Implementation of an ePortfolio to promote professional pathways: A case study of international students in Australian higher education

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Abstract

Given the current status of 'English as a global language', master's and postgraduate programs in Applied Linguistics and TESOL are becoming an increasingly popular choice for international students in Australia and elsewhere. However, international students enrolled in such programs often lack practical experience and a potential employment pathway. In this respect, an ePortfolio as an assessment tool has been found to assist students to become independent thinkers as they develop self-regulated, purpose-driven behaviours during construction of their ePortfolio. However, building an ePortfolio is a new concept for many of the international students in Australian higher education. The aim of this case study research was thus to identify the support international students require in completion of their ePortfolios. Research data in this mixed method study was collected through two survey questionnaires applied to international students within a course requiring an ePortfolio as a major assessment item. Results indicate the need for more focused training for these students not only in how to structure their ePortfolios, but also more broadly in the employability skills needed in the Australian workplace. This research will help to improve the design of similar courses, and consequently to improve the learning experience for future international students undertaking such courses.

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Citation

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Introduction

While the number of international students studying in Australia declined significantly during the pandemic, the numbers have now considerably increased. From January to September 2023, there were around 746,080 international students studying in Australia (with 21 per cent being Chinese, and 16 per cent Indian; the remaining students are from a diverse range of countries). This represents a 31 per cent increase since the same period last year (Department of Education, November 2023). These current numbers are now well above the pre-pandemic level of 580,000 (Hurley, 2022) – and with this increase in numbers comes the related problem of developing and providing appropriate professional pathways for those international students interested in enhancing their employability skills.

One approach to providing international students with such professional pathways is through work-integrated learning and work placements that are "in high demand by international students who seek to gain relevant experience in their host country and increase their chances of employment post-study" (Jackson, 2017, p. 344). However, those students who gain workplace experience may struggle due to lack of familiarity with Australian workplace culture, as well as a lack of ability to be self-critical and to be able to reflect on their personal experience (Billett, 2011; Jackson, 2017).

There is also reluctance of some employers to provide international students with work experience due to potential cultural problems and lack of English proficiency, particularly in workplace English. Conversely, there may be reluctance of some international students to undertake work experience due to fear of failure or loss of face in direct contact situations (Bai & Wang, 2022; Engin, 2017). Given these concerns, prior to entering a work-integrated learning or work experience context, a more thorough preparation is necessary to enhance the employability skills and knowledge of international students – focused on providing them with better understanding of Australian workplace practices, language and culture in relation to their workplace of interest.

Alongside such pre-employment training, students (international or otherwise) should be aware of their own strengths and weaknesses in workplace skills and knowledge – and this can be achieved through development of an ePortfolio as an integrated assessment within the degree program of the student cohort concerned (Jackson, 2017). An ePortfolio has been found to increase the active learning and engagement of students in their studies (Cabau, 2017: Singh & Miah, 2018). In turn, this improves the 'self-efficacy' of students, defined as a personal belief in one's ability to succeed in a given area – in this context, their academic studies. When active engagement and high academic self-efficacy are in synchrony, this predicts higher performance within their ePortfolios tasks (López-Crespo et al., 2022). Additionally, as will be seen, an ePortfolio can also provide a method for fostering intercultural learning and understanding, both for the international student as well as their native English speaking peers or potential employers – and such intercultural understanding is essential if international students are to be accepted for placements within the Australian workplace.

This background justifies this research aimed at gaining better understanding of the needs of international students as they build their ePortfolios. This article follows with a literature review,

outline of the research methodology, then consideration of the findings, discussion, and conclusion.

Literature

Creation of ePortfolios has been a feature within higher education courses since the late 1980s (McCowan et al., 2005). This is because if implemented appropriately, ePortfolios can not only be used to highlight achievement, but also to promote independent reflective thinking and active, self-directed learning (Ciesielkiewicz, 2019; McCowan et al., 2005; McDermott-Dalton, 2022). Additionally, they can promote intercultural learning and understanding.

