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From struggles to strategies: Indonesian students' use of e-portfolios in public speaking courses through the lens of self-regulated learning and sociocultural theory

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The implementation of e-portfolios in education has gained recognition as both an assessment and a learning tool. This descriptive qualitative study examines the challenges faced by students in creating electronic portfolios (e-portfolio) using Google Sites, consisting of speech drafts, recorded presentations, reflection notes, and peer feedback, and the strategies they employed to overcome these challenges. This study involved 22 English Education students enrolled in a public speaking course at a university in Yogyakarta, Indonesia, including eight participants who were interviewed. Data were collected through observations, semi-structured interviews, and documentation. The findings highlight three major challenges: technical barriers (digital skills and internet access), time management difficulties, and creativity-related issues. These findings are interpreted through the lenses of self-regulated learning theory and sociocultural theory, which explain how learners manage their own learning and benefit from peer and lecturer support. To address these challenges, students employed peer collaboration, self-directed learning strategies, and time management techniques. The study offers insights for designing e-portfolio-based speaking courses in similar EFL contexts by systematically addressing obstacles while fostering learner autonomy, creativity, and responsibility. Practically, it provides guidance for lecturers to scaffold e-portfolio tasks and integrate peer collaboration effectively. Methodologically, it demonstrates the application of thematic analysis in e-portfolio research. Theoretically, it links e-portfolio use with self-regulated learning and sociocultural theory.

Keywords: e-portfolio development, public speaking, student challenges, learning strategies, digital tool

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INTRODUCTION

Portfolios were originally conceived as a way to showcase a selection of the best work for a specific audience. This artistic concept shifted during the 1980s, and portfolios are now widely used as educational tools to document students' progress, processes, competencies, and accomplishments over time (Bone et al., 2020). Paper portfolios gave way to electronic versions in the 1990s, while local networks were gradually replaced by the internet. The rapid growth of technologies like websites, blogs, Wikipedia, and Facebook made it feasible to develop multi-device e-portfolios, ensuring both efficacy and efficiency. In their most common

form, e-portfolios are digital adaptations of traditional paper portfolios (Scully et al., 2018). More broadly, e-portfolios can be defined as collections of web-based learning artifacts, such as documents, multimedia projects, speeches, dan images, accompanied by reflections that emphasize learning and its development (Ciesielkiewicz, 2019). The most widely accepted definition states that an e-portfolio is a collection of items and digital artifacts selected and managed by their owners (Isiyaku et al., 2018).

E-portfolios appear to be an effective tool for English education majors, supporting their learning across the four skills of speaking, writing, listening, and reading (Aulia et al., 2018). For instance, students can upload voice recordings and videos for listening classes, store reading materials for reading classes, preserve written assignments for writing classes, and record oral presentations in speaking classes. Many students experience anxiety in speaking classes due to limited practice opportunities, the complexity of the material, or shyness when responding in English. Audio and video recordings provide a promising strategy to increase their courage and self-confidence. Through e-portfolios, students also have the chance to create personal webpages, reflect on their learning, and document their process. They can monitor and assess their own development, which helps foster fluency in English. Additionally, lecturers can easily access student work via to e-portfolios integrated with information and communication technologies, provide timely feedback, and allow students to achieve this feedback for future reference.

Despite their potential, the implementation of e-portfolios in teaching and learning has proven to be more complex than initially anticipated. Although researchers and educators widely acknowledge the benefits of e-portfolios as both assessment and learning tools, numerous barriers hinder their successful adoption. Bolliger and Shepherd (2010) emphasize their potential, yet practical applications reveal persistent challenges. According to Zheng (2022), these include the need for robust technological infrastructure, sufficient institutional funding, and safeguards for user privacy. Additionally, varying levels of technological proficiency among educators and students complicate implementation. Overcoming these challenges require careful planning, adequate resource allocation, and targeted training to ensure the effective use. In the Indonesian context, students in public speaking courses often face difficulties in oral communication due to limited practice opportunities, fear of making mistakes, and low confidence. These challenges can negatively affect their learning outcomes and overall engagement.

