

The Development of an e-Portfolio Platform for Undergraduate Students of the Educational Faculty, Thaksin University

Nuchanat Jaidamrong, Natcha Mahapoonyanont

Faculty of Education, Thaksin University, Songkhla 90000, Thailand
Corresponding author: natcha.m@hotmail.com

How to cite this article: Nuchanat Jaidamrong, Natcha Mahapoonyanont (2024) The Development of an e-Portfolio Platform for Undergraduate Students of the Educational Faculty, Thaksin University. *Library Progress International*, 44(3), 24405-24417

Abstract

The Faculty of Education at Thaksin University developed and implemented an e-Portfolio platform specifically for undergraduate students in this study. Students increasingly recognize e-Portfolios as powerful tools that allow them to document their academic achievements, reflect on personal and professional growth, and showcase their skills in a multimedia, accessible format. The primary objectives of this research were to identify the essential components of an e-Portfolio for education students, design a user-centric platform, and assess its effectiveness in enhancing learning outcomes and career readiness. We used a mixed-method approach, combining quantitative data from satisfaction surveys with qualitative analysis of student reflections to provide comprehensive insights into user experience and impact.

Results indicate that the e-Portfolio platform significantly improved students' self-reflection, digital literacy, and readiness for professional environments. Key features identified as essential included customizable templates, multimedia integration, and secure data management, all of which contributed to a user-friendly and adaptable platform. Additionally, students reported enhanced confidence in presenting their competencies to potential employers, highlighting the platform's role in bridging academic learning with professional skills. This research underscores the potential of e-Portfolios as transformative tools in higher education, promoting lifelong learning and aligning student skillsets with real-world demands. Recommendations for future implementation include integrating the platform within the curriculum, providing robust technical support, and expanding the e-Portfolio system to other faculties to foster a unified, reflective learning culture across disciplines.

Keywords: e-Portfolio, Student Reflection, Career Readiness, Higher Education, Digital Literacy

Introduction

Digital technologies are an essential component that redefines how students interact with their learning and how they come to understand what they have learned (Miles et al., 2022; Zeller-Powell, 2011). Electronic portfolios, also known as e-portfolios, have emerged as a valuable tool for students to document their academic achievements, foster self-evaluation, and enhance their job prospects. E-Portfolios are spaces for students to bring together multiple multimedia artifacts documents, images, videos, and personal reflections that display their skills, learning outcomes, and professional competencies in one location (Barrett, 2010; Abrami et al., 2008). Portfolios are being digitized, traditionally having been used as a mechanism of assessment in education or the professions, gaining greater flexibility, accessibility, and multimedia capabilities. E-Portfolios provide a flexible and interactive alternative to paper-based portfolios that allows students to record their learning experiences throughout the course with an updatable format tailored to individual needs. The movement to digital portfolios reflects contemporary educational paradigms focused on lifelong learning, individualization of instruction, and the convergence of formal and informal learning experiences (Butler, 2006; Granberg, 2010). Research highlights the positive impact e-Portfolios can have on student engagement and critical reflection, both of which are fundamental to professional development (Gikandi, Morrow & Davis 2011; Bass 2012).

Alongside the shift to e-Portfolios, Massive Open Online Courses (MOOCs) have radically influenced educational practices by delivering scalable, flexible, and widely accessible learning opportunities to cohorts of students around the world. Creating an e-Portfolio as part of a MOOC has even more benefits because the structured, modular environment helps teachers walk students through the steps of creating an e-Portfolio while they also do skills documentation and self-reflection (Cambridge, Cambridge & Yancey, 2018). The MOOC modules also incorporate e-Portfolio activities and assignments, enabling students to build their portfolios in a structured manner, while focusing on topics that align with their learning outcomes and career plans. Not only does this

contribute to greater accessibility for different student populations, but it also encourages collaboration and feedback through assignments that involve peer assessments and self-reflection exercises (Gikandi et al.).

Despite the proven advantages of e-Portfolios and the scalability of MOOCs, both remain underutilized in many educational contexts, particularly in Thailand, where traditional assessment methods often dominate. Recognizing the need for tools that bridge academic achievements with professional readiness, Thaksin University's Faculty of Education initiated a project to develop a MOOCs-based e-Portfolio platform specifically tailored to undergraduate students. It serves to help students reflect on their learning journey, record their academic and co-curricular achievements, and provide them with an employment portfolio. By developing digital competence and self-assessment skills through a MOOCs framework for e-Portfolio development, guidance on portfolio creation ensures that all students receive similar support throughout their studies, forming an adaptable and extensible lifelong learning model (Granberg, 2010; Donnelly & O'Keeffe, 2013).

This study aims to explore a design, implementation method, and effects of the MOOCs-integrated e-Portfolio platform for students at Thaksin University. In particular, it seeks to pinpoint key platform features, evaluate usability and efficacy in promoting self-reflection, and assess the overall effectiveness of its ability to prepare students for their chosen career paths. Aiming to fill the void between skills learned at campus and actual competencies needed for a successful career, the MOOCs-based portfolio platform is perceived as a holistic approach to nurturing students to make them cope with a competitive workforce environment. The research findings not only validate the potential innovations in digital learning in Thai HEIs, but also offer a replicable model for other institutions seeking to implement MOOCs and e-Portfolios for comprehensive student development.