Intercultural learning and understanding

ePortfolios, through collaborative sharing of critical ideas and reflections, can promote intercultural learning and understanding among a multicultural student cohort (Samaras & Fox, 2013). For instance, the ePortfolio software platform used by a given university can facilitate small and large group interaction, collaboration and discussion, and individual ePortfolios can be shared with other students, both in class and online. The students' cultural experiences can also be documented within their ePortfolios – such as through online personal narratives and reflection, and/or visual media such as videos, images and vlogs. "This sharing of critical ideas and reflections via the ePortfolio platform … [thus provides] an accessible medium for easily exchanging and documenting understandings of intercultural learning" (Samaras & Fox, 2013, p. 27).

Such activities provide students with the skills and knowledge necessary to be job-ready in a global society (Samaras & Fox, 2013; Van Wyk, 2017). In this respect, Hsieh et al. (2015, p. 643) propose that the use of ePortfolios can "improve young people's ability to respond to employment demands arising from the marketplace [and] … ultimately, ePortfolio implementation enables an educational program to closely connect with students' future career plans". Related to this, students report their ePortfolios as a useful resource for their future career development and advancement after graduation. This is because such portfolios showcase their personal development and achievements for their potential employers (Ciesielkiewicz, 2019; Morales et al., 2016). However, the question may be asked as to what defines an ePortfolio.

ePortfolios as learning product and process

An ePortfolio may be defined in terms of both learning product and process. It is a product "created by the learner … of digital artefacts articulating experiences, achievements and learning" – but an ePortfolio also represents a learning process involving "planning, synthesising, sharing, discussing, reflecting, giving, receiving and responding to feedback" (Joint Information Systems Committee [JISC], 2008, p. 6).

This definition also allows for identification of three different types of ePortfolio depending on their purpose – the assessment portfolio, the learning portfolio, and the showcase portfolio. First, the assessment portfolio can be used to evaluate student achievement and competency in respect to specified standards and learning outcomes. Second, the learning portfolio demonstrates evidence of ongoing knowledge, skills and achievements, and against which

professional development can be planned. Finally, the showcase portfolio highlights evidence of skills and achievements over time, and can be used as an alternative to the more traditional resume, and thus provides a medium for career development and employability (Balaban & Bubas, 2010; Ciesielkiewicz, 2019). While most ePortfolios are a combination of the above types (Balaban & Bubas, 2010), it is mainly the learning portfolio that assists students in becoming critical thinkers and independent, self-regulated learners, and on which lecturers and peers can provide feedback (Ciesielkiewicz, 2019).

In respect to the use of an ePortfolio for assessment, Yang et al. (2016) note an ePortfolio as "a form of authentic assessment with formative functions that include showcasing and sharing learning artifacts, documenting reflective learning processes, connecting learning across various stages and enabling frequent feedback for improvements" (p. 1276). This perspective reflects the essential requirements to build a successful ePortfolio – authentic learning experiences, reflection, collaborative learning, and frequent feedback. The learning artifacts referred to can include "text, graphics, video, audio, photos and animation … [designed to] show a comprehensive rendition of reflective thoughts throughout the learning process" (Hsieh et al., 2015, p. 642) – in fact, providing a "visual representation of … [the learner's] personal journey to professionalism" (Fallowfield et al., 2019, p. 114).

Factors influencing the development of an ePortfolio

The development of a quality ePortfolio does assume that students are motivated and invested in the process. The student cohorts of today often tend to be more comfortable in communicating across different media platforms than earlier generations, and "are open to broadcasting their life experiences to the world and mashing up media to communicate their ideas" (Reese & Levy, 2009, p. 3). ePortfolios thus allow students to share their work in ways in which they are familiar, while at the same time allowing for self-reflection. However, as noted earlier, this does assume that students are provided with ongoing and sufficient support and guidance during the development of their ePortfolio, both in respect to its content and the technical aspects involved in its construction. Such support may come not only from their lecturers and tutors, but also from their peers (Ciesielkiewicz, 2019).

ePortfolios involve students in deep reflection not only on professional skills and knowledge, but also about self, life goals and values. This process may enhance development of the (future) professional identity of the students. However, it can also be a frustrating, personal and emotionally intense process for some individuals (FitzPatrick & Spiller, 2010), perhaps particularly so for international students not familiar with the expectations of western education. Given this, support and guidance during the development of their ePortfolio is mandatory. If this is provided, then this learner-centred construct of the ePortfolio can empower students as they become confident self-directed learners (Van Wyk, 2017). However, there are other influences determining whether or not an ePortfolio will be of value.