E-portfolio systems may be robust and controllable, but their underlying design model can be constrained and inflexible in managing the presentation and flow of material, including text, multimedia, and web links. For institutions preparing to implement or update their e-portfolio systems, functionality often presents a challenge. One key issue is determining whether a well-established e-portfolio infrastructure can provide a supportive environment for students to engage in meaningful reflection that enhances learning quality. Nagle et al. (2019) noted that one of the main challenges in facilitating students' active engagement in the e-portfolio process is fostering intrinsic motivation. Both self-directed learning and the adoption of new technologies rely heavily on intrinsic motivation. Unlike extrinsic motivation, which is driven by external rewards, pressures, or incentives, intrinsic motivation stems from enjoyment, interest, or a sense of challenge (Ciesielkiewicz, 2019). Despite the growing global literature on e-portfolios, few studies have examined how Indonesian EFL students experience and respond to challenges in creating e-portfolios for public speaking courses. Previous research has primarily focused either on the general benefits of e portfolios in language learning or on technical aspects of implementation, but has rarely addressed the combined challenges of technical barriers, time management, and creativity-related struggles within this specific context. This gap highlights the urgency of investigating the phenomenon, particularly as e-portfolio adoption in Indonesian higher education continues to expand without sufficient empirical evidence to guide effective implementation. Accordingly, this study aims to investigate the challenges faced by Indonesian students when developing e-portfolios in public speaking courses and to explore the strategies they employ to overcome these challenges. The research is guided by the following questions:

1. What challenges do students encounter in developing e-portfolios in public speaking courses?
2. What strategies do students use to address these challenges?

Recent studies (Bone et al., 2020; Scully et al., 2018) demonstrate the effectiveness of e-portfolios in enhancing students' engagement, self-reflection, and performance in language learning courses. The advantages of using e-portfolios in the teaching and learning process have been widely discussed in previous research. Yastibas and Cepik (2015) found that while teachers were supportive of e-portfolios in speaking classes, students reported difficulties with the process, particularly its complexity, which caused frustration for some. Barrot (2016) reported that e-portfolios enabled students to evaluate their own learning, monitor progress, and increase their motivation to learn.

Similarly, Siqueiros Quintana et al. (2022) and Ali et al. (2024) showed that an e-portfolio fostered positive washback by supporting professional development, encouraging critical thinking, and facilitating peer feedback. However, SARAÇ et al., (2022) cautioned that e-portfolios may also generate negative washback, such as anxiety about wider exposure of their work, ICT-related concerns, and challenges with independent learning. Lam (2022) further explained that students' success with e-portfolios is significantly influenced by their self-regulated learning practices. The use of e-Portfolio-based learning in speaking courses has also been addressed in earlier studies. For example, López-Crespo et al (2022) investigated the effectiveness of online learning designs incorporating e-portfolios to enhance self-efficacy in speaking skills. Their findings showed that e-portfolio-based learning had a significant impact on students' self-efficacy in speaking.

Despite these insights, few studies have examined the specific challenges students face and the strategies they employ when creating e-portfolios in speaking classes. To address this gap, the present study aims to explore the

difficulties and approaches experienced by students in developing e-portfolios for English language learning, particularly in speaking courses. By understanding these challenges and strategies, educators and learners can design more effective solutions to enhance the implementation of e-portfolios in speaking instruction.

Several classrooms at Universitas Ahmad Dahlan have adopted an e-portfolios as learning resources, particularly in the English education study program, including public speaking courses. Since the beginning of the 2022–2023 academic year, students in the classes have created and utilized e-portfolios through Google Sites. This platform is considered more productive and efficient for e-portfolio creation, as it is user-friendly and consumes less internet data Olstad (2020). Furthermore, Google Sites offers a range of features that allow users to embed text, graphics, photos, audio, video, and other materials pertaining to public speaking topics.

Nonetheless, e-portfolios are increasingly used effectively in public speaking courses, some students remain unfamiliar with the approach and naturally encounter challenges when developing them. This study, therefore, seeks to identify the challenges students face in public speaking classes when creating e-portfolios and to explore the strategies they employ to overcome these obstacles.

This study is framed by self-regulated learning theory (Zimmerman, 2000) and sociocultural theory (Vygotsky, 1978). Self-regulated learning theory explains how learners plan, monitor, and evaluate their own learning processes, making it relevant to understanding how students manage the difficulties e-portfolio development. Meanwhile, sociocultural theory emphasizes the importance of social interaction and mediation in learning, providing a lens to analyze how peer collaboration and lecturer support facilitate students' e-portfolio practices. Together, these theories provide a critical dimension of e-portfolio in the context of public speaking.