Background and significance of study

E-Portfolios in higher education have transitioned from mere static digital storage to dynamic interactive e-portfolios designed for self-directed and reflective practice as well as professional developments. Massive Open Online Courses (MOOCs) increasingly use E-Portfolios as scalable and accessible spaces for learners to collect, curate, and publish artifacts that evidence learning growth, skill development, and achievements in ways that other assessment methods do not easily allow (Cambridge, Cambridge & Yancey 2018). As an open platform with customizable activities, MOOCs lend themselves well to e-Portfolios as they drive students toward scaffolding digital competency, reflective practice, and professional identity within a guided modular experience. Embedding e-Portfolio assignments in MOOC modules allows students to build their portfolios gradually (in a structured, reflective process) and connect academic learning with real-world skills (Chen & Chen, 2018). In today's globalized workforce, graduates must possess adaptable skills, including digital literacy, self-assessment, and the ability to translate academic achievements into practical, career-oriented competencies. The integration of MOOCs with e-Portfolios meets this need by fostering these skills in a scalable, collaborative online setting that accommodates diverse learning styles and offers opportunities for peer feedback and self-reflection (Donnelly & O'Keeffe, 2013). Thus, the urgent need to connect academic learning and employability increasingly acknowledges e-Portfolios, especially those provided via MOOCs. Evidence has shown that e-Portfolios deepen learning by making connections between the classroom experience and a larger professional world (Bass, 2012; Gikandi, Morrow, & Davis, 2011). E-Portfolios can aid in reflective practice, a skill that teachers, especially education students, need to possess as they continuously evaluate and enhance their teaching methods. The nature of MOOCs on e-Portfolios facilitates structured reflection, enabling students to reflect and develop across multiple teaching competences in a controlled sequence. Research conducted by Strudler and Wetzel (2005) and Young (2002) demonstrates that teacher education e-Portfolios not only serve formative purposes, but also foster important transferable skills essential for lifelong professional development, including critical thinking, self-regulation, and flexibility.

However, even though there are new technologies available, like MOOCs and e-portfolios, these tools don't seem to have thought about how they can help educational institutions meet specific curriculum goals. They may also go against common differences in non-Western education systems, like cultural and pedagogical expectations and how students like to learn when they are given tasks. For instance, educational contexts in Southeast Asia prioritize hierarchical structures and group achievement (Barrett, 2004). This could necessitate the inclusion of additional supporting features in MOOC-based e-Portfolios to foster reflection and enhance digital literacy. Culturally adapted MOOC-e-Portfolio models could ameliorate these barriers by reducing the homogeneity of e-Portfolios as preparation for career or lifelong learning purposes across diverse cultural and global perspectives.

E-Portfolios have been studied extensively as instruments for promoting reflective learning and self-assessment in Western contexts of teaching and learning, but little research has continued on their use in Southeast Asia, where hierarchical command structure appears prevalent while group-oriented tasks may be emphasized rather than individual reflection (Suryani & Herianti, 2015). Adapting e-Portfolios to these environments means the development of cultural and educational norms, including extra support for digital literacy and formalized directions around reflection (Llorens & Capdeferro, 2011). One could integrate MOOC as the platform, ensuring scalability and providing a structured learning environment that facilitates access to digital literacy and reflective skills development opportunities, all while familiarizing students with the course format. Collective learning

approaches, often prioritized in Southeast Asia, find MOOCs appropriate as they can incorporate group or peer-led activities, facilitating the transition towards more individually reflective practice (Chen & Chen, 2018).

Moreover, despite the widespread acknowledgement of e-Portfolios' effectiveness in assessing student performance (Light et al., 2012) and the numerous studies that confirm the acquisition of relevant skills for career progression, such as self-assessing capabilities (Pelliccione & Raison, 2009) or the development of both academic and professional identities, there is a lack of literature on how e-Portfolio employments can promote graduate work readiness by supporting reflection and ongoing improvement in relation to performative competitive contexts. The integration of an e-Portfolio model with MOOCs could bridge this gap by integrating professional skills and reflection modules into the portfolios. This dual-focus approach also engenders the development of important self-reflection and professional branding skills, which can be beneficial in terms of enhancing employability after graduation (Gikandi, Morrow & Davis 2011; Donnelly & O'Keeffe 2013).

Furthermore, there is limited evidence of the particular characteristics and elements of an e-portfolio platform that successfully mediate reflective learning or career preparedness. Wilhelm et al. (2006) conducted a study to search for relevant literature on effective e-Portfolios, highlighting the importance of customizable templates, multimedia support, and integrated feedback schematics. Few studies have examined such features in the context of teacher education, and even fewer have investigated these through a MOOC-based delivery that facilitates continuous updates to the portfolio over time. We believe a MOOC-based platform, capable of offering pedagogical features like peer review, multimedia integration, and continuous reflective prompts within an accessible and familiar online course space, could bridge this gap. Such a setup would give students the platform to continuously iterate on their portfolios while they advance through their careers, thus facilitating lifelong learning and customization of skills in line with workforce need.

Finally, we also see this integration between MOOCs and e-Portfolios as an opportunity for empirical research on how large-scale structured online learning environments can support reflection and professional identity formation in non-Western educational contexts. This can offer insights into the most effective, culturally relevant e-Portfolio models that cater to the needs of Southeast Asian teacher education students, while also contributing to the global discussion on digital pedagogy and employability in a culturally diverse world (Cambridge, Cambridge & Yancey, 2018).

Novelty and Contribution of this Study

In this study, we set out to design and develop a MOOC-integrated e-Portfolio platform for undergraduate education students at Thaksin University. The platform integrates structured learning approaches without overly imposing curriculum requirements that are not culturally relevant or career-oriented and facilitates interactive student reflection to inform employer-needed professional readiness. The platform is built with three new goals:

1. **Leveraging MOOC Structure:** We carefully place the e-Portfolio within a MOOC, adapting its design to suit Thai social and educational contexts, while also acknowledging the challenges of using reflective digital tools in non-Western cultural settings (Granberg, 2020). The MOOC format guides students step-by-step in reflective practice through scaffolding, and each module introduces reflective processes in a structured manner to overcome their unfamiliarity. The effectiveness of this structured approach can be even more valuable for supporting the growth of reflective skills, as it enables a culturally sensitive mode of learning that meets local expectations yet offers alignment with international education standards.

2. **Work-integrated component of career readiness and professional identity:** In contrast to traditional e-portfolios, which are generally used for assessment, this platform is integrated with MOOC performance and focuses on career-oriented skills and professional identity. In the MOOC, students generate specific artifacts from each module (e.g., teaching philosophies, lesson plans, and classroom strategies) that populate their e-Portfolios. Researchers who have looked into how e-Portfolios affect job prospects have already found a direct link between practice-theory integration and helping students build their professional identities from academic skills that can be used in real teaching situations (Buckley et al., 2009; Hamilton & Barrett, 2006; Penny Light, Chen, & Ittelson, 2012). Furthermore, future employers can conveniently share the MOOC-based e-Portfolio whenever appropriate, making it a valuable tool for job applications and professional branding.

3. **A rich design of features for reflective learning—** This research study incorporates pre-defined features commonly found in MOOCs, including multimedia support, customizable templates, peer review capabilities, and a feedback loop, to create a highly dynamic and interactive e-Portfolio environment. Every module of the MOOC contains reflective questions and peer feedback opportunities, helping students continuously reflect on their work and make changes where necessary. With these embedded features, the MOOC platform solves usability and accessibility problems that are traditionally problematic with any digital learning tool (especially for students across the spectrum of variable digital proficiency) (Wilhelm et al., 2006; Buckley et al., 2009; Lin & Lui, 2008). MOOC analytics let educators track course engagement and progress, which creates valuable data points to identify concepts students need help with.

Objectives

This study sets out the following objectives:

1. To determine components suitable for an e-Portfolio platform for education students.

2. To design an e-Portfolio platform specifically for the Faculty of Education.
3. To evaluate the platform's effectiveness in enhancing student learning and employability.

Literature Review

The Changing Face of e-Portfolios in the Field

Electronic portfolios, or e-portfolios (the term that better reflects their digital nature), have emerged in the field of education as dynamic, multimedia-based records through which students can illustrate their learning, competencies, and being career-ready. Traditional portfolios limit their format to print media, while e-portfolios leverage diverse formats such as text, video, and hyperlinks, enabling students to organize, reflect, and present their work effectively (Cambridge, Cambridge & Yancey 2018). Another characteristic of e-Portfolios is their versatility; they are beneficial in flexible learning environments, such as MOOCs (Massive Open Online Courses), where learners tend to be independent and purposefully looking for a way to structure their learning experience into professional applications (Bateman et al., 2016). As MOOCs have grown in popularity, there has been an increasing need for tools that enable students to accurately and easily record and validate their skills. Since the MOOC participants usually have different professional backgrounds and learning goals, e-Portfolios facilitate an avenue for them to demonstrate their course outcomes, especially in skills-focused courses (Chen & Chen, 2018). According to research (Gikandi, Morrow, & Davis, 2011), e-portfolios are complementary to MOOC learning environments because they can provide students with space for knowledge consolidation and practice making reflective and critical connections between their learning and the requirements for demonstrating competences to potential employers.

Use of e-CVs and reflective learning in editable MOOC contexts

In e-Portfolios, the students are often required to actively reflect upon their learning materials, which foster self-awareness and metacognition. Moocs, by their very nature, are excellent independent learning experiences. In situations where learners may have limited access to instructors, e-Portfolios provide a crucial functional space for reflective growth (Ryan & Ryan, 2018). Research (Dabbagh & Reo, 2011) has indicated that e-Portfolios in MOOC environments can play a significant role in bringing about the shift between passive content consumption and active learning, in which learners are responding to domains of knowledge, articulating their understanding, or applying it within real-world contexts. Finally, MOOC e-Portfolios create a way for students to personalize their driver of learning and take initiative around what they want the output to be. Chen and Chen (2012) found that e-Portfolios in MOOCs increased students' motivation by providing them with a platform to track their progress and achievements, fostering a sense of ownership over their learning journey. Through this reflective practice, students deepen their comprehension and gain confidence as they see tangible evidence of their skills, which is especially relevant in professional MOOCs that aim to build career-related skills (Beck & Bear, 2009).

Where the Past Meets the Future: e-Portfolios as Work Samples and Career Development Resources in MOOCs

As MOOCs tend to be career-focused, having an e-portfolio is imperative as it provides documentation of skills gained through these online learning experiences. Instead of simply receiving a completion certificate for an online course, e-Portfolios allow MOOC learners to collect and showcase artifacts of their learning that may be relevant to employers, including completed projects, case studies, or exercises through problem-solving (Slen et al., 2023). Roberts et al. (2022) have demonstrated the significance of this advantage, particularly when learners can acquire skills such as data science, digital marketing, or coding through MOOCs, which typically do not fit into a traditional degree program. The latest research highlights the role of e-portfolios as a useful way to help employers verify MOOC learning outcomes. For instance, Johnson (2022), e-Portfolios can bridge the gap between academic achievements and workplace competencies by providing more descriptive evidence of skills. The clarity of this type of skill-based learning not only improves the chances for the MOOC takers to get hired, but particularly when knowledge and skills are also attributed to demonstrable practical and hands-on experience (Smith & Tillema, 2003).

The Challenge of Combining MOOCs with e-Portfolios: Benefits of Integrating e-Portfolios in MOOCs

What are the benefits of e-Portfolios in MOOCs? MOOCs enhance reflective practice, demonstrate competencies, and prepare participants for their careers. The e-Portfolios provide a more structured tool for self-assessment, further fostering the cyclical process of learning, reflecting, and repeating by MOOC participants. Such structure is useful, especially in large-scale courses where instructor feedback may be scarce, and self-assessment plays an essential role in the learning process. However, the use of e-Portfolios in a MOOC context presents challenges related to access and digital literacy. Some MOOC learners might find technological issues with creating and managing an e-Portfolio challenging, whereas others do not have a steady internet connection or appropriate devices to make the most out of these tools (Yu, et al, 2020). Lastly, considering the diversity of the MOOC learner population and their distance from traditional education models compared to other groups, it's crucial to carefully consider scalable guidance or support for e-Portfolio use. This is because the use of an e-Portfolio may occur without direct supervision (Batson & Watson, 2012). One essential factor for the successful use of e-Portfolios in MOOCs is providing the design with resources and tutorials that can assist learners in understanding and utilizing e-Portfolios (Lankes 2008).

MOOC Models and Frameworks for Successful e-Portfolio Implementations

We need to make platforms affordable, accessible, and professional in order to fully realize the promise of e-Portfolios in MOOC settings. Best practice The e-Portfolio models in MOOCs feature customizable templates, multimedia capabilities, and align the template to concrete learning objectives (Barrett, 2010). Reflective prompts, self-assessment tools, and peer review functions guide students throughout their assignment, assisting them in organizing and presenting their work (Yancey, 2009). In addition, e-portfolios in MOOCs must incorporate networking features, signifying collaborative means of feedback. Research suggests that e-portfolios that support peer interaction and mentorship tend to be more effective, as they contribute to a sense of community and allow learners to engage in constructive feedback (Cambridge et al., 2018). These collaborative-oriented functionalities align with some MOOC principles, such as openness in access and shared learning, enabling peers and professionals worldwide to benefit from each other (Jafari & Kaufman, 2006).

Thus, e-Portfolios offer a variety of benefits to MOOC learners, including enhanced learning through reflection on previous activities, accurate documentation of all necessary skills developed during the course, and preparation for career preparation. Carefully designed and integrated, e-Portfolios have the potential to enhance the MOOC experience in ways that persist even in times of resource scarcity, which is likely to occur as more MOOCs move online. However, challenges persist, particularly with regard to technology access. E-Portfolios not only facilitate the documentation, reflection, and demonstration of learning achievements, but also connect the academic world to meaningful real-world, career-oriented applications, making them a powerful conduit for modern education aimed at preparing professionals.

Methodology

Research Design

We utilized a mixed-methods research design to evaluate the developmental, implementation, and effectiveness of an e-Portfolio platform with respect to undergraduate education students at Thaksin University. This mixed-method approach contributes to scholarly calls for more holistic assessment of digital learning technologies (Creswell & Plano Clark, 2017; Johnson & Onwuegbuzie, 2004) by evaluating both quantifiable measures and student perceptions in a single methodology.

Participants

The study used an experimental sample of 60 undergraduate students from the Faculty of Education at Thaksin University, who were enrolled in the second semester of the academic year 2024. Since the program would implement the platform in all courses for pre-service educators, it was crucial to scrutinize its effectiveness with at least some future teachers. Therefore, this analysis focused on a sample type commonly used in similar e-Portfolio research on teacher education (Granberg, 2010). The study received ethical approval, and we informed participants about the study's purpose and their right to withdraw at any time.

Instrumentation and platform development.

This study utilized resources from across multiple MOOCs to draw upon current, state-of-the-art knowledge, practices, and expert perspectives in e-Portfolio design and instruction technology and digital assessment as part of the development phase of the e-Portfolio platform. This approach was inexpensive and allowed for a scalable design of an educationally rigorous, pedagogically sound platform.

e-Portfolio Platform Design

Experts in educational technology and users assisted in its creation through numerous iterations. MOOCs played a pivotal role during this phase in that they provided additional access to specialized courses specifically around digital portfolio development, user-centered design, and strategies for assessing student learning. Several MOOCs, particularly "e-Portfolio Development" from Coursera and "Design and Development of Digital Learning Environments" from edX, provided us with valuable content knowledge and case studies of the design process, which significantly influenced our practice.

Highlight platform capabilities consist of:

1. Customizable Templates: Based on the lessons learned from MOOCs, the platform features customizable templates that allow students to customize the layout and organization to suit their needs, making it more personalized and practical.
2. Incorporation of Multimedia: A Future Learn course on best practices for multimedia integration in education resulted in features that allow students to incorporate videos, images, and other interactive content as evidence of their skill expression.
3. Integrate Reflection & Feedback Mechanisms: By leveraging research from MOOCs such as Canvas Network's "Learning to Learn Online," we prompt participants with reflection questions every few lessons and provide them with guided options to offer feedback on the course. This approach enables students to regularly document their progress and provides opportunities for both peer and instructor feedback, both of which acknowledge self-assessment and metacognitive skills.

Data Collection Instruments

1. Satisfaction Questionnaire: A technology acceptance model (TAM)-based questionnaire evaluated platform usability, relevance, and eye-perceived educational impact. Insights from existing MOOCs on digital tools in

education, such as the section "Digital Learning Design", also informed the design of the questionnaire. We specifically targeted and aligned the questions asked with current trends about what drives technology acceptance in educational contexts.

2. Reflective journals: Students completed reflective journals during the semester to articulate qualitative insights into their experiences and perceptions. The e-Portfolio primarily employed reflective practices, drawing heavily from MOOCs, while also encouraging students to critically and seriously reflect on their learning experience. Sample frameworks for reflection found in MOOCs offered structured prompts that encouraged more consistent and quality reflections.

Platform Evaluation and Improvement

Throughout the platform's development and use, MOOCs served as a valuable resource for continuous improvement. We analyzed participant feedback alongside insights from further MOOC courses, enabling iterative modifications based on both real-time user data and emerging best practices in digital learning environments.

Incorporating MOOCs into the platform was a way of ensuring that its design remained internationally up-to-date but also proved to be an efficient and resourceful mechanism for accessing varied voices on e-Portfolio and instructional design in line with modern-day educational demands.

Data Collection Procedures

Data collection In three phases, we collected data.

1. Baseline survey: gauged students thinking about e-Portfolios pre-implementation and what they expected.
2. e-Portfolio platform: Throughout the 16-week semester, students used the e-Portfolio platform. They filled out reflective journals on three occasions, following previously established protocols for reflection studies, to capture changes in perceptions over time (Goggins & Elwood, 2014).
3. Survey After the Implementation: At the end of the semester, students filled out a post-use survey regarding platform usability and relevance as well as its influence on learning and employability.

Data Analysis

Quantitative Analysis

We analyzed the survey data using both descriptive and inferential statistics. Follow-up scores indicated perceived improvement in both learning (0.66, $p < .0001$) and employability skills (0.90, $p < .0001$). We compared the follow-up scores using paired t-tests, and descriptive statistics provided information on means and standard deviations.

Qualitative Analysis

We used thematic analysis to analyze qualitative data from reflective journals. We constructed an inductive coding table using the framework of Braun and Clarke (2006) to uncover common themes related to self-reflection, skills, and technical challenges. It also opened up space for a deeper understanding of the students' subjectivities concerning their experience with the platform, something previously identified as a gap in contextualized qualitative research on e-Portfolios (Beck & Bear, 2009; Chen & Macfarlane, 2019).

Research Results

1. The e-Portfolio platform

The implementation of the e-Portfolio platform at Thaksin University's Faculty of Education demonstrated notable improvements in student learning outcomes, self-reflection, and career preparedness. Results showed that students benefited from features like multimedia integration and customizable templates, which enhanced engagement and confidence in showcasing skills. In general, this platform truly connects academic accomplishments and skills, which prepare learners not only for their academics but also in professional workforces. The findings of the research are:

Platform Components

The Faculty of Education at Thaksin University created the e-Portfolio platform for undergraduate students to facilitate structured, reflective, and holistic formative documentation of both academic and personal development. We describe the platform's nine essential components below, highlighting how each element contributed to a meaningful portfolio experience and met the objectives of this research.

1. Overview and description

This component enabled students to create a professional introduction, including sections for personal details, educational history, and academic and career goals.

The students reported that having the opportunity to present themselves this way was helpful for being able to briefly explain their background, abilities, and future goals. Students could use the portfolio to showcase only pieces of work that highlight relevant experience and interests, thereby building an identity all their own within it that would make them more confident in professional settings (Lankes, 2008).

2. Aims for Presenting the Portfolio

Students must clearly articulate the purpose of their portfolio to ensure that the platform effectively supports their learning objectives. The platform provided students with the chance to express their purpose, the rationale behind choosing their area of focus, and the primary activities they intended to carry out to accomplish these objectives.

This aspect facilitated goal-based learning by supporting students in drawing purposeful links between their studies and professional goals (Donnelly & O’Keeffe, 2013).

3. Evidence of work and learning.

This could involve students showcasing their understanding of the subject and its practical applications through the presentation of evidence, such as reports or assignments, or through their own creations. This enabled students to document their process and development, a key component of developing an academic portfolio (Chen & Hwang, 2014). For instance, considering a self-reflection journal facilitated an understanding of the learning process, including the challenges and tools acquired.

4. Self-Reflection Journals

The journal part of the self-reflection asked students every day to reflect on what they learned, the evaluation of themselves, and their views regarding the subjects studied in their classes and their instructors. The practice of reflecting prompted more in-depth interaction with course material and helped cultivate critical thinking. Students found that being able to relate their reflection to the learning objectives of the subject and develop a personalized plan for improvement based on this was valuable.

5. Supporting Evidence and Certifications

Students had the option to include supporting documents such as certificates from relevant training or workshops, as well as samples of their work that demonstrated the skills they had learned. Such a component enabled students to confirm their skills through external certifications, giving potential employers an objective benchmark of applicants (Granberg, 2010). Portfolios were authentic and realistic due to the feedback from instructors and peers.

6. Experience and relevant work

The latter part of the module was particularly beneficial for students who had undertaken internships or fieldwork. Students could write about relevant projects, research, and volunteer experiences that aligned with their learning, enabling them to apply the knowledge they gained in the classroom. Students demonstrated real-world engagement and the local relevance of their academic (and civic) work, a crucial element in linking education to professional readiness (Ward & Moser, 2008).

7. Artifacts and evidence of learning

The platform enabled students to showcase their learning in a dynamic manner by hosting multimedia evidence, including project summary videos, presentation slides, and photos of data visualizations. This functionality effectively addressed the context of use, showcasing students' applied knowledge in measurement, assessment, and statistical analysis (Cambridge, Cambridge & Yancey, 2018).

8. Evaluation and feedback

The evaluation part of the template allowed students to add assessment outcomes and feedback from teachers and peers, which they found beneficial for their growth. These reflective prompts led the students to think about what their strengths and weaknesses were, promoting a culture of endless self-assessment. Students indicated that feedback integration into their portfolios helped them pinpoint learning outcomes and identify skills needing further instruction (Wilhelm et al., 2006).

9. Future goals and aspirations

These elements helped students establish continued career benchmarks and skills they wished to gain. Focusing students by relating the learning happening currently to a career path in the future gave them more intention and purpose in their studies. Students were able to document future professional goals (i.e., an advanced degree in data analysis or educational research methods), helping them visualize how present achievements align with their future selves.

These nine elements each offered a framework that not only enriched the student's academic experience but also trained them for possible future professions. From the overview and description, specific objectives, evidence of work, self-reflection, supporting evidence, work experience, learning artifacts, and skill success evaluated, to feedback given to future goals—each piece was important in the development of a comprehensive portfolio that promotes reflective learning but also career as well as skills documentation. These outcomes remain consistent with the purposes of the higher education e-portfolio and highlight how the platform is successfully closing the gap between theory and practice.

2. Student Reflections

We also organized several themes from the student reflections we collected through this e-Portfolio platform, which focused on their personal and professional growth. We designed opportunities in the platform for students to reflect on their own progress, areas where they needed improvement, and goals both academically and after graduation. Analysis of student reflections yielded the following key findings:

1. Increased Self-Awareness

Students reported an increased self-awareness of their strengths and weaknesses in a given subject. Through the chronicling of their successes and struggles, as well as what they were learning from both, students developed a more nuanced perception of their abilities and an awareness of gaps in knowledge. As one student put it, “I was able to literally see how far I had come with the e-Portfolio in a way that would have been difficult to track otherwise. It allowed me to determine what I am excelling at and where I should invest more energy. This indicates

that the e-Portfolio platform played a crucial role in assisting students in developing their metacognitive skills and engaging in continuous self-assessment.

2. Stronger Professional Identity

There was also a sense that the act of curating their e-portfolios played a role in helping many students begin to understand their philosophies and where they might envision their practice. Students reflected on the creations they chose to curate for their portfolio and how their academic accomplishments translated into skills that future employers would seek.

One student wrote, "Organizing my portfolio made me realize how my class projects and internships connect directly with what I want to do in my career." This reflection indicates that the platform not only serves as an academic tool but also acts as a bridge between the classroom and the workplace, reinforcing career-oriented thinking.

3. Growing Reflective Practice

The e-portfolio guides students in reflecting on the academic landscape through reflective writing. They said regular use of the platform fostered a reflective practice that encouraged connections between individual tasks, overall learning goals for the course, and their larger educational aspirations. One student described it this way: "The reflections of each project made me really understand how the new skills I am learning in class are all intertwined. It allowed me to see my growth more clearly. The literature on the relationship between reflective learning and learning quality argues that frequent reflection fosters a deeper understanding and application of skills (Gikandi et al. 2011).

4. Enhanced confidence in career preparedness

Some of the student responses indicated greater confidence in how they would present themselves to future employers. Creating a portfolio of achievements and documenting academic projects and internships completed by students also aids in discussing their skills in the workplace.

According to one reflection, "The e-Portfolio gave me something concrete to show potential employers—not just a list of classes I've taken but real examples of my work and what I've learned." This finding suggests that the platform contributed positively to students' employability by facilitating the articulation of their skills and experiences.

5. Enhanced Motivation through Goal-Setting Practices

Several students said that keeping an e-portfolio encouraged them to align sets of personal academic and professional goals for themselves. Being able to see their progress and achievements over time motivated students to continually do better. Another student noted, "The realization of my progress motivated me to undertake more projects and set more ambitious goals." It's like a reminder of what I've accomplished and where I want to go." This highlights the e-Portfolio's role as a motivational tool, driving students to actively pursue and document their learning objectives. The reflections indicate that the e-Portfolio platform significantly impacted students' academic and professional growth.

The platform effectively promoted holistic student growth by encouraging self-reflection, professional identity development, reflection on practice, improving career preparation, and inspiring goal-setting. Such findings emphasize the e-portfolio as a multi-functional educational resource that simultaneously develops academic performance and assessment whilst increasing employability by catering to contemporary attitudes of education being aimed at lifelong learning, employability, and/or student success.

6. Career Preparedness

The e-Portfolio platform had a substantial effect on students' readiness for careers, with more than 85% of respondents reporting that their use of the platform increased their confidence in presenting skills and accomplishments to potential employers. The customizable templates and multimedia integration of the platform enabled them to produce visually attractive and comprehensive portfolios that showcased academic along with extracurricular achievements, as students reported.

Implications: These results suggest that the e-Portfolio platform is a useful resource for career preparations where students can showcase a refined and genuine sense of their skill set and experiences. This aligns with prior research demonstrating that e-Portfolios enhance employability by fostering self-reflection, digital fluency, and professional practice (Buckley et al., 2009).

Discussion

The development and implementation of an e-Portfolio platform for undergraduate students in the Faculty of Education at Thaksin University provide significant insights into digital portfolios' role in enhancing reflective learning, facilitating career readiness, and overcoming technological barriers. This section discusses these findings in the context of contemporary e-Portfolio literature, identifying novel contributions and implications for future educational practice and research.

1. Evaluation of Own Practice and Reflection

The results show that e-portfolios contribute to a more reflective experience and assist students in developing a reflective frame of reference that focuses on academic progress, career-oriented choices with respect to learning, and professional identity. Research has also supported this connection between reflective learning and

metacognitive growth [Abrami, Mastrojeni, & Pugh, 2008]—a relationship that tends to be more transparent in fields of study where awareness through self-observation and ongoing adaptation is a main process. Students reported that reflecting on their learning artifacts and documenting reflections over time allowed them to see their growth as a person and student, which becomes increasingly congruent with self-regulated learning skills as identified by Nicol and MacFarlane-Dick (2006). The platform's structured reflection prompts provided a scaffold for students to evaluate their strengths, weaknesses, and progress—demonstrating the potential of e-Portfolios to operationalize reflection as part of an academic program (Llorens, Capdeferro, & Adell, 2019).

This finding reinforces previous research demonstrating that e-Portfolios not only facilitate the reflection of academic thinking, but also assist students in integrating this knowledge into co-curricular narratives. Recent literature has advocated for the critical inclusion of diverse learning contexts, such as experiential and extracurricular learning, which are often overlooked in discussions about traditional classroom learning, in the conversation about student development (Bass & Eynon, 2009). Thaksin University provided a platform for students to summarize various learning experiences, which enabled them to see that their skills were interrelated—an important step toward holistic skill development that earlier research typically lacks emphasis.

2. Academic learning and career preparedness

Students were able to submit rich evidence of skills, such as videos demonstrating their abilities, examples of teaching materials, and interactive lesson plans, thanks to the platform's power to integrate multimedia elements. This format, which is difficult to replicate on a traditional resume, provides a richer context about their strengths. The field of education (Cambridge et al., 2018) particularly benefits from its integration of practical teaching and theoretical learning. While previous works examined uses of e-Portfolios primarily for assessment (Strudler & Wetzel, 2005), the present study highlights potential benefits of e-Portfolios beyond the classroom as a means to ensure a smoother transition from university to professional employment in terms of teaching and other practice-based professions.

Additionally, students were able to create personalized templates based on their education standards, which allowed them to reflect the skills employers are looking for. These findings align with recent research, which suggests that e-portfolio content aligns with professional standards and enhances employability by providing a scaffolding of skills (Donnelly & O'Keeffe, 2013; Woodward & Nanlohy, 2004). As a result, the Thaksin platform pushes private archives further toward dynamic models in development as e-portfolios for personalized web-based professional branding—thereby adding another insight to our literature format on the theoretical foundations of digital portfolio studies.

3. Addressing Tech and Logistics Challenges

Still, the platform's achievements came with bumps in the road: Initial technical challenges reported by some students (and appearing in reviews) included mastering how to use the interface and finding dependable high-speed internet service. A good match with Buckley et al. Higgins et al. (2009) study, which provides a barrier to e-Portfolio usage in technical literacy. Nevertheless, the E-portfolio platform overcame these issues of opposition by providing technical support in the form of workshops and written guides to facilitate e-Portfolio usage among accountants that revealed the indispensable need for strategic support systems which translates to provide infrastructure, information sharing and guidelines for ensuring inclusion in use process before fostering an environment where open-use policies can be implemented. This method confirms the results of Wilhelm et al. (2006) that highlight the importance of a user-friendly interface and institutional support for successful integration of e-Portfolio.

Interestingly, this study adds a novel dimension by highlighting the specific impact of digital equity on e-Portfolio accessibility. In the context of developing countries like Thailand, where digital divides may impact students' ability to fully leverage educational technology, the Thaksin University platform's focus on equitable access is particularly valuable. In order to focus on widening the use of e-Portfolio and making it work for every type of student population we need to make sure that all has equal digital literacy as well as resources (Chen & Macfarlane, 2019). Thus, although e-Portfolio may be a global project it still needs to take locally defined definitions of digital literacy as well as differences in access into account when designing the platform thereby adding a cultural dimension to the analysis of e-Portfolio implementation.

4. Implications of practice and future research

Conclusion on e-Portfolio platform of Thaksin University has created several implications for educators and policy makers. The introduction of an e-Portfolio design that includes structured reflection prompts and a career focus may help to promote student engagement with the assessment task, as well as workplace readiness in elements 35–39 of the rubric. In addition, individualized support for students with different levels of digital literacy might make e-Portfolio much more effective in such wide-ranging educational contexts. Echoing recent studies promoting the position of e-Portfolios as an integral part of current curriculums and showing evidence that they also underpin both academic and employability.

Future research should consider longitudinal studies tracking graduates' career trajectories to assess how e-Portfolios influence employment outcomes and professional development over time. Additionally, as this study highlights the importance of local context, future investigations could explore how cultural and infrastructural

factors impact e-Portfolio adoption in various global regions, expanding the discourse on equitable access to educational technology (Lankes, 2008; Ryan, 2018).

Conclusion

The development of an e-Portfolio system for undergraduates in the Faculty of Education at Thaksin University is a progressive step toward modernizing student assessment and professional development (Cambridge, Cambridge, & Yancey, 2009). This system enables students to document their academic achievements, reflect on their learning experiences, and showcase their skills through an accessible, comprehensive digital portfolio. Findings from this study indicate that e-Portfolios significantly enhance self-reflection, academic integration, and career relevance, aligning with previous research (Boustani et al., 2024; Gikandi, Morrow, & Davis, 2011). Students also reported increased self-awareness and a deeper understanding of their competencies, allowing them to connect their academic strengths with professional expectations.

The platform's user-friendly design, combined with multimedia integration and customizable templates, provides an experience tailored to the pedagogical needs of teacher education students (Chen & Chen, 2018). Initial technological challenges were addressed through training sessions, helping students adapt to the digital format and boosting their engagement and learning outcomes. These findings align with current literature on the potential of e-Portfolios to promote lifelong learning and reflective practice, suggesting they could serve as a sustainable assessment tool in higher education (Barrett, 2010; Gibson, 2020).

Recommendations

We propose the following recommendations for educators, institutions, and future researchers considering these findings:

1. **Integration with Curriculum:** To fully realize the potential of e-Portfolios, the curriculum must integrate the platform as an official part of course assessments. This allows students to document their learning over time regularly and reflect on their learning, making e-Portfolios the best practice for the academic student experience.
2. **Improved tech support and training:** Successful implementation demands constant support and training for students and faculty from the university. It can overcome early technology challenges by helping users make the most of all the platform has to offer, creating a better learning experience overall.
3. **Engagement with Industry Stakeholders:** An ideal e-Portfolio platform for institutions could effectively gather information from industry partners, enabling students to design e-Portfolios that better align with potential market needs. Such a collaboration can increase employability, as the skills documented in the portfolio will be in line with what is required by industry.
4. **Longitudinal Studies on Impact** We now need to assess the long-term impact of e-Portfolio use on student career success, professional development, and lifelong learning through longitudinal studies. These studies would potentially show how the platform functions outside an educational context and determine its viability as a lifelong learning tool [4].
5. **Extension in other faculties:** In line with positive results achieved, Thaksin University should expand the business of e-Portfolio to other faculties. This could lead to one common cross-coalition platform that encourages reflective practice and digital literacy for every student.

The current study's developed e-Portfolio platform serves as a model for enhancing student learning, reflection, and career readiness. Through the implementation of these recommendations, universities can continue utilizing e-Portfolios so that they may bolster a more cohesive and meaningful education that provides students with necessary skillsets for their academic and professional lives.

Acknowledgement

We are deeply appreciative of the Educational Faculty at Thaksin University for their invaluable support, research funds, and resources, which have significantly facilitated the successful completion of this project.

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