As Harring and Luo (2016, p. 14) note, "It's about the pedagogy, not just about the tool" – and relative to this, ePortfolios need to be developed in a way that supports deep reflection. To promote such deep reflection, assignment prompts must be clear and succinct, clearly aligned with the course learning goals, and allow students to make their learning visible to their course lecturer and other interested parties (Harring & Luo, 2016). Additionally, the course learning

goals need to align with the graduate attributes of the university concerned, which in turn may influence the structure of an ePortfolio.

ePortfolios and graduate attributes

Universities are increasingly defining the qualities, skills and abilities that they expect a graduating student to possess by the completion of their degree through statement of 'graduate attributes'. For example, the University of Queensland expects that their graduates will possess not only "in-depth knowledge in the field(s) studied", but that they will also "display effective communication skills, independence and creativity, critical judgement and ethical and social understanding" (University of Queensland, 2023a).

As McDermott-Dalton (2022) notes, while the structure of an ePortfolio will be defined to some degree by its particular purpose, graduate attributes can also be useful to provide a structured digital format or lens that demonstrates these attributes to potential employers, as well as to students. This process would assume some form of tagging of graduate attributes against items within an ePortfolio. However, such graduate attributes may need to be modified from generic institution-wide attributes to ones more specifically relevant to the degree/course being undertaken by the learners concerned. In this respect, it has been suggested that graduate attributes may be recast more appropriately as graduate learning outcomes – and that such graduate learning outcomes must be specifically contextualised and assessed in relation to the degree or course concerned if students are to successfully "engage with their own employability" (Jorre de St Jorre & Oliver, 2018, p. 46).

Benefits and challenges of ePortfolios

The benefits of an ePortfolio lie in the areas of assessment, learning and employment as noted earlier. However, there are potential challenges in development of an ePortfolio. A particular challenge is encouraging student motivation in compiling an ePortfolio, which is also a necessity if students are to develop self-regulated learning. Students must have, or be provided with, knowledge of what should be contained within their ePortfolios. This can be done by setting clear specifications as to what is to be included in an ePortfolio, and also providing expected time frames around when the ePortfolio is to be completed (Syzdykova et al., 2021). The relative benefits and challenges of ePortfolios are summarised in Table 1.

To be motivating and meaningful to students, the content of an ePortfolio should reflect authentic professional experiences of the student concerned, and include self-reflection on those experiences. During development of an ePortfolio, scaffolding of learning through presentation of exemplars and practice activities are required (e.g. reflective writing, particularly for international students). This also assumes constructive, frequent and timely feedback from both lecturers and peers in a collaborative learning environment which may be face-to-face and/or online (Yang et al., 2016). This allows students to reflect on the feedback, and make improvements to their ePortfolio (Modise, 2021). Depending on their particular purpose, the appearance and content of an ePortfolio can then be structured to demonstrate "continuous learning, professional development, competence demonstration, performance evaluation … [and/or] job seeking" (Hsieh et al., 2015, p. 641).

Table 1

Benefits and challenges of ePortfolios (developed from Harring & Luo, 2016; Syzdykova, et al., 2021)

Benefits	Challenges
Students found that ePortfolios assisted them:	Students found that they needed:
• To think critically and become independent learners (metacognitive skills) • To reflect on their learning experiences (metacognitive skill) • To identify and develop their skills for future employment • To understand the wider goals of a course of study [graduate attributes] • To learn the technological skills required to design, develop and manage an ePortfolios • To identify how their learning has progressed over time	• More training and feedback on how to develop their ePortfolios • Clearer guidelines on how to organise and present their ePortfolios • More guidance on how to personalise their ePortfolios with appropriate learning artifacts • Specific timelines in respect to development of their ePortfolios within a course of study • More consideration about the time needed to develop their ePortfolios versus other course assignments • Motivation to complete an ePortfolio

Student motivation to complete an ePortfolio has been found as related to the student's perception about the usefulness of the ePortfolio concerned, and its relevance to their course of study and their future. However, motivating students to undertake successful construction of an ePortfolio also assumes that they are implemented correctly. As Ciesielkiewicz (p. 653-654, 2019) notes, "The creation of an ePortfolio is a complex process that requires training for both faculty and students" – such training being necessary in both the structure and technology required for construction of an ePortfolio.