Gaps from Previous Studies

Previous research has documented several benefits of using e-portfolios, such as fostering learner autonomy, enhancing reflection, and promoting assessment transparency (Lam, 2022). At the same time, studies have identified disadvantages, including technical barriers, motivational challenges, and limitations in institutional infrastructure. However, few studies have specifically examined how Indonesian EFL students experience these challenges when creating e-portfolios in public speaking courses. Most prior research have focused on writing or general English skills, leaving a gap in understanding how students cope with technical barriers, time management difficulties, and creativity-related issues in speaking-focused courses. This study seeks to address this gap by investigating both the struggles and the strategies of Indonesian students in developing e-portfolios. In doing so, it contributes to practical pedagogy by offering insights for course design and to theoretical development by extending e-portfolio research into the context of public speaking.

METHODS

This study utilized a descriptive qualitative approach to examine the challenges students faced in developing e-portfolios and the strategies they employed to address these challenges in a public speaking class. Descriptive qualitative research focuses on analyzing and interpreting non-numeric data to provide an in-depth understanding of individuals' experiences and perspectives. This method was chosen to capture the complexities of the students' interactions with e-portfolios as a learning tool and to gain insights into their challenges and problem-solving strategies.

Setting and Participants

The research was conducted in Public Speaking class of the English Education Study Program at a university in Yogyakarta, Indonesia during the 2022/2023 academic year. The class consisted of 22 students, including 18 females and 4 males, all of whom were actively involved in e-portfolio development as part of their coursework. Eight participants (three males and five females) were purposively selected for interviews to ensure data saturation and provided diverse insights into their experiences with e-portfolio implementation. All participants had completed at least four prior English skills courses (Listening, Speaking, Reading, and Writing) before enrolling in Public Speaking, ensuring they had sufficient background in English learning.

Most students came from Indonesian-medium high schools, where English was taught as a foreign language, making their engagement with digital e-portfolio tasks particularly novel. Ethical approval for this study was obtained from the university's Institutional Review Board. Informed consent was sought via WhatsApp messages sent to all enrolled students, inviting them to participate in interviews. Only those who explicitly agreed were included.

Data Collection Techniques

Data were collected through three primary methods: observation, interviews, and documentation. Non-participant observation was conducted to record students' behaviors, challenges, and strategies during classroom activities without researcher interference. Semi-structured interviews were then carried out with students who had voluntarily provided consent via WhatsApp. The interview protocol allowed flexibility and follow-up questions, fostering interactive and dialogic exchanges in which participants could share their experiences openly while the researcher probed for clarification. In addition, documentation of students' e-portfolios and classroom activities was gathered to complement and validate the data from observations and interviews. All data sources were analyzed thematically, with coding informed by the theoretical frameworks of sociocultural theory and self-regulated learning. This ensured that both individual regulation and social interaction were captured in the analysis.

Research Instruments

The instruments used in this study included observation notes, an interview guideline, and documentation. Observation notes were utilized to systematically record students' behaviors and challenges during the development of their e-portfolios. The interview guide, designed with semi-structured questions,

ensured the collection of relevant and in-depth information aligned with the research objectives. Documentation consisted of students' e-portfolio work and other classroom artifacts, which served as supplementary evidence to triangulate the data. Sample interview questions included: "What challenges did you experience while developing your e-portfolio for the Public Speaking course?" and "How did you try to overcome those challenges?" Observation checklist items covered aspects such as students' participation in class activities, use of digital tools, and responses to peer feedback.

Trustworthiness

To ensure the credibility and trustworthiness, several strategies were implemented. Data triangulation was achieved by combining information from observations, interviews, and documentation. Peer review and expert feedback were sought to enhance the reliability of the findings. Thick description was used to provide a detailed account of the research setting and participants' experiences, allowing readers to understand the context and authenticity of the findings. Trustworthiness was also strengthened through social validation processes, including peer debriefing, consultations with colleagues, and member checking by sharing preliminary interpretations with participants for clarification.

Data Analysis Techniques

The data analysis process followed Miles and Huberman's framework (1984), which involves three main steps: data reduction, data display, and conclusion drawing. Data reduction included transcribing interviews, summarizing observation notes, and organizing documentation to identify relevant themes. Data display was conducted by systematically presenting themes in a structured format, enabling for comparison of students' challenges and strategies. Finally, conclusions were drawn by interpreting patterns in the data and verifying them through triangulation to ensure accuracy and depth. Thematic analysis was applied during coding to generate categories and themes from transcripts and observation notes.

Two researchers independently coded the data, and discrepancies were resolved through discussion until consensus was reached. Intercoder reliability was established through iterative discussions, and the final themes were validated by cross-checking with documentation and peer debriefing. In line with the frameworks, codes and themes were interpreted through the lenses of self-regulated learning (Zimmerman, 2000) and sociocultural theory (Vygotsky, 1978). This dual perspective enabled the analysis to capture both individual self-regulation and the social interactions shaping students' strategies, reflecting the social-process nature of qualitative inquiry as described in the data collection section.

