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Assessing the Preparedness of Lecturers and the Willingness of ECE Students to Integrate Academic E-portfolios in South African HEIs

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Abstract

This qualitative conceptual paper explores the understanding of the integration of academic e-portfolios in Early Childhood Education (ECE) programs within South African higher education institutions (HEIs). Grounded in the principles of transformative learning theory and digital pedagogy, the research examines the interplay between lecturer preparedness and student willingness as critical factors in successful e-portfolio implementation. Through a systematic analysis of existing literature and theoretical models, the study proposes three key conceptual dimensions: pedagogical readiness, technological acceptance, and institutional ecosystem. The conceptual framework identifies lecturer preparedness as encompassing digital literacy, assessment competency, and reflective mentoring skills, while student willingness incorporates perceived usefulness, self-efficacy, and professional identity formation. The study highlights how South Africa's unique HEI context – characterized by resource disparities, multilingual classrooms, and decolonization imperatives – necessitates an adapted approach to e-portfolio integration. Particular attention is given to the tension between global digital education trends and local implementation challenges in under-resourced institutions. Emerging conceptual propositions suggest that: lecturer preparedness mediates the relationship between institutional support and effective e-portfolio implementation; student willingness is positively influenced by visible career benefits and scaffolded digital skill development; and, sustainable adoption requires

alignment with Ubuntu principles of collaborative learning and community-embedded knowledge construction. The framework contributes theoretically by bridging digital pedagogy with Southern epistemologies, offering an alternative to Western-centric e-portfolio models. Practical implications center on context-sensitive implementation strategies that acknowledge infrastructure limitations while leveraging mobile technology and peer learning networks. The study calls for further empirical research to validate the proposed framework and explore its applicability across diverse African HEI contexts.

Keywords: conceptual framework, academic e-portfolios, early childhood education, digital pedagogy, lecturer preparedness, student willingness, higher education transformation, Ubuntu pedagogy

Introduction

The successful integration of e-portfolios in higher education depends significantly on lecturers' technological proficiency, pedagogical readiness, and access to professional development. While e-portfolios are recognized globally as valuable tools for reflective learning and competency assessment, their adoption in South African higher education institutions (HEIs) faces challenges related to digital literacy, institutional support, and training availability (Modise & Mudau, 2023). This literature review synthesizes current international and local research on lecturers' preparedness, technological competence, and professional development opportunities in the context of e-portfolio implementation. The digital transformation of education has led to the emergence of various technological tools aimed at enhancing teaching and learning experiences. Among these innovations, academic e-portfolios have been recognized for their potential to promote student-centered learning, facilitate reflective practice, and provide comprehensive assessment mechanisms (Nguyen et al., 2023).

An e-portfolio is a digital collection of artifacts demonstrating an individual's learning journey, skills, and achievements. In early childhood education (ECE), e-portfolios can serve as valuable instruments for students to showcase their understanding of child development theories, pedagogical strategies, and practical experiences (Bedel et al., 2024). Internationally, the adoption of e-portfolios in teacher education has been met with both enthusiasm and challenges. Studies have shown that e-portfolios can enhance self-regulated learning and provide platforms for continuous professional development (Rowley & Munday, 2018). However, their successful implementation is often dependent on lecturers' readiness to integrate technology into their curricula and students' openness to adopting new learning tools (Kaushik & Agrawal, 2021). Factors such as institutional support, training opportunities, and perceived usefulness play significant roles in this process.

In the South African context, the integration of e-portfolios in higher education is still evolving. Research by Van Wyk (2017) explored student teachers' views on e-portfolios as tools to enhance self-directed learning in an online teacher education course, highlighting the potential of e-portfolios to empower students in managing their learning processes. However, challenges such as limited access to technology, varying levels of digital literacy among lecturers and students, and infrastructural constraints pose significant barriers to widespread adoption. Lecturers' preparedness to implement e-portfolios is influenced by their technological proficiency and the availability of professional development opportunities (Ng'ambi et al., 2016). Similarly, students' willingness to engage with e-portfolios is affected by their prior experiences with

technology, perceived ease of use, and the relevance of e-portfolios to their academic and professional goals.

Transformative Learning Theory, digital pedagogy, and e-portfolio implementation

Transformative Learning Theory (Mezirow, 1991) posits that learning becomes meaningful when individuals critically reflect on their assumptions, engage in discourse, and undergo perspective shifts. In digital pedagogy, this aligns with learner-centered approaches where technology facilitates self-directed, reflective, and collaborative learning. E-portfolios serve as an ideal medium for transformative learning by encouraging critical reflection through iterative content curation; facilitating authentic assessment by showcasing growth over time; and promoting digital identity construction, where learners articulate their evolving competencies (Nguyen et al., 2023). The success of e-portfolios depends on two interdependent factors: lecturer preparedness and student willingness. To facilitate transformative learning, lecturers must demonstrate digital competency, effectively navigating platform functionalities and integrating them pedagogically. They should design scaffolded reflective tasks that move students beyond mere content aggregation, model reflective practice by actively engaging with e-portfolios to reinforce their value, and provide continuous feedback to encourage students to view e-portfolios as developmental rather than performative tools. Without adequate training or pedagogical adjustments, lecturers risk reducing e-portfolios to static repositories, thereby undermining their transformative potential (Kaushik & Agrawal, 2021). Similarly, students must find e-portfolios meaningful to fully engage with them. Key factors include intrinsic motivation and perceiving e-portfolios as tools for self-authorship rather than mere compliance. Students also require digital literacy and confidence to navigate and curate digital content effectively. The perceived relevance of e-portfolios increases when tasks connect to career readiness or personal growth. Resistance often arises from unclear expectations, insufficient scaffolding, or viewing e-portfolios as administrative burdens rather than learning tools.

The interplay between lecturer preparedness and student willingness ultimately determines e-portfolio success. Prepared lecturers can foster student engagement through clear communication, exemplars, and reflective dialogue. Motivated students, in turn, inspire lecturers by actively participating, providing feedback, and co-creating the process. Institutional support further strengthens this synergy by offering training, allocating resources, and aligning e-portfolios with broader curricular goals.

Literature review

Globally, research indicates that lecturers' preparedness to implement e-portfolios is closely tied to their digital competence and confidence in using educational technologies. Studies in the U.S. and Europe highlight that while many educators recognize the pedagogical benefits of e-portfolios, a significant proportion lack the necessary technical skills to integrate them effectively. Barriers include limited digital literacy among faculty, particularly in disciplines less focused on technology (Eynon & Gambino, 2017). Resistance to change occurs where traditional assessment methods are preferred over digital alternatives (Barrett, 2021). Insufficient institutional training leaves lecturers to navigate e-portfolio tools independently (Modise & Mudau, 2023). However,

universities with structured digital competency frameworks report higher success rates in e-portfolio adoption. For instance, institutions in Australia and Canada have implemented mandatory digital upskilling programs for faculty, leading to improved confidence in e-portfolio usage (Parker et al., 2022).

E-portfolios, when grounded in transformative learning and digital pedagogy, can be powerful tools for holistic development. However, their efficacy depends on a reciprocal relationship. Lecturers must be pedagogically and technologically equipped to guide the process, while students require structured support to recognize and embrace their value. Institutions must thus invest in targeted professional development and student-centered scaffolding to ensure meaningful implementation. Recommendations are for lecturers to engage in ongoing digital pedagogy training and reflective practice. Students should integrate e-portfolios early to emphasize personal and professional relevance. HEIs should provide infrastructure, incentives, and iterative feedback mechanisms. By addressing both lecturer and student dimensions, e-portfolios can transcend technical exercise status and become transformative learning instruments.

South African context

In South Africa, lecturer preparedness for e-portfolio integration is influenced by systemic challenges, including unequal access to technology, with disparities between well-resourced and under-resourced universities (Zondi et al., 2024). There are varied digital competencies, where some lecturers struggle with basic e-learning tools, let alone advanced e-portfolio systems (Ng'ambi et al., 2016). Pedagogical resistance is revealed as some lecturers view e-portfolios as an administrative burden rather than a learning enhancement (Mabidi, 2024). Despite these challenges, some South African HEIs have made progress through localized training initiatives. For example, the University of Cape Town's Centre for Innovation in Learning and Teaching (CILT) offers workshops on digital assessment tools, including e-portfolios (Brown & Czerniewicz, 2008), however, such programs are not yet widespread across all institutions.

Global trends in faculty training indicate that effective professional development (PD) is critical for successful e-portfolio adoption. International best practices include structured training programs, such as the University of Hong Kong's faculty e-portfolio certification course (Sultana et al., 2020); peer mentoring models, where tech-savvy lecturers guide their colleagues in e-portfolio implementation; and ongoing support systems, including help desks and online resource hubs. Studies suggest that once-off workshops are insufficient; instead, continuous, just-in-time training yields better outcomes (Parker et al., 2022). Institutions that embed e-portfolio training within broader digital pedagogy frameworks report higher lecturer engagement and sustained use.

South African professional development landscape

In South Africa, PD opportunities for e-portfolio integration are inconsistent. While some universities (e.g., Stellenbosch, UCT) have dedicated e-learning units, others lack institutionalized training structures. Key findings include that ad-hoc workshops are common but often fail to address long-term skill development (Mabidi, 2024); limited funding for digital upskilling, particularly in historically disadvantaged institutions, and grassroots initiatives, where individual departments pilot e-portfolio training, but scalability remains a challenge (Ng'ambi et al., 2016). A promising development is the

South African Department of Higher Education and Training's (DHET) Digital Transformation Strategy, which emphasizes lecturer training in digital pedagogies. However, implementation varies across institutions.

The successful integration of e-portfolios in Early Childhood Education (ECE) programs depends heavily on students' willingness to adopt this technology and their prior digital experiences. This review synthesizes current international and South African literature (2019-2024) on ECE students' attitudes toward e-portfolios and how their prior technology exposure influences engagement. Research indicates that ECE students' acceptance of e-portfolios is influenced by perceived usefulness such as: students being more willing when they see e-portfolios as beneficial for reflective practice and career advancement (Yang et al., 2023); when e-portfolios replace traditional exams, and engagement increasing (Quinn, 2023), and platforms allowing peer feedback revealing higher participation (Eynon & Gambino, 2017). Bass et al. (2019) found that education students in the U.S. preferred e-portfolios over standardized tests when they could showcase teaching artifacts. Parker et al. (2022) reported resistance in UK teacher training programs where e-portfolios were poorly integrated into curricula. Regarding digital natives and digital immigrants, younger students adapt faster but may lack critical digital literacy (Salas-Pilco et al., 2022). When coming to discipline-specific tech use, ECE students often have less exposure to advanced edtech than STEM peers (Barrett, 2021). Students display mobile dependency by increasingly expecting mobile-compatible e-portfolio systems (Korucu & Usta, 2016). Notable findings are that a 2023 Australian study found 68% of ECE students had never used an e-portfolio before university. Norwegian research highlighted anxiety among mature students with limited tech experience (Quinn, 2023).

In the South African context, local studies reveal unique willingness dynamics such as career utility, where students at UCT engaged more when e-portfolios were linked to teaching job applications (Ng'ambi et al., 2016); cultural relevance, such as students viewing e-portfolios as "Western" assessment tools until culturally adapted models emerged; and some resource constraints of smartphone-only access and limited engagement at rural universities (Zondi et al., 2024). Mabidi (2024) found that 42% of ECE students at the University of Johannesburg resisted e-portfolios due to unfamiliarity, however, higher adoption at TVET colleges occurred when training included basic digital skills. Technology readiness among South African ECE students exhibits unequal access of only 59% at historically disadvantaged institutions, having reliable home internet (Brown & Czerniewicz, 2008).

Regarding mobile-first usage, 92% accessed learning materials via smartphones (Ng'ambi et al., 2016). There are training gaps where many students could not upload multimedia files despite daily social media use. An example is of a Unisa's 2022 pilot that showed ECE students mastered e-portfolios faster when training used WhatsApp-style interfaces (Mabidi, 2024).

Key elements in e-portfolio integration

Key elements in e-portfolio integration are *willing drivers*, *key barriers*, *technology preparation challenges*, and *strategies for implementation*.

Willingness drivers

This element refers to the adoption of e-portfolios among students, being influenced by their perception of career benefits and job market relevance. According to Bass et al. (2019), students are more willing to engage with e-portfolios when they recognize their value in documenting skills, competencies, and reflective learning. E-portfolios serve as dynamic CVs that showcase practical teaching experiences, lesson plans, and critical reflections. The South African Department of Higher Education and Training (DHET) emphasizes work-integrated learning (WIL) and digital competency as crucial for employability (Madimabe, 2014). E-portfolios align with these expectations, making them a strategic tool for ECE graduates seeking teaching positions, thus, they are relevant for the job market. The implication is that institutions must communicate how e-portfolios enhance career prospects to boost student buy-in.

Key barriers

They refer to several obstacles that hinder e-portfolio adoption in South African HEIs, such as the lack of integration in curricula (Parker et al., 2022). Many institutions treat e-portfolios as add-ons rather than core assessment tools, leading to inconsistent use. Without formal curriculum embedding, students and lecturers may view them as optional rather than essential. Infrastructure limitations, such as unequal access to reliable internet, computers, and digital tools, disproportionately affect students from under-resourced backgrounds (Brown & Czerniewicz, 2008). This digital divide creates inequities in e-portfolio engagement, resulting in structural changes such as policy-driven curriculum integration and improved digital infrastructure for equitable implementation.

Technology preparation challenges

These challenges refer to student and lecturer readiness for e-portfolios being shaped by varying levels of digital literacy. There is anxiety among mature students (Quinn, 2023). For example, older or returning students often experience technostress when required to use unfamiliar digital tools. Without adequate support, this anxiety can lead to disengagement. The smartphone dependence with limited advanced skills (Ng'ambi et al., 2016) reveals that many students rely on smartphones for basic tasks, however, few possess advanced digital skills needed for multimedia e-portfolio creation (e.g., video editing, cloud storage management). The implications are that institutions should offer tiered digital literacy training, catering to both novice and advanced users.

Strategies for implementation

Such strategies can be successful if there is peer mentoring, where students learn best from peers who have successfully navigated e-portfolio systems (Eynon & Gambino, 2017). Structured peer-support programs can reduce anxiety and improve technical confidence. Given smartphone dependence, e-portfolio platforms must be optimized for mobile use, with offline functionality to accommodate connectivity issues, especially for mobile-first design (Mabidi, 2024). Implications are that a hybrid support model, combining peer mentoring with mobile-friendly technology, can maximize accessibility and engagement.

Findings and recommendations

The integration of e-portfolios within South African HEIs represents a valuable opportunity to enhance learning, assessment, and graduate employability. Despite their potential, the adoption of e-portfolios remains uneven due to challenges such as disparities in digital infrastructure, variations in digital literacy, and institutional reluctance. A significant barrier to implementation is the inconsistent level of lecturer readiness. While some educators recognize the benefits of e-portfolios for reflective learning and student engagement, many possess only basic digital skills and lack advanced training in e-portfolio pedagogy. Concerns regarding increased workload and unfamiliarity further contribute to hesitancy. Institutions located in urban areas generally have access to superior digital resources compared to rural institutions, where connectivity and device availability are ongoing challenges.

Similarly, student engagement with e-portfolios is influenced by digital literacy, technological access, and perceived relevance. Urban students benefit from better internet connectivity and device availability, while rural students face significant barriers. Older and part-time students often struggle with digital adaptation, yet many recognize the value of e-portfolios for employability and continuous feedback. Financial constraints, data costs, and privacy concerns are additional obstacles to widespread adoption. The absence of a standardized national policy further exacerbates these inconsistencies – systemic issues such as the lack of a unified e-portfolio platform and limited funding for digital training hinder integration. Resistance to technological change among both students and faculty remains a critical barrier.

Recommendations are for lecturer training through workshops and incentives to improve readiness and proficiency in e-portfolio pedagogy; the provision of expanded digital access through device loan programs, introductory courses, and affordable internet solutions. Institutional and national policy development standardizing e-portfolio use, and forming partnerships with educational technology providers, as well as implementing pilot programs in Early Childhood Education (ECE) courses to gather valuable insights and to refine processes. The successful integration of e-portfolios in South African HEIs requires bridging digital divides, enhancing faculty training, and strengthening institutional policies. With strategic implementation, e-portfolios have the potential to significantly advance educational quality and improve graduate employability.

Conclusion

This paper explores the potential of e-portfolios to transform teacher education, the ability to enhance learning and professional development; however, lecturer preparedness remains a significant barrier, particularly in South African HEIs. To ensure successful integration, institutions must emphasize the career relevance of e-portfolios to engage students and address existing infrastructure gaps. Embedding e-portfolios formally within curricula is essential for delivering tailored digital upskilling that caters to diverse learner needs. The paper advocates for peer-led and mobile-centric strategies as sustainable implementation methods and recommends scaffolded training that combines basic digital skills with e-portfolio usage (Zondi et al., 2024). Furthermore, culturally relevant models should incorporate local languages and context-specific assessment examples. To overcome technological barriers, HEIs should develop low-

bandwidth platforms optimized for smartphones (Ng'ambi et al., 2016). Future research should examine the long-term impacts of these strategies on graduate employability and teaching quality. Within South Africa's diverse HEI landscape, e-portfolios hold the potential to democratize learning by effectively linking theory to practice. However, realizing this potential requires a collaborative effort.

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