Self-directed learning

Beckers et al. (2016) undertook a systematic review of factors that influence student self-directed learning (SDL) while developing an ePortfolio. They classified these factors into five areas – institutional factors, curriculum factors, learning process factors, personal factors, and portfolio factors. These are summarised in Table 2.

In respect to personal factors, effective reflection is reportedly enhanced when students think critically about their mastery of the subject matter versus their performance against the course learning goals – and then provide reflective entries that address both these aspects of their learning in their ePortfolios. If this and the other items in Table 2 are addressed, then students will generally be motivated and invested in development of their ePortfolios, and will in the process enhance their self-directed learning skills (Beckers et al., 2016).

It was also found that ePortfolios with a focus on the learning process (i.e. learning portfolios) foster SDL skills to a greater extent than ePortfolios that focused on the learning product (i.e. showcase portfolios). While an assessment portfolio also focuses on the learning process, it was less successful in promoting SDL skills, possibly because it represents a mandatory assessment process in a given course (Beckers et al., 2016).

Table 2

Factors influencing self-directed learning in ePortfolios (developed from Beckers et al., 2016; Whitney et al, 2021)

Factors influencing SDL of students	Features
Institutional factors	• Teachers must be trained in how to assist students to develop their SDL skills • Policies of their educational institution must be aligned with the learning goals of the ePortfolio.
Curriculum factors	**ePortfolios must be:** • Integrated into the curriculum and assessment procedures of the courses being undertaken by students. • Given an assessment status within those courses
Learning process factors	**Students must be provided with:** • Regular coaching in construction of an ePortfolio • Ongoing constructive feedback about their ePortfolio • Appropriate technology to easily access their ePortfolio
Personal factors	**Students must be motivated to complete their ePortfolio by:** • Provision of feedback, scaffolding and exemplars • Training (where necessary) in use of the ePortfolio software • Assisting students to provide reflection that combines mastery and performance goals
Portfolio factors	**The ePortfolio must be designed to:** • Provide opportunities for students to plan their learning goals, select their learning tasks, and undertake self-evaluation of performance to identify their areas of strength and weakness

Self-directed learning also requires metacognitive skills (see Table 1) which include planning, monitoring and then critical evaluation of their learning by a student, the latter including reflection on what might be done in future to enhance their learning process. This may be a conscious or unconscious process, but in either case, such processes "are not intuitive or innate, rather they must be taught and learned" (Greene. 2021, p. 652) – in a process of learning how to learn. This teaching of such metacognitive skills may be particularly necessary in the case of international students from cultural backgrounds where learning is predominantly passive rather than active and independent.

Successful collaboration and critical reflection during development of an ePortfolio can likewise assist students to become self-directed, purpose-driven learners (McCowan et al., 2005). In turn, this enhances and strengthens their professional identity and professional self-efficacy (Samaras & Fox, 2013). However, the process does assume that appropriate guidance and support in development of an ePortfolio is provided by lecturers and peers (Van Wyk, 2017) – and this is particularly important for international students if they are to develop self-directed learning skills and be successful in the Australian higher education system and workplace.

Method

This research represents a case study of a capstone course within a master's program in the School of Languages and Cultures at the University of Queensland (UQ). It uses a mixed method approach to gather data – with survey questionnaire items including Likert questions,

multiple choice questions, but also some questions asking participants to provide their own perspectives on their ePortfolios.

Context

The participants in this research were from master's students enrolled in the UQ course titled 'Portfolio & Synthesis (SLAT7852)'. On a broad level, such capstone courses as this are designed to improve the job readiness of graduates (Anderson, et, al. 2022). This is by integrating the knowledge, skills and experience acquired by students in previous courses that target various foundational domains in their professional area; and also by improving their soft skills (i.e. their employability skills) such as in communication, problem solving, and critical thinking, alongside their technical skills (Anderson, et, al. 2022; Minlikeeva et, al., 2022).

The UQ Portfolio & Synthesis course was purposