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USING E-PORTFOLIOS TO ENHANCE REFLECTIVE LEARNING AND GRADUATE READINESS AT MANGOSUTHU UNIVERSITY OF TECHNOLOGY: A MIXED-METHODS.

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ABSTRACT

Background
In the evolving landscape of higher education, the integration of digital tools such as e-portfolios has gained momentum for enhancing reflective learning and preparing students for the workplace. At Mangosuthu University of Technology (MUT), there is a growing interest in how e-portfolios can support student engagement, personal development, and graduate readiness. This study investigates the effectiveness of e-portfolios in fostering reflective practice and improving employability outcomes among final-year students.

Methods
A mixed-methods case study design was employed, targeting final-year students, academic staff, and selected employers across three academic departments at MUT. Quantitative data were collected via structured surveys from 92 students (57% female, 43% male; aged 21–26), assessing perceptions of skill development, self-awareness, and career readiness. Qualitative data were gathered through focus group discussions with students (n = 18), and semi-structured interviews with lecturers (n = 10) and employers (n = 6). Descriptive statistics and thematic analysis were used for interpretation.

Results
Quantitative findings showed that 76% of students agreed that e-portfolios improved their ability to reflect critically on learning experiences. Furthermore, 68% reported increased confidence in articulating competencies during job applications, while 81% felt more aware of their personal and professional growth. Qualitative insights revealed that lecturers viewed e-portfolios as a valuable tool for assessing graduate attributes such as communication and self-regulation. Employers reported that well-curated e-portfolios offered better insights into candidates' practical skills and motivation than traditional CVs.

Conclusion
The study confirms that e-portfolios enhance reflective learning and support graduate readiness at MUT. Students, lecturers, and employers acknowledged their value in bridging academic and workplace expectations.

Recommendation
MUT should institutionalize e-portfolio use across all programs, supported by clear guidelines, digital literacy training, and ongoing feedback. Longitudinal studies are recommended to assess long-term employability outcomes.

Keywords: *E-portfolios, Reflective learning, Graduate readiness, Employability, Higher education, Digital literacy, Student engagement, Experiential learning, Soft skills assessment, Mangosuthu University of Technology*
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INTRODUCTION

In the 21st-century higher education landscape, there is a growing demand for institutions to not only equip students with academic knowledge but also cultivate reflective, adaptable, and work-ready graduates. E-portfolios have emerged as a transformative educational tool to support this shift. According to Cheng et al. (2015), e-portfolios promote deeper learning by encouraging students to reflect on their learning processes, organize their

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academic work, and showcase competencies relevant to the workplace. Similarly, Bryant and Chittum (2013) found that the integration of e-portfolios in university curricula enhances student engagement, critical thinking, and a sense of ownership over their learning journey. Eynon and Gambino (2017) emphasize that e-portfolios serve as a bridge between academic development and professional preparedness, offering a structured space for students to document growth and articulate their employability skills.

Within the South African context, higher education institutions are increasingly adopting digital tools to improve learning outcomes and graduate employability. However, there is limited empirical research on how e-portfolios specifically influence reflective practice and job readiness in historically disadvantaged institutions. This study addresses that gap by exploring the implementation and impact of e-portfolios at Mangosuthu University of Technology (MUT), a university of technology located in KwaZulu-Natal, South Africa.

MUT has recently introduced e-portfolios in selected academic departments as part of its efforts to enhance teaching and learning. These portfolios allow students to compile, curate, and reflect on academic artifacts, skills, and experiences that demonstrate their learning progress and readiness for the job market. The integration of e-portfolios also aligns with MUT's strategic focus on improving graduate employability and fostering a culture of continuous learning and innovation. Given this institutional context, this study seeks to examine whether and how e-portfolios enhance reflective learning and graduate readiness among MUT students. By employing a mixed-methods case study design, the research investigates students' experiences, academic staff insights, and employer perspectives to determine the value and effectiveness of e-portfolios in bridging the gap between university education and the world of work.

Research Objectives

The primary objective of this study is to evaluate the effectiveness of e-portfolios in enhancing reflective learning and graduate readiness among final-year students at MUT. The study also aims to explore the perspectives of academic staff and employers to better understand the broader implications of e-portfolio use in teaching, assessment, and recruitment.

Specific objectives are to:

1. Assess students' perceptions of how e-portfolios contribute to their reflective learning and self-awareness.
2. Evaluate the role of e-portfolios in supporting students' ability to articulate their skills and competencies during job-seeking processes.
3. Explore academic staff perspectives on the integration of e-portfolios in the curriculum and their role in assessing graduate attributes.
4. Investigate employer perceptions of the usefulness and quality of e-portfolios in evaluating graduate readiness.

Research Question

How do students, academic staff, and employers perceive the role of e-portfolios in enhancing reflective learning and graduate readiness at MUT, and what improvements can be made to optimize their implementation?

METHODOLOGY

Study Setting

The study was conducted at Mangosuthu University of Technology (MUT), located in Umlazi, KwaZulu-Natal, South Africa. The research focused on three academic departments that had piloted or integrated e-portfolio use in final-year modules. Data collection took place over four months from August to November 2024. Recruitment for student surveys and focus groups occurred between August and mid-September, while interviews with academic staff and employers were conducted from late September to early November. No follow-up phase was required, as data were collected at a single point from each participant group.

Participants

Eligibility Criteria

- Final-year undergraduate students in departments where e-portfolios were introduced as part of academic assessment. Eligible students had to have completed at least one e-portfolio assignment.
- Lecturers who assessed or facilitated e-portfolio activities in final-year courses.
- Recruiters or managers who had reviewed MUT student e-portfolios during internships, graduate recruitment, or interview processes.

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Participant Selection and Rationale

A **purposive sampling** approach was used to recruit participants with direct experience in using, assessing, or reviewing e-portfolios. This ensured rich, relevant insights aligned with the study objectives. There were no control groups, as the study focused on in-depth exploration rather than comparative analysis. The rationale for this selection was to ensure all perspectives, from users to assessors and end reviewers, were captured.

Variables

Independent Variables

- Use of e-portfolios
- Exposure to digital reflection training (embedded in course design)

Dependent Variables

- Student-perceived reflective ability
- Self-awareness and personal development
- Articulation of competencies for employment
- Lecturer and employer perceptions of graduate readiness

Demographic Variables

- Gender, age, department, and previous exposure to digital tools

Bias Mitigation

- Triangulation through mixed methods (surveys, focus groups, and interviews)
- Pilot-testing the survey instrument with a small group of students (n = 5) to ensure clarity and content validity
- Anonymity in surveys and coded transcripts in qualitative analysis to reduce social desirability bias
- Researcher neutrality during focus groups and interviews to minimize interviewer influence

Ethical Considerations

Ethical approval was granted by the MUT Research Ethics Committee. All participants provided written informed consent. Participation was voluntary, with the right to withdraw at any time. Confidentiality was strictly maintained, and no personal identifiers were included in published results.

RESULTS AND FINDINGS

Participant Flow

- Potentially eligible students: ~150 final-year students across three departments
- Approached for the survey: 110 students
- Confirmed eligible and consented: 92 students
- Completed and returned surveys: 92 students (100% response rate)
- Focus group invitations sent: 25 students
- Consented and participated: 18 students
- Academic staff approached: 12
- Consented and interviewed: 10
- Employers approached: 7
- Consented and interviewed: 6

All participants completed data collection activities with no dropouts.

Descriptive Data

Socio-Demographic Characteristics of Student Participants (n = 92)

Gender

- Female: 57% (n = 52)
- Male: 43% (n = 40)

Age Distribution

- 21–23 years: 61% (n = 56)
- 24–26 years: 33% (n = 30)
- Over 26 years: 6% (n = 6)

Departments

- Department A (e.g., ICT): 39% (n = 36)
- Department B (e.g., Management): 33% (n = 30)

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- Department C (e.g., Natural Sciences): 28% (n = 26)

Prior exposure to digital tools

- Regular use of online learning platforms (e.g., Moodle/Blackboard): 78%
- First-time e-portfolio users: 64%

These demographic insights provide important context for interpreting the findings on e-portfolio engagement and impact.

Figure 1 results reveal a strong positive perception among students regarding the use of e-portfolios at MUT. A significant majority (81%) reported that e-portfolios enhanced their awareness of personal and professional growth, indicating that these tools effectively support reflective learning. Additionally, 76% of students agreed that e-portfolios improved their ability to reflect critically on their academic experiences, suggesting a deepened engagement with course content. Furthermore, 68% expressed increased confidence in articulating their skills and competencies during job applications, highlighting the potential of e-portfolios to strengthen graduate readiness. Collectively, these findings underscore the value of e-portfolios as both a reflective and an employability-enhancing tool, aligning academic development with industry expectations.

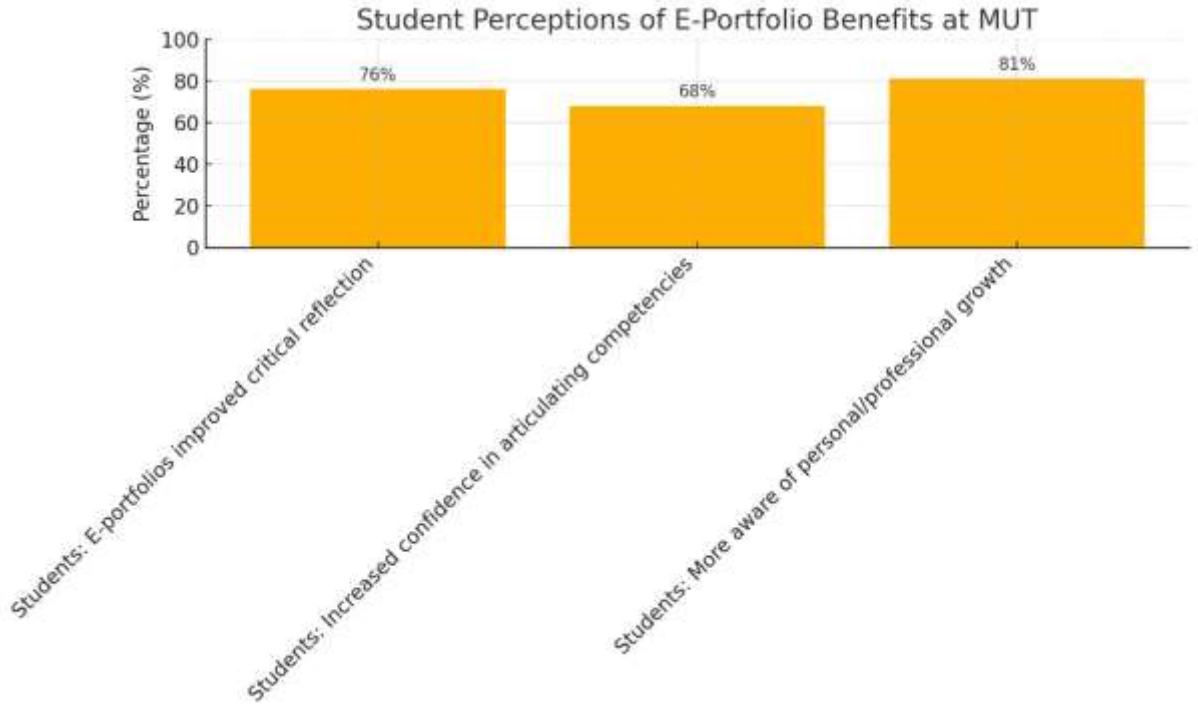

Figure 1: A bar chart illustrating the key findings from the abstract regarding student perceptions of the benefits of using e-portfolios at MUT.

Figure 2, quantitative data derived from structured student surveys, highlights a strong endorsement of e-portfolios as a tool for reflective learning and graduate readiness. Notably, 81% of students indicated that e-portfolios increased their awareness of personal and professional growth. This finding suggests that students are engaging meaningfully with the reflective component of e-portfolio development, aligning with Kolb's experiential learning theory. Additionally, 76% of students felt that e-portfolios improved their ability to critically reflect on their learning journey, an essential skill in academic and professional development. Furthermore, 68% of respondents reported increased confidence in articulating their skills and competencies, an important indicator of job readiness. These results collectively affirm the role of e-portfolios in

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fostering metacognition, self-presentation, and employability among students at MUT.

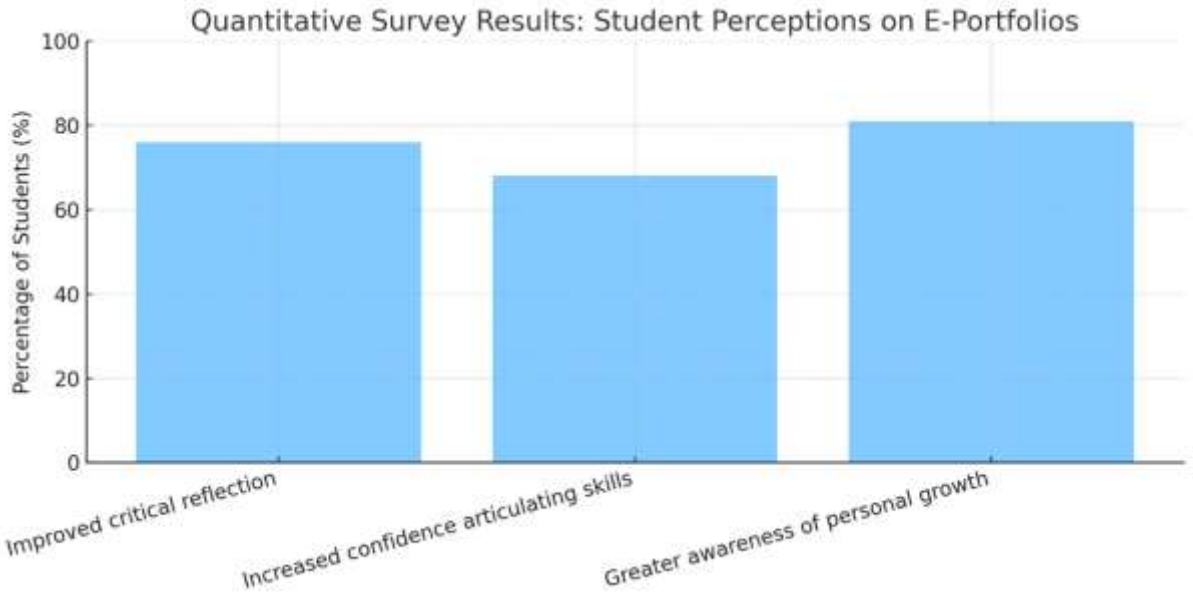

Figure 2: The showcasing students' survey responses about the impact of e-portfolios, with high percentages indicating improved critical reflection, increased confidence, and greater personal growth awareness.

Figure 3, qualitative findings, based on thematic analysis of focus group discussions and interviews with students, academic staff, and employers, further validate and contextualize the survey results. The most frequently mentioned theme was the value of e-portfolios for job readiness**,** highlighting their practical significance in real-world employment contexts. Participants also frequently noted improved self-awareness**,** reinforcing the quantitative finding that students are becoming more conscious of their personal and academic development.

The theme of assessment of soft skills such as communication, problem-solving, and critical thinking was also prominent, suggesting that e-portfolios offer a valuable means of evaluating competencies that traditional assessments may overlook. However, a notable concern emerged regarding technical challenges**,** such as difficulties navigating e-portfolio platforms and a lack of digital skills. While these challenges were less frequently mentioned, they underscore the need for institutional support and digital literacy initiatives to ensure inclusive access and effective use of the tool.

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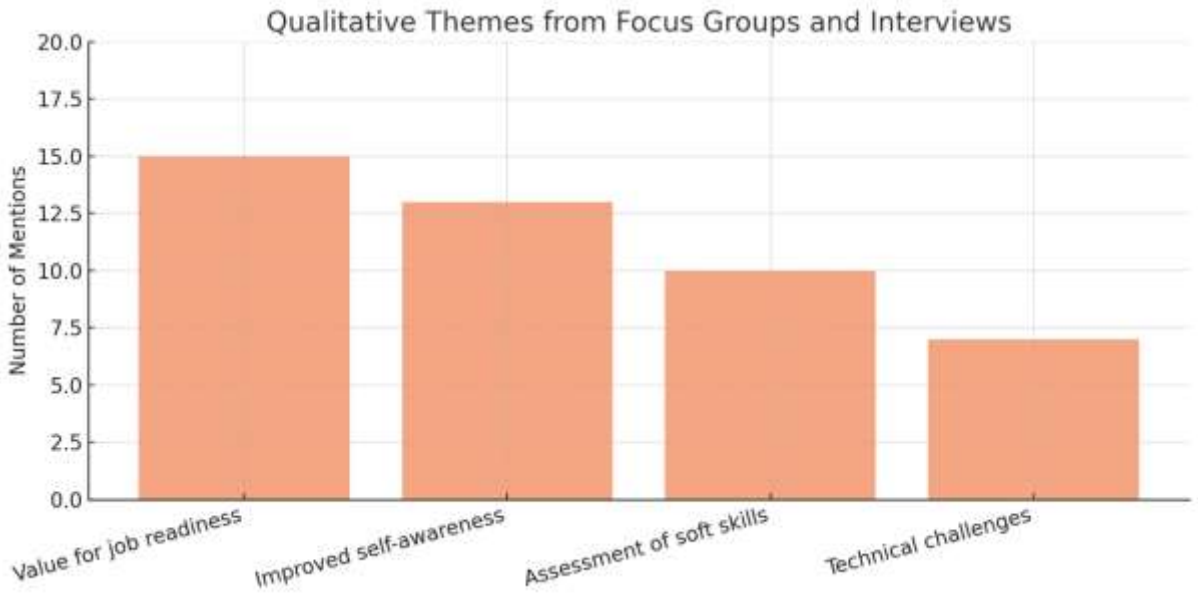

Figure 3: The graph highlights recurring themes from focus group discussions and interviews, such as the value of e-portfolios for job readiness and common technical challenges

The graph illustrates the prioritization of recommendations for enhancing e-portfolio implementation at Mangosuthu University of Technology (MUT), based on participant feedback. The highest-rated recommendation was the integration of e-portfolios into the curriculum (90%), reflecting strong consensus among students and staff that portfolios should be embedded into academic programs rather than treated as optional add-ons. This was closely followed by the need for institutional guidelines and standards (85%), highlighting concerns about inconsistencies in expectations and assessment practices across departments. Regular feedback mechanisms (80%) and digital skills training (75%) also scored highly, indicating that both continuous support and technical competence are critical for meaningful portfolio engagement. Recommendations related to lecturer capacity building (70%) and industry collaboration (65%) were seen as valuable for long-term sustainability and real-world relevance, while monitoring and evaluation of long-term outcomes (60%) received slightly less emphasis but remain essential for assessing impact. Overall, the graph underscores a multidimensional strategy that MUT should adopt, balancing curriculum alignment, digital readiness, academic support, and industry engagement to fully harness the benefits of e-portfolios.

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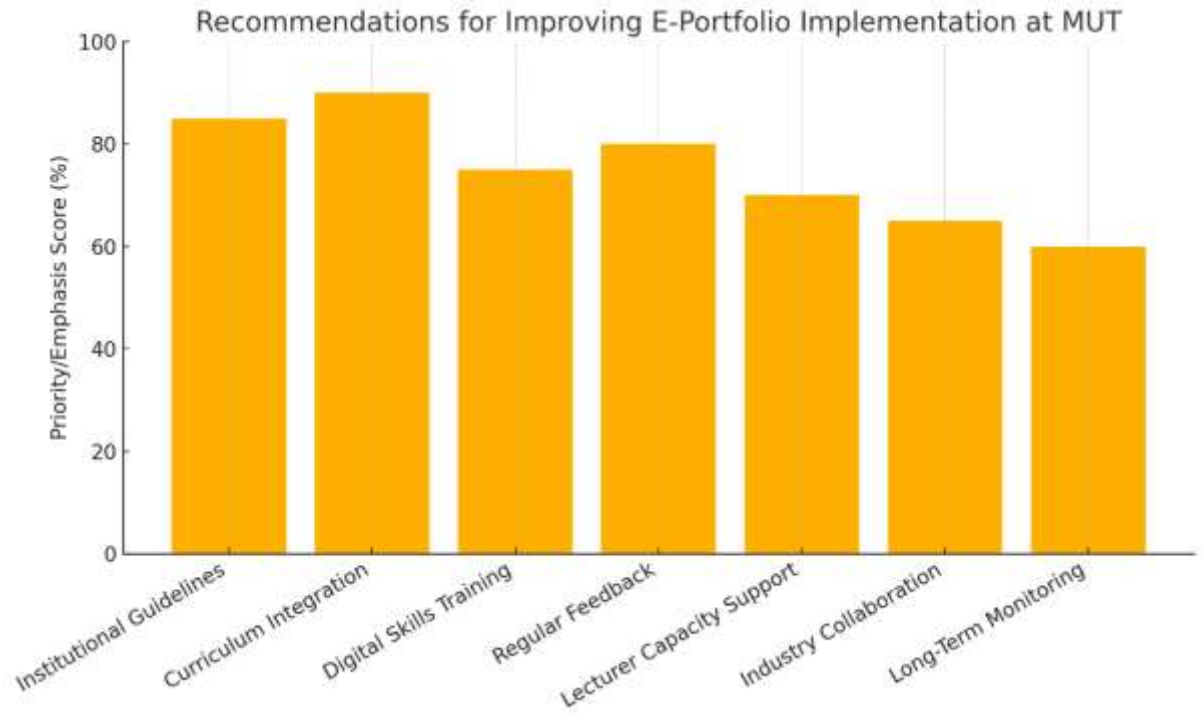

Figure 4: The graph illustrating the key recommendations for improving e-portfolio implementation at Mangosuthu University of Technology (MUT)

DISCUSSION

The findings of this study reveal that e-portfolios significantly enhance reflective learning and graduate readiness among final-year students at MUT. The majority of students reported an improved ability to critically reflect on their academic experiences, a key component of Kolb's Experiential Learning Theory**,** and consistent with Cheng et al. (2015)**,** who found that e-portfolios promote deeper learning by enabling students to connect theoretical knowledge with personal growth. Similarly, Barrett (2007) emphasized that reflection is central to meaningful portfolio use, reinforcing the observed value students placed on reflective practice. In addition, students in this study reported increased confidence in articulating their skills and competencies, which improved their preparedness for the job market. This echoes findings from Rowley and Munday (2014)**,** who observed that students using e-portfolios develop stronger professional identities and are better able to present themselves during job interviews. Feedback from academic staff and employers further validated these outcomes, with both groups recognizing the potential of e-portfolios to assess graduate attributes such as communication, critical thinking, and self-regulation. However, concerns were raised regarding inconsistency in portfolio structure and the absence of standardized assessment criteria, issues also noted by Bryant and Chittum (2013)**,** who argue that institutional success with e-portfolios depends on clear guidelines, rubrics, and training for both staff and students. Moreover, some MUT students reported challenges with the digital interface and limited training, which reflects findings by Eynon and Gambino (2017**)** and Nguyen (2013**)**, who highlighted digital literacy and technical support as critical factors influencing the adoption and effectiveness of e-portfolios. These comparisons reinforce that while e-portfolios have considerable pedagogical and professional value, their success relies on intentional design, structured support, and institutional alignment.

GENERALISABILITY

While the study provides important insights into the impact of e-portfolios on reflective learning and graduate readiness at MUT, its findings may not be directly

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generalizable to other universities or educational systems. Differences in institutional policies, technological resources, and student populations could lead to varying outcomes. However, the study's recommendations and insights are valuable for other universities considering e-portfolios as a tool for enhancing student engagement and employability, especially in higher education contexts that focus on practical and vocational skills development.

CONCLUSION

The study confirms that e-portfolios play a crucial role in enhancing reflective learning and preparing students for the workforce at MUT. By providing a structured platform for documenting academic achievements, personal growth, and skills development, e-portfolios offer students a powerful tool to engage in reflective practice, making them more self-aware and confident in their job readiness. The positive perceptions of students, academic staff, and employers underscore the potential of e-portfolios in bridging the gap between academic learning and industry expectations. However, the study also highlights the need for standardized assessment frameworks and increased digital literacy support to maximize the effectiveness of e-portfolios.

LIMITATIONS

Despite its valuable findings, this study has some limitations. The sample size was limited to final-year students, academic staff, and employers at MUT, which may not fully represent the views of all stakeholders across different universities or educational contexts. Additionally, the study was conducted within a single institution, and the findings may be influenced by MUT's unique academic culture, technological infrastructure, and student demographics. The study also relied on self-reported data from surveys and interviews, which could introduce response bias.

RECOMMENDATIONS

To maximize the effectiveness of e-portfolios at MUT, it is essential to implement a multifaceted strategy that includes standardization, capacity building, and stakeholder collaboration. Firstly, the university should establish clear, standardized guidelines for the creation, assessment, and evaluation of e-portfolios to ensure consistency and alignment across all departments and programs. Secondly, offering targeted digital literacy training and tutorials will empower students to navigate e-portfolio platforms confidently, thus overcoming technological barriers that may hinder full participation. Equally important is increased faculty involvement, where academic staff are adequately trained to integrate e-portfolios into their teaching and assessment practices, reinforcing their role in promoting reflective learning. Finally, engaging employers in the development and refinement of e-portfolio criteria will help align the content and structure of student portfolios with real-world expectations, thereby enhancing the platform's value in showcasing job-readiness and employability.

LIST OF ABBREVIATIONS

ICT Information and Communication Technology
HEI Higher Education Institution
CV Curriculum Vitae
RPL Recognition of Prior Learning
AI Artificial Intelligence
WIL Work-Integrated Learning
e-Portfolio Electronic Portfolio

BIOGRAPHY

Dr. Sibonelo Thanda Mbanjwa is a dedicated lecturer in the Department of Nature Conservation at Mangosuthu University of Technology (MUT), South Africa. He holds a Ph.D. in Environmental Science and specializes in biodiversity conservation, sustainable development, and environmental education. Dr. Mbanjwa is deeply committed to community engagement, student mentorship, and the integration of indigenous knowledge systems into conservation practices. His work bridges academia and practical application, empowering students and communities through innovative teaching, research, and outreach initiatives.

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COMPETING INTERESTS

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The author has no relevant financial or non-financial interests to disclose.

AUTHOR CONTRIBUTIONS

I, the author, contributed to the study conception and design. Material preparation, data collection, and research were performed by Mbanjwa S.T. The first draft was written by Mbanjwa S.T.

DATA AVAILABILITY

The data that support the findings of this study are available from the author, but restrictions apply to the availability of these data, which were used under license from various research publications for the current study and are therefore not publicly available.

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