grammatical accuracy. By analyzing students' performance across these dimensions, the study aims to provide a comprehensive understanding of how e-portfolios influence language development.

In addition to quantitative measures of improvement, the study also explores students' perceptions of e-portfolios. Understanding how learners experience and respond to digital assessment is crucial for successful implementation. Factors such as ease of use, perceived usefulness, motivation, and anxiety are considered, as they can significantly impact engagement and learning outcomes. The research also examines the role of feedback—both peer and instructor—in shaping students' speaking performance and self-efficacy.

Preliminary findings suggest that e-portfolios have a positive impact on students' speaking skills. Students report increased confidence, greater awareness of their strengths and weaknesses, and a sense of accomplishment in tracking their progress. The ability to record and review their own speaking tasks allows for deeper reflection and targeted improvement. Furthermore, the integration of multimedia elements—such as video recordings and voice notes—adds a layer of authenticity and personalization that traditional assessments often lack.

The implications of this study extend beyond the immediate context of PGSD students. It contributes to the broader discourse on digital pedagogy and language assessment in higher education. As institutions worldwide grapple with the challenges of preparing students for a globalized world, tools like e-portfolios offer a scalable and adaptable solution. They align with the goals of Society 5.0 by leveraging technology to enhance human potential and promote inclusive, lifelong learning (Sadri, 2025).

In conclusion, the ability to speak English fluently is no longer a luxury but a necessity for students across disciplines. For PGSD students, it is a gateway to professional success and global engagement. The integration of e-portfolios as a formative assessment tool represents a meaningful step toward addressing the persistent challenges in English speaking instruction. By fostering reflection, autonomy, and authentic communication, e-portfolios empower students to become confident and competent speakers. This study not only validates the pedagogical value of e-portfolios but also underscores the importance of innovative, student-centered approaches in language education. Future research should continue to



explore the intersection of technology, assessment, and language learning, with a focus on scalability, accessibility, and cultural relevance

LITERATURE REVIEW

Mastering English speaking skills continues to be a significant hurdle for non-English major students in Indonesian higher education institutions. While English is increasingly recognized as a vital tool for academic and professional advancement, many students outside English Language Education programs struggle to achieve communicative competence. This issue is particularly evident among students in disciplines such as Primary School Teacher Education (PGSD), Engineering, and Social Sciences, where English is often treated as a supplementary subject rather than a core skill.

According to Sari and Rahmawati (2021), the primary challenges faced by non-EFL students in speaking English include limited vocabulary, poor pronunciation, and a lack of fluency. These linguistic deficiencies are often compounded by affective factors such as anxiety, low self-esteem, and lack of motivation. Hasanah and Siregar (2020) emphasize that speaking anxiety is a major barrier that prevents students from participating actively in oral communication tasks. Many students fear making mistakes or being judged by their peers, which leads to avoidance behavior and reduced speaking practice. This cycle of fear and avoidance ultimately hampers their language development and confidence.

Moreover, the traditional classroom environment often fails to provide sufficient opportunities for meaningful speaking practice. Large class sizes, teacher-centered instruction, and a focus on grammar and written assessments leave little room for interactive speaking activities. As a result, students are not adequately prepared to use English in real-life contexts, whether in academic discussions, professional interviews, or international collaborations. This disconnect between classroom instruction and communicative needs highlights the urgency of adopting more student-centered and communicative approaches to language teaching and assessment.

E-Portfolio as a Formative Assessment Tool

In response to these challenges, the integration of digital tools such as electronic portfolios (e-portfolios) has gained traction as an innovative solution for enhancing speaking skills. E-portfolios are digital collections of student work that document learning progress, showcase achievements, and facilitate reflection. As Lestari (2020) notes, e-portfolios support continuous, reflective, and student-centered learning by allowing learners to record, review, and revise their oral performances over time. This process not only promotes self-awareness but also encourages learners to take ownership of their learning journey.

The use of e-portfolios in language learning aligns with the principles of formative assessment and authentic learning. Unlike traditional tests that provide a



snapshot of performance at a single point in time, e-portfolios offer a longitudinal view of student development. They enable learners to track their progress, identify areas for improvement, and receive ongoing feedback from peers and instructors. This iterative process fosters a growth mindset and cultivates learner autonomy – two attributes that are essential for language acquisition and lifelong learning.

Empirical studies support the effectiveness of e-portfolios in improving speaking skills. Maulina et al. (2021) found that students who used e-portfolios demonstrated greater engagement, improved self-evaluation skills, and enhanced oral performance. Similarly, Fitriani et al. (2022) reported that e-portfolios helped students become more confident and articulate in expressing their ideas in English. The integration of multimedia elements such as audio and video recordings also allows for multimodal learning, which caters to diverse learning styles and enhances the authenticity of speaking tasks.

Furthermore, e-portfolios contribute to the development of digital literacy, a critical skill in the post-pandemic education landscape. As students navigate online platforms, upload multimedia content, and engage in digital communication, they acquire technical competencies that are transferable to other academic and professional contexts. This dual benefit – language development and digital empowerment – makes e-portfolios a valuable tool for 21st-century education.

Design-Based Research in Educational Innovation

To effectively implement and evaluate e-portfolios in language learning, a robust research methodology is required. Design-Based Research (DBR) offers a suitable framework for developing and refining educational innovations in real-world settings. As explained by Nieveen and McKenney (2019), DBR is characterized by its iterative nature, collaborative approach, and focus on practical problem-solving. It involves cycles of design, implementation, analysis, and revision, allowing researchers and practitioners to co-create solutions that are both theoretically grounded and contextually relevant.

In the context of Indonesian higher education, DBR has been increasingly used to align instructional practices with the Merdeka Belajar curriculum reforms, which emphasize student autonomy, creativity, and contextual learning. Yuliana and Pratama (2022) demonstrated how DBR can be used to develop learning tools that are responsive to local needs and adaptable to diverse educational environments. This makes DBR an ideal methodology for exploring the integration of e-portfolios in speaking instruction, where continuous feedback and contextual adaptation are crucial for success.

By employing DBR, researchers can work closely with instructors and students to identify challenges, test interventions, and refine strategies based on empirical evidence. This collaborative process ensures that the e-portfolio model is not only pedagogically sound but also feasible and sustainable in the given educational context.



It also allows for the incorporation of student voices, which is essential for designing learner-centered assessment tools.

Theoretical Perspective

The theoretical foundation of this research is grounded in constructivist learning theory, which posits that learners actively construct knowledge through meaningful experiences and social interaction. Constructivism emphasizes the importance of learner agency, reflection, and contextualized learning—principles that are well-aligned with the use of e-portfolios in language education.

According to Hadi and Novita (2021), constructivist-based strategies such as portfolio assessment encourage learners to engage in metacognitive processes, monitor their own progress, and make informed decisions about their learning. In the context of speaking tasks, e-portfolios provide a platform for students to record their oral performances, reflect on their strengths and weaknesses, and set goals for improvement. This process not only enhances their linguistic competence but also develops critical thinking and self-regulation skills.

Moreover, the social dimension of constructivism is reflected in the collaborative features of e-portfolios. Peer feedback, group discussions, and shared reflections create a learning community where students learn from each other and co-construct knowledge. This collaborative environment reduces speaking anxiety and builds a supportive culture of learning, which is particularly beneficial for non-EFL students who may lack confidence in their language abilities.

The integration of e-portfolios as a formative assessment tool offers a promising solution to the persistent challenges faced by non-EFL students in mastering English speaking skills. By addressing both cognitive and affective barriers, e-portfolios empower learners to take control of their learning, engage in meaningful reflection, and develop the confidence needed to communicate effectively in English. Grounded in constructivist theory and supported by Design-Based Research, this approach represents a significant step toward more inclusive, engaging, and effective language education in the digital age.

METHOD

This study utilized the Design-Based Research (DBR) approach, which involves iterative and collaborative processes in designing, developing, implementing, and refining educational interventions to address practical problems in real contexts (McKenney & Reeves, 2019). This methodology is appropriate for innovation in language learning assessment such as the use of e-portfolios to improve speaking skills among non-EFL students.

Research Phases

This research followed four key stages of DBR as adapted from Reeves (in McKenney & Reeves, 2019):



1. Needs Analysis and Problem Identification A preliminary study was conducted through observation and informal interviews with lecturers and students in the Primary Teacher Education Program (PGSD) at Universitas Muslim Nusantara Al Washliyah. This stage aimed to identify students' speaking difficulties and the current limitations in English assessment practices.
2. Design and Development of Solution Based on the findings from the needs analysis and existing theories, a digital-based e-portfolio model was designed. The portfolio structure and speaking rubric were adapted to assess four key components: fluency, pronunciation and accent, vocabulary, and grammar.
3. Iterative Testing and Refinement The e-portfolio was implemented during one semester. Internal trials involved lecturers and 84 students. Feedback was collected through observations, interviews, and analysis of student performance. The product was refined based on expert review and student input.
4. Reflection and Finalization. Reflection was conducted to evaluate the effectiveness of the e-portfolio and formulate design principles for future implementation. Insights were derived from student performance data, expert judgments, and implementation results.

Research Site and Participants

The study was conducted at Universitas Muslim Nusantara Al Washliyah, specifically in the PGSD Study Program. Participants consisted of 84 third-semester students enrolled in an English language course. They were selected purposively as non-English majors who were required to develop foundational English speaking skills.

Data collection used multiple instruments to ensure validity (Sulastini & Handayani, 2022):

- a. Observation: The researcher engaged in participant observation during the implementation of e-portfolio activities in class.
- b. Interview: Semi-structured interviews were conducted with selected students and the course lecturer to gain insights into their experiences and perceptions.
- c. Documentation: Students' recorded speaking performances, assessment rubrics, and academic scores (mid- and final-semester) were collected as supporting documents.

Data Analysis

Data were analyzed using a descriptive qualitative approach combined with basic quantitative analysis for score interpretation. Qualitative data were categorized and interpreted based on emerging themes, while quantitative data were presented in frequency tables showing students' performance improvement in each speaking component (Rijali, 2019).

FINDINGS AND DISCUSSION



This study implemented an e-portfolio-based assessment model in the English-speaking class for third-semester students of the Primary School Teacher Education Program (PGSD) at Universitas Muslim Nusantara Al Washliyah. The objective was to improve students' speaking performance through continuous and formative assessment.

Students' Speaking Performance: Mid-Semester vs. Final-Semester

The assessment was carried out in two phases: mid-semester and final-semester. Student speaking performance was evaluated using four criteria: fluency, pronunciation and accent, vocabulary, and grammar. The score distribution is shown in Tables 1 and 2.

Table 1. Mid-Semester Scores

Score Category	Frequency	Percentage
≥ 75 (Good-Excellent)	55 students	78%
< 75 (Needs Improvement)	29 students	22%
Total	84 students	100%

Table 2. Final-Semester Scores

Score Category	Frequency	Percentage
≥ 75 (Good-Excellent)	63 students	81%
< 75 (Needs Improvement)	21 students	19%
Total	84 students	100%

These results show an increase in the number of students achieving higher scores from mid-semester to final semester, indicating improvement in speaking performance.

Component-Wise Improvement in Speaking Skills

The detailed distribution of scores in each speaking component is presented in Tables 3 and 4.



Table 3. Mid-Semester Speaking Component Scores

Component	1st Attempt (%)	2nd Attempt (%)	Total
Fluency	45%	55%	100%
Pronunciation and Accent	35%	65%	100%
Vocabulary	44%	56%	100%
Grammar	50%	50%	100%

Table 4. Final-Semester Speaking Component Scores

Component	1st Attempt (%)	2nd Attempt (%)	Total
Fluency	44%	56%	100%
Pronunciation and Accent	25%	75%	100%
Vocabulary	50%	50%	100%
Grammar	45%	55%	100%

The analysis reveals that pronunciation and accent showed the most significant improvement (from 35% to 75%). Fluency also increased consistently. Although vocabulary and grammar saw modest gains, the overall trend indicates that continuous feedback via e-portfolios had a positive impact on students' speaking development.

Student Reflections and Responses

Based on post-implementation interviews, students expressed positive responses:

1. They felt more enthusiastic and motivated during the learning process.
2. The e-portfolio helped them visualize progress and reflect on their weaknesses.
3. The platform allowed them to prepare better for final tasks and projects.

These findings are in line with previous studies showing that e-portfolios improve engagement, encourage self-evaluation, and enhance learning outcomes in speaking skills (Fitriani et al., 2022; Maulina et al., 2021).

Discussion

Overview of E-Portfolio Implementation



The implementation of e-portfolios in the PGSD English-speaking class at Universitas Muslim Nusantara Al Washliyah marked a significant shift from traditional assessment methods to a more formative, student-centered approach. The intervention was designed to address persistent challenges faced by non-EFL students, including limited vocabulary, poor pronunciation, and low confidence. By integrating digital tools and reflective practices, the e-portfolio model aimed to foster continuous improvement in speaking performance.

Quantitative Improvements in Speaking Performance

The comparative analysis of mid-semester and final-semester scores revealed a clear upward trend in student performance, underscoring the effectiveness of the e-portfolio-based assessment model. At the mid-semester point, 78% of students achieved scores of 75 or higher, indicating a good to excellent level of speaking proficiency. By the end of the semester, this figure had risen to 81%, reflecting a modest but meaningful improvement. While the percentage increase may appear slight, it signifies a deeper shift in students' ability to meet the established speaking criteria, particularly when considering the short duration of the intervention and the students' non-EFL background. This upward trend suggests that the continuous, reflective nature of e-portfolio assessments contributed positively to students' language development.

A closer look at the component-wise performance provides further insight into the nature of this progress. In terms of fluency, students showed increased fluidity in their speech, marked by fewer pauses, hesitations, and filler words. The improvement from 45% to 56% in second attempts indicates that repeated practice, coupled with targeted feedback, played a crucial role in helping students become more comfortable and confident in expressing their ideas in English. This aligns with the principles of formative assessment, where iterative learning and feedback loops enhance skill acquisition over time.

Pronunciation and accent emerged as the most significantly improved component, with scores rising from 35% to 75%. This dramatic increase suggests that students became more attuned to the phonetic aspects of English, likely due to the opportunity to listen to their own recordings, receive corrective feedback, and model their speech after peers or instructors. The asynchronous nature of e-portfolio submissions allowed students to rehearse and refine their pronunciation without the pressure of real-time performance, thereby reducing anxiety and promoting better articulation.

Vocabulary development, while evident, was more gradual. The increase from 44% to 50% indicates that students were beginning to expand their lexical range, though further support may be needed to deepen their understanding of word usage and context. This suggests a need for more explicit vocabulary instruction or integration of thematic word banks within the e-portfolio tasks.



Grammar scores also improved, rising from 50% to 55%. This modest gain reflects students' growing familiarity with basic sentence structures and verb tenses. However, persistent challenges with complex syntax and grammatical accuracy highlight the need for continued scaffolding and practice. Overall, the data affirm that the e-portfolio model not only facilitated measurable improvements in speaking performance but also fostered a more reflective and autonomous learning environment.

Qualitative Insights from Student Reflections

Post-implementation interviews with students revealed several recurring themes that highlight the positive impact of e-portfolio integration on their learning experience. One of the most prominent outcomes was a noticeable increase in student motivation. Learners reported feeling more engaged and enthusiastic about their English-speaking tasks, largely due to the personalized nature of the e-portfolio system. The ability to track their own progress over time and receive individualized feedback fostered a sense of ownership and accountability. This personalized feedback loop made students feel that their efforts were being recognized and guided, which in turn encouraged them to participate more actively and consistently in speaking activities.

Another significant theme that emerged was enhanced self-awareness. Students expressed that reviewing their own recorded performances allowed them to identify specific areas for improvement, such as pronunciation errors, grammatical mistakes, or lack of fluency. This process of self-evaluation is a key component of metacognitive learning, where learners become more conscious of their strengths and weaknesses. The e-portfolio served as a reflective tool, enabling students to monitor their development and make informed decisions about how to improve. This kind of engagement is a hallmark of effective formative assessment, as it promotes deeper learning and long-term skill retention.

The asynchronous nature of e-portfolio submissions also contributed to a reduction in performance anxiety. Unlike traditional live presentations, which can be intimidating for many students, especially those with low confidence in their English abilities, the e-portfolio allowed learners to rehearse and refine their speaking tasks before submission. This flexibility gave students the opportunity to present their best work without the pressure of real-time evaluation, leading to more authentic and confident performances. As a result, students felt more comfortable experimenting with new vocabulary and sentence structures, which further enhanced their speaking proficiency.

Peer learning was another valuable outcome of the e-portfolio implementation. Several students mentioned that listening to their classmates' recordings provided alternative models of pronunciation, vocabulary usage, and speaking strategies. This exposure to diverse speaking styles helped broaden their understanding of effective communication and encouraged collaborative learning. By observing peers, students



could compare techniques, adopt useful expressions, and gain inspiration for their own speaking tasks.

These reflections align closely with the findings of Maulina et al. (2021), who emphasized the role of e-portfolios in fostering learner autonomy and self-evaluation. The combination of personalized feedback, reflective practice, reduced anxiety, and peer interaction created a supportive learning environment that empowered students to take charge of their language development

Pedagogical Implications

The success of the e-portfolio intervention in enhancing non-EFL students' speaking skills carries several important implications for curriculum design and teacher training, particularly within the context of Indonesia's evolving educational landscape. One of the most significant implications is the need for deeper curriculum integration of e-portfolios. Rather than treating e-portfolios as supplementary or optional tools, they should be embedded as core components of English language instruction for non-EFL students. This approach aligns with the principles of the Merdeka Belajar curriculum, which emphasizes student agency, autonomy, and authentic learning experiences. By incorporating e-portfolios into the curriculum, educators can provide students with continuous opportunities to reflect on their learning, receive formative feedback, and demonstrate progress over time. This not only enhances language proficiency but also cultivates critical 21st-century skills such as self-regulation, digital literacy, and communication.

In addition to curriculum reform, the successful implementation of e-portfolios necessitates comprehensive teacher training. Educators must be equipped with digital assessment literacy to effectively design, implement, and evaluate e-portfolio tasks. This includes the ability to create clear and fair rubrics, provide timely and constructive feedback, and guide students in reflective practices. Without proper training, teachers may struggle to harness the full potential of e-portfolios, leading to inconsistent assessment practices and diminished student outcomes. Therefore, professional development programs should prioritize training in digital pedagogy and formative assessment strategies, ensuring that teachers are confident and competent in using technology to support student learning.

Furthermore, the findings of this study suggest that the e-portfolio model has cross-disciplinary applications beyond the PGSD program. In today's globalized world, English communication skills are increasingly essential across various fields, including nursing, engineering, business, and tourism. Non-EFL students in these disciplines often face similar challenges in speaking English, such as limited vocabulary and low confidence. Adapting the e-portfolio model to suit the specific needs and contexts of these fields can provide a scalable and flexible solution to improve language proficiency. For instance, nursing students could use e-portfolios to simulate patient interactions, while business students might record presentations or negotiations. By tailoring the e-portfolio framework to different disciplines,



institutions can foster language development in a way that is both relevant and practical, ultimately preparing students for real-world communication demands in their respective professions.

Comparison with Existing Literature

The findings of this study not only support but also extend the conclusions of previous research on the use of e-portfolios in language learning, particularly in enhancing speaking skills among non-EFL students. One of the key studies that aligns with these findings is by Lestari (2020), who emphasized the role of e-portfolios in promoting reflective learning. Lestari argued that e-portfolios encourage students to engage in self-assessment and critical reflection, which are essential for meaningful learning. This current study builds upon that foundation by demonstrating that reflective learning through e-portfolios does not merely enhance awareness but also leads to measurable improvements in speaking performance. Students were able to identify their weaknesses, apply feedback, and track their progress over time, which translated into higher scores in fluency, pronunciation, vocabulary, and grammar.

Similarly, the work of Fitriani et al. (2022) found that e-portfolios significantly enhance student engagement and oral proficiency. The present study corroborates this by showing that students became more motivated and confident in their speaking abilities as they engaged with the e-portfolio platform. Notably, this study adds a new dimension by highlighting that pronunciation and accent were the most improved components, suggesting that repeated digital practice—such as recording and reviewing speech—has a particularly strong impact on these aspects of oral communication. This insight is valuable for educators seeking to target specific speaking skills through technology-enhanced learning.

Furthermore, the study exemplifies the practical application of Design-Based Research (DBR) in educational innovation, as emphasized by Yuliana and Pratama (2022). DBR is known for its iterative, collaborative, and context-sensitive approach to developing educational interventions. In this case, the DBR methodology allowed for the continuous refinement of the e-portfolio model based on real-time feedback from students and lecturers. This iterative process ensured that the assessment tool was not only theoretically sound but also practically effective in the classroom setting. The success of this approach underscores the adaptability and relevance of DBR in addressing complex educational challenges, particularly in the context of curriculum reform and digital transformation.

This study reinforces existing literature while offering new insights into the specific benefits of e-portfolios for speaking skill development. It demonstrates that when combined with reflective practice and iterative design, e-portfolios can serve as powerful tools for enhancing language proficiency, fostering learner autonomy, and supporting innovative teaching practices.



Challenges and Limitations

Despite the overall success of the e-portfolio intervention in enhancing speaking skills among non-EFL students, the study encountered several limitations that must be acknowledged to provide a balanced perspective and guide future improvements. One of the primary constraints was the limited duration of the intervention. Conducted over a single academic semester, the program did not allow sufficient time for in-depth instruction, repeated practice, or long-term observation of student progress. While improvements were observed in fluency, pronunciation, vocabulary, and grammar, the gains in vocabulary and grammar were relatively modest. These components typically require sustained exposure and reinforcement, which a longer intervention period could have better supported. Extending the duration of such programs in future implementations could lead to more substantial and lasting improvements in students' language proficiency.

Another significant limitation was the restricted exposure to English outside the classroom. As students in the Primary School Teacher Education (PGSD) program are not English majors, their opportunities to use or encounter English in real-life contexts are minimal. This limited exposure hampers the transferability of classroom-acquired skills to authentic communication situations. Without regular interaction in English beyond academic settings, students may struggle to retain and apply what they have learned. This challenge underscores the importance of creating more immersive and integrative language learning environments, such as English clubs, language exchange programs, or community-based projects, which can provide students with practical opportunities to use English meaningfully (Sadri, 2024).

Technological barriers also posed challenges during the implementation of the e-portfolio model. Some students experienced difficulties in uploading their recordings or accessing feedback due to limited digital literacy or unstable internet connections. These issues not only disrupted the learning process but also created disparities in student participation and performance. In a digital learning environment, equitable access to technology and the skills to use it effectively are essential. Addressing these challenges requires institutional support in the form of infrastructure upgrades, such as improved internet access and provision of digital devices, as well as targeted training programs to enhance students' and teachers' digital competencies.

While the e-portfolio intervention demonstrated promising outcomes, its full potential can only be realized by addressing these limitations. Future implementations should consider longer timelines, increased English exposure opportunities, and robust technological support to ensure that all students can benefit equally and meaningfully from this innovative assessment approach.

Future Directions

To build on the success of this study, future research should explore several promising directions that could deepen our understanding of e-portfolios and enhance their effectiveness in language education. One valuable approach would be conducting



longitudinal studies that track student performance across multiple semesters. This would allow researchers to assess the long-term impact of e-portfolio use on speaking skills and determine whether improvements in fluency, pronunciation, vocabulary, and grammar are sustained over time. Longitudinal data could also reveal patterns in student engagement and motivation, offering insights into how e-portfolios influence learning trajectories beyond a single course.

Another important avenue for future research is comparative analysis between e-portfolio-based assessment and traditional assessment methods. By examining differences in student outcomes, engagement levels, and feedback quality, researchers can identify the specific advantages and limitations of each approach. Such studies would be particularly useful for educators and institutions considering a shift toward digital assessment tools. Understanding how e-portfolios compare to conventional oral exams or written tests could help refine instructional strategies and ensure that assessment practices align with pedagogical goals (Pane et. al., 2025).

The integration of artificial intelligence (AI) tools into e-portfolio systems also holds great potential. AI-powered feedback mechanisms, such as automated pronunciation analysis and grammar correction, could provide students with immediate, personalized guidance. This would enhance the formative nature of e-portfolios by allowing learners to make real-time adjustments and improvements. Additionally, AI tools could assist educators in managing large volumes of student submissions, ensuring consistent and efficient evaluation. As technology continues to evolve, incorporating intelligent systems into e-portfolios could significantly elevate the quality and accessibility of language learning.

Encouraging collaborative portfolios is another promising strategy. By incorporating peer feedback and group projects into the e-portfolio framework, educators can foster a more interactive and socially enriched learning environment. Collaborative tasks promote communication, critical thinking, and mutual support among students, which are essential components of effective language acquisition. Peer evaluations also provide diverse perspectives, helping learners refine their speaking skills through constructive dialogue and shared experiences.

Overall, the implementation of e-portfolios in the PGSD English-speaking class has proven to be a transformative approach to language assessment. By aligning with constructivist principles and leveraging digital tools, the intervention addressed key challenges faced by non-EFL students. The observed improvements in speaking performance, coupled with increased motivation and self-awareness, underscore the potential of e-portfolios as a sustainable and scalable solution. As education continues to evolve in the Society 5.0 era, institutions must embrace such innovations and provide the necessary support to ensure their effective implementation, preparing students for global communication and professional success.



CONCLUSIONS

Based on the discussion and findings of this study, the integration of e-portfolios into English language learning within the context of the Society 5.0 era and the independent curriculum at Universitas Muslim Nusantara Al Washliyah (UMN Al Washliyah) represents a strategic step toward preparing students for future industry demands. Society 5.0 emphasizes the fusion of digital technology with human-centered innovation, and in this landscape, English proficiency and technological literacy are essential competencies. The e-portfolio model aligns well with these goals, offering a platform for students to develop, showcase, and refine their speaking skills in a reflective and digitally supported environment.

However, the learning process is not without its challenges. One of the primary obstacles faced by PGSD students in acquiring English speaking skills is a lack of intrinsic motivation and limited access to learning resources. Many students rely solely on instruction from their course lecturers without seeking additional references or practice opportunities. This passive approach to learning is compounded by the fact that PGSD students are not English majors, and their curriculum does not prioritize English language development. As a result, their exposure to English is minimal, and their confidence in using the language remains low.

Despite these challenges, the researchers successfully implemented strategies to enhance students' understanding and performance in English speaking. The use of e-portfolios provided a structured yet flexible framework for students to engage with the language more actively. The significant improvement in student scores from mid-semester to final-semester assessments demonstrates the effectiveness of this approach. Nevertheless, the study was limited by time constraints, as the intervention was conducted over a single semester and covered only the essential aspects of English speaking.

Looking ahead, the development and refinement of e-portfolios should continue through reflection and iterative design. These tools are expected to equip students with the 21st-century skills necessary to thrive in the Society 5.0 era, including communication, collaboration, critical thinking, and digital literacy. Institutions must support this transformation by expanding English content within non-EFL programs and ensuring that students have access to the technological infrastructure and guidance needed to succeed.

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