RESULTS AND DISCUSSION

The study revealed a range of challenges faced by students in developing e-portfolios in the Public Speaking class. An initial and significant challenge was confusion about the concept of e-portfolios and how to develop them. Many students were unfamiliar with this learning tool and lacked clarity about its purpose and format. This gap in understanding required a substantial period of adaptation as they navigated the new requirements. One student remarked, "At first, I didn't know what an e-portfolio was supposed to look like. I had no idea where to start, and it felt overwhelming." The complexity of developing e-portfolios created a learning curve, which was particularly daunting given the emphasis on independent learning. This contrasted sharply with the structured guidance students were accustomed to in traditional classroom practices.

The findings also highlighted technical and infrastructural barriers that hindered students' progress. A major obstacle was dependence on stable internet connectivity, which proved challenging for students in areas with unreliable network coverage. As one respondent stated, "Sometimes, I couldn't access the platform because the internet in my area was unreliable. It made it really hard to complete my work on time." In addition, limited technological proficiency posed another difficulty, as not all students were confident in using digital tools such as Google Sites, the primary platform for creating e-portfolios. These barriers frequently delayed progress and increased stress, making implementation more demanding than anticipated. Students also experienced compatibility issues when integrating multimedia elements such as videos and images into their e-portfolios, further complicating efforts to present a cohesive and dynamic digital project.

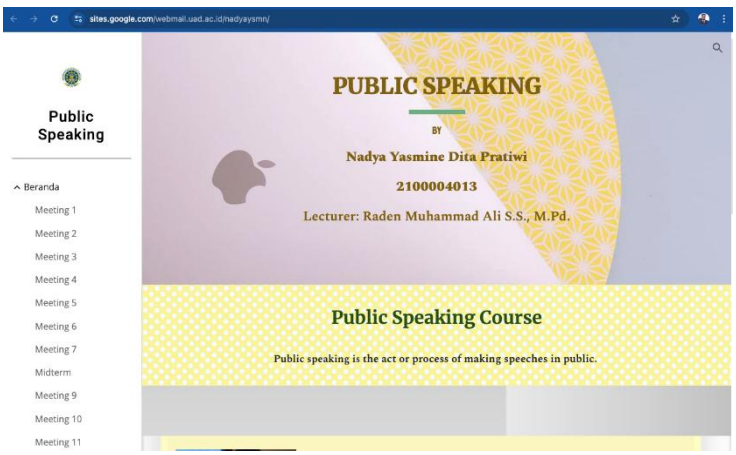

FIGURE 1 | Cover page of a public speaking student's e-portfolio, showing the initial layout and structure that illustrates how students organize the course identity and materials for each meeting

Time management emerged as a critical issue for students (see Figure 2). Developing of e-portfolios required meticulous planning and execution, ranging from collecting and organizing materials to reflecting on and showcasing their learning journey. Students reported that this process was highly time-intensive and often conflicted with their other academic responsibilities. As one participant noted, "I had to juggle between assignments from other courses and the time-consuming process of designing the e-portfolio,".

Procrastination and lack of motivation further exacerbated the problem, as many students struggled to allocate sufficient time and effort to create quality e-portfolios. This underscored the importance of fostering stronger time-management skills

to help students effectively meet the demands of e-portfolio development. Many students also noted that balancing multiple deadlines across different subjects alongside e-portfolio creation led to mental fatigue, which negatively affected their overall performance.

Another significant challenge was the demand for creativity and critical thinking in e-portfolio development. Students were required to present their learning outcomes in a visually appealing and coherent manner, requiring both aesthetic awareness and technical knowledge. One student confessed, "I'm not a creative person, so making the portfolio look good was very stressful for me." For many, this was an unfamiliar task that pushed them beyond their comfort zones. The requirement for originality and innovative thinking added additional pressure, as students had to ensure their e-portfolios stood out while still meeting the academic criteria set by their instructors. This often led to frustration, especially among those who lacked confidence in their creative abilities. Additionally, the overwhelming range of available for design and layout choices occasionally resulted in decision paralysis, adding another layer of difficulty to the process.

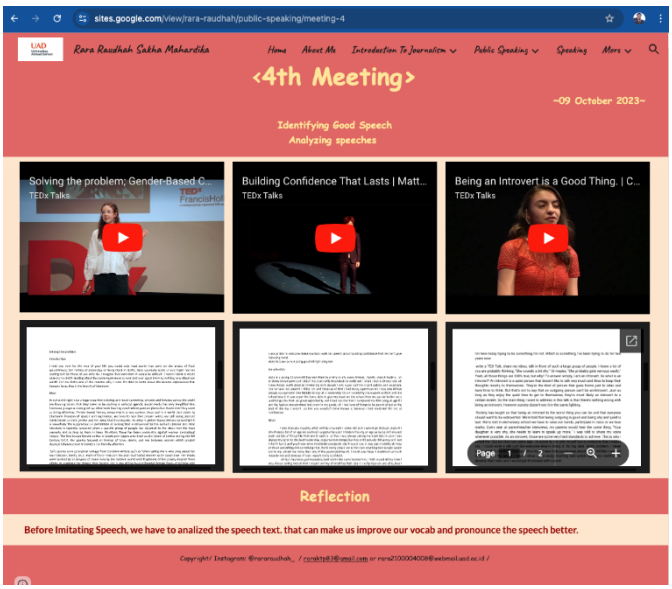

FIGURE 2 | A page of a student's e-portfolio containing learning materials, assignments, and reflection

The study also identified challenges related to balancing the academic and personal aspects of e-portfolio development. Students noted that creating an effective e-portfolio required more than simply fulfilling academic requirements; it demanded deep reflection on their learning journey, involving introspection and connections to personal experiences. As one student explained, "I struggled to find the right balance between making it professional and adding a personal touch,". This blending of academic rigor with personal storytelling posed difficulties for students unaccustomed to reflective practices, as illustrated in Figure 2, which shows a student's e-portfolio page combining assignments with reflective narratives. Integrating personal narratives often took longer than expected, compounding existing time-management challenges. Furthermore, some students struggle to identify meaningful moments or evidence to include in their e-portfolios, often feeling that their contributions lacked significance or depth.

Despite these challenges, students adopted several strategies to overcome them. Collaborative learning emerged as a crucial approach, with many students forming study groups to share ideas, resources, and technical tips. One respondent shared, "Working with friends helped me understand how to organize my portfolio and gave me ideas I hadn't thought of before." Peer discussions not only demystified the e-portfolio development process but also fostered a sense of community, reducing feelings of isolation that some students initially experienced. Guidance from lecturers further provided valuable feedback, enabling students to refine their work and address specific difficulties effectively. Collaborative brainstorming sessions often generated innovative ideas, while peer encouragement motivated students to persist in their efforts.

Self-directed learning also played a pivotal role in navigating the complexities of e-portfolio development. Many students relied on online tutorials, such as YouTube videos and instructional websites, to acquire the necessary technical skills. One participant stated, "I watched a lot of tutorials online to learn how to use the platform and make my portfolio more interactive,". This approach not only enhanced their digital proficiency but also fostered independence and resilience. Constructing concept maps was another effective strategy, helping students organize ideas and structure their e-portfolios logically. By visualizing their plans, students could align their work with expected outcomes and streamline the development process. Self-directed learning allowed them to explore new tools and features, adding distinctive elements that enriched their portfolios.

To address the issue of internet connectivity, students sought out locations with reliable access, such as campus facilities or public Wi-Fi hotspots. This proactive approach ensured smooth uploading of materials, collaboration with peers, and timely receipt of feedback. As one respondent explained, "I often stayed late on campus just to use the stable internet for uploading my videos." Furthermore, students recognized the importance of avoiding procrastination and implemented strategies to maintain discipline, such as setting personal deadlines, breaking tasks into manageable segments, and making steady progress. Daily or weekly schedules specifically dedicated to e-portfolio work proved particularly effective in reducing last-minute stress and ensuring consistent advancement.

Feedback and mutual support within the classroom environment emerged as a key enabler for success. Students frequently utilized tools such as Google Docs for collaborative editing and peer review, which facilitated constructive feedback and collective learning. As one participant explained "Having classmates review my work helped me see things I needed to fix that I hadn't noticed before,". This interactive process not only enhanced the quality of the e-portfolios but also fostered a supportive learning culture. Regular feedback from lecturers helped students identify areas for improvement, encouraged the adoption of a growth mindset, and ultimately booted their confidence and motivation. Structured in-class feedback sessions provided opportunities for students to share their progress and receive diverse perspectives, thereby enriching

their portfolios.

The psychological strategies also played a significant role in overcoming barriers. Many students emphasized building a sense of responsibility and accountability toward their e-portfolios. Viewing their portfolios as personal achievements rather than merely academic requirements motivated them to invest greater effort. One respondent noted, "I told myself this is something I can show off later, so I wanted it to be perfect,". Celebrating small milestones and reflecting on their progress provided a sense of accomplishment, sustaining engagement over time. Moreover, students reported channeling frustrations into constructive actions, such as seeking inspiration from exemplary e-portfolios or using motivational tools like reward systems to maintain focus. Developing pride in their work proved to be a powerful driver of persistence and quality.

Institutional support was also emphasized as crucial in alleviating challenges. Workshops and training sessions conducted by lecturers equipped students' foundational skills for e-portfolio development, while also offering a platform to clarify doubts and receive hands-on guidance. One participant remarked, "The workshop really helped me understand what the lecturers were expecting from us,". Access to digital infrastructure, such as computer labs and technical assistance, further supported students in managing the technological aspects of portfolio creation. Institutional interventions underscored the importance of collaborative efforts in fostering student success, with templates and sample e-portfolios serving as valuable references.

Cultural and social influences further shaped students' approaches to e-portfolio development. Peer pressure and competitive environments had both positive and negative impacts. While some students were motivated by their peers' progress and achievements, others experienced anxiety and self-doubt. One student reflected, "Seeing my classmates' portfolios sometimes made me feel like mine wasn't good enough, but I tried to focus on improving at my own pace." To counteract these effects, students were encouraged to prioritize personal growth and view the e-portfolio as a tool for self-expression rather than competition. This perspective helped them channel their energy into creating authentic and meaningful portfolios. Cultivating an environment of encouragement rather than comparison further reduced stress and fostered a healthier learning atmosphere.

The research also highlighted the long-term benefits of e-portfolio development. Beyond fulfilling academic requirements, students reported that the process enhanced their self-awareness and ability to articulate their skills and experiences. As one participant reflected, "Looking back at my portfolio, I can see how much I've grown, and it makes me proud,". These attributes were deemed valuable for future endeavors, such as job applications and professional development. By documenting their learning journey, students created a repository of evidence that could be revisited and updated, positioning e-portfolios as dynamic tools for lifelong learning. This forward-looking perspective reinforced the relevance and utility of e-portfolios in modern education. Students also noted that reflecting on their accomplishments through e-portfolios boosted their confidence and strengthened their sense of achievement.

E-portfolios have become an increasingly popular tool in modern education, offering students a platform to showcase their learning journey and achievements. However, implementing e-portfolios into the academic curriculum presents both challenges and opportunities. This discussion examines the findings related to the challenges students encounter in developing e-portfolios and the strategies they employ to overcome them. By addressing these aspects, educators and institutions can gain valuable insights to optimize e-portfolio integration and ensure it becomes a transformative learning experience. The discussion also situates the findings within existing literature, highlighting practical solutions and implications for future practice. Notably, these findings align with prior studies in Indonesia (Muin et al., 2021) and Asia (Alshahrani et al., 2023), which similarly reported difficulties with technical and motivational aspects of e-portfolio development. Such consistency suggests that the challenges faced by Indonesian students are not isolated but reflect broader regional trends in implementing digital portfolio practices.

Challenges and Barriers in E-Portfolio Development

The findings of this study revealed multiple challenges students faced in the development of e-portfolios, ranging from technical obstacles to the demand for creativity. Confusion regarding the very concept of e-portfolios highlighted the necessity for preliminary orientation sessions. Students' remarks, such as "I didn't know where to start," indicate a knowledge gap that educators must address. Consistent with recent findings by Ismail (2023), the initial complexity of e-portfolios can lead to frustration unless students are provided with clear guidelines and examples. Effective instructional scaffolding, coupled with well-designed workshops, can significantly mitigate this challenge by offering step-by-step support.

Technical difficulties, such as unreliable internet connectivity and insufficient technological skills, also impeded progress. One respondent noted, "The internet in my area made it difficult to finish tasks on time." Similar challenges were documented by Alshahrani et al. (2023), who emphasized the importance of infrastructure support in successful e-portfolio implementation. Institutions should therefore prioritize providing reliable digital infrastructure, such as campus-wide high-speed internet, and alongside training sessions tailored to varying levels of digital literacy. Additionally, platforms selected for e-portfolios development should be user-friendly to minimize the learning curve.

Time management emerged as another recurring challenge, highlighted by a participant's comment: "Balancing e-portfolios and other assignments was exhausting." This finding aligns with Khound et al. (2024), who suggested that time-intensive activities like e-portfolio development demand strong organizational skills. Educators can support students by integrating project management tools into the curriculum, fostering effective planning practices, and setting incremental deadlines. Breaking larger tasks into smaller, manageable segments can help students maintain steady progress and reduce last-minute pressures.

Strategies for Overcoming Challenges

Despite these challenges, students employed various

strategies to mitigate difficulties in e-portfolio development. Collaborative learning emerged as a pivotal strategy. Respondents highlighted the value of peer discussions, with one noting, "Working with friends helped me understand how to organize my portfolio." Collaborative learning aligns with Vygotsky's theory of social constructivism, which posits that peer interactions facilitate cognitive development. Incorporating collaborative activities, such as group reviews and peer evaluations, into e-portfolio assignments can therefore enhance learning outcomes. Platforms like Google Docs further support real-time collaboration, enabling students to share feedback and ideas seamlessly. Furthermore, peer mentoring programs that pair students with varying levels of expertise could promote mutual learning and skill development.

Self-directed learning was another prominent strategy. One participant explained: "I watched tutorials to make my portfolio interactive.", highlighting reliance on online recourses. This approach reflects Knowles' concept of andragogy, which emphasizes learner autonomy and initiative (Cleavenger, 2020). Similarly, Othman et al. (2018) found that self-directed learning not only enhances technical skills but also strengthens resilience and adaptability. To encourage this, educators could curate lists of reliable online resources and design assignments that promote independent exploration, such as tasks requiring students to "Find and integrate a new feature into your portfolio,". Providing access to technical support and online discussion forums would further empower students to troubleshoot challenges and develop autonomy in their learning.

Enhancing Creativity and Reflective Practices

Developing a visually appealing and coherent e-portfolio posed significant challenges, particularly for students who doubted their creative abilities. One participant shared "I'm not a creative person,", illustrating a psychological barrier. Creativity is a crucial component of e-portfolio development, often pushing students beyond their comfort zones. While their presents challenges, it also offers opportunities for growth. Rowley and Munday (2022) highlight that e-portfolios are inherently creative tasks, requiring a balance between aesthetic appeal and content relevance.

To address this challenge, educators can incorporate design-thinking workshops into the curriculum, offering hands-on opportunities to for students to develop skills in layout design, multimedia integration, and storytelling. Such workshops can nurture creativity and critical thinking, helping students build confidence in their ability to communicate ideas effectively through digital formats. Presenting exemplary e-portfolios can also inspire students and set benchmarks for quality. Exposure to diverse models helps students visualize success and recognize the various ways multimedia elements can enhance their work.

Reflective practices during the design process play an equally vital role. Structured reflection enables students to assess their progress, refine approaches, and align their portfolios with both academic and personal goals. Encouraging constructive peer feedback further strengthens reflective learning by providing new perspectives, identifying weaknesses, and refining creative outputs. As Hui et al. (2023) suggest, peer input fosters collaboration and collective improvement, ultimately leading to more polished and impactful e-portfolios.

The reflective practices reported by students also connect to theories of self-regulated learning and metacognition. By setting personal goals, monitoring progress, and adjusting strategies, students demonstrated elements of self-regulation—skills identified by Lam (2022) as critical for successful independent learning. These processes indicate that e-portfolio development not only enhances technical competence but also cultivates higher-order metacognitive abilities, reinforcing its value as a transformative pedagogical tool.

Institutional Support and Long-Term Benefits

Institutional support played a crucial role in alleviating challenges. Workshops, as highlighted by a respondent's remark "The workshop clarified what was expected" proved instrumental in equipping students with essential skills. As Torre (2019) argues, structured training sessions are vital for ensuring that students grasp both the technical and conceptual aspects of e-portfolio development.

Beyond workshops, institutions must also invest in digital infrastructure. Reliable internet access, well-equipped computer labs, and readily available technical assistance are essential for successful implementation. Templates and sample portfolios provided by instructors serve as practical references, bridging the gap between abstract expectations and tangible outcomes. Such initiatives not only enhance students' experiences but also highlight the institution's commitment to fostering digital literacy and long-term professional growth.

7. **Rara Raudhah Sakha Mahardika** (2100004008)
   URL e-Portfolio: https://sites.google.com/view/rara-raudhah/home
   Members of The Groups :
   5. M. Ghoni Raihan
   6. Azzam Firdausi
   7. Rara Raudhah Sakha Mahardika

Meeting	Topic	Comment, question, advice, etc (Write your first name: your comment) Example: Raden : The topic of your speech is awesome. Can you tell me how to find such an interesting topic?	Response
1	Introduction about Public Speaking Course	**Raihan**: I got a lot of information about public speaking after visiting your page, Ra. The display also looks fascinating! Great job! **Azzam:** You put the information clearly there, Rara. You attached the Lesson plan as well. Since it is the introduction session, I think it is pretty comprehensive information and a clear strong bridge to Public Speaking. The view and the display are eye-catching and not boring, good job!	**Rara:** Glad to hear that, Han. thank you! **Rara**: Thank you, Azzam, I appreciate it so much.
2	What is Public Speaking and How We Do it?	**Raihan:** Actually, I'm always nervous to speak in front of others. And after visiting your page, I learned how to do it little by little! Thank you so much, Rara! **Azzam:** This one as well. You wrote comprehensively great information there. You put the explanation and description as well. I hope everyone who visits your page get the information they want. Well done, Rara! And I hope i could do the public speaking confidently!	**Rara:** Hope you can improve your speaking skills! Thank you, Han! **Rara:** It is my pleasure knowing that, Azzam. Thank you so much. I', pretty sure you can do it one day, Zam!
3	Preparing Imitating Speech	**Raihan:** You chose good topics and speech there ra ! love it **Azzam:** You served a quite clear information there, Ra! I never knew that imitating or impersonating could help my public speaking. Thank you!	Rara: Thanks zam for your comment!

FIGURE 3 | A screenshot of the students' peer discussion forum, illustrating how collaborative learning and peer feedback supported the development of their e-portfolios

These findings carry implications for curriculum design. Lecturers should scaffold e-portfolio tasks gradually, beginning with structured guidelines and examples before progressing to more open-ended assignments that encourage creativity. Systematic integration of peer collaboration, for instance, through peer review sessions or collaborative workshops, can also help students overcome motivational and technical barriers while enhancing reflective practices.

Beyond their academic utility, e-portfolios were also perceived as valuable tools for professional development. As one participant reflected, "Looking back at my portfolio, I can see how much I've grown." This observation resonates with Mapundu and Musara (2019), who described e-portfolios as lifelong learning tools that document growth and achievements. Encouraging students to view their e-portfolios as evolving documents prepares them for future applications, such as job interviews or graduate studies. Incorporating career-oriented elements, such as a Skills and Achievements section, further enhances their relevance. By framing e-portfolios as assets for professional advancement, educators can inspire students to invest greater effort and creativity in their development.

This study is limited by its small sample size and focus on a single institution, which restricts the generalizability of the findings. Future research could adopt longitudinal designs to examine how students' reflective practices and strategies evolve over time. Comparative studies across institutions and skills areas (e.g., writing, listening, or interdisciplinary projects) would also provide deeper insights into the transferability of e-portfolio practices.

CONCLUSION

The findings of this study emphasize that while the development of e-portfolios in public speaking classes is highly beneficial, it also presents a rage of interconnected challenges for students. Technical difficulties, such as unstable internet connections and limited technological proficiency, were compounded by psychological barriers, including low motivation and creative struggles. These challenges underscore the need for structured guidance and sustained support. At the same time, students' adaptive strategies, such as collaborative learning, self-directed exploration, and effective time management, reflect their resilience in navigating obstacles. This highlights the importance of fostering a supportive learning environment where students have access to resources, constructive feedback, and opportunities for skill enhancement.

To ensure the successful integration of e-portfolios, institutions must prioritize both technical and pedagogical support. Workshops, reliable infrastructure, and clear guidelines are crucial in reducing students' anxiety and confusion. Educators can further encourage reflective practices and provide templates that stimulate creativity. By systematically addressing challenges and promoting both collaborative and independent learning strategies, e-portfolios can serve as a transformative educational tool. Beyond enhancing academic outcomes, they also cultivate essential skills such as critical thinking, time management, and self-motivation, competencies that are invaluable for students' future careers and lifelong learning.

Nevertheless, this study has certain limitations, including a relatively small sample size (22 students from a single university) and its focus on a single English skill (public speaking), which may restrict the generalizability of the findings. Despite these limitations, the study offers valuable contributions: practically, it informs teachers and institutions about effective ways to integrate e-portfolios; methodologically, it demonstrates the application of qualitative approaches to exploring student experiences; and theoretically, it enriches understanding by drawing on sociocultural theory and self-regulated learning theory within the context of e-portfolio development. For future research, studies involving larger and more diverse samples, comparative investigations across different English skills, and the use of mixed-methods designs are recommended to strengthen the evidence base and broaden insights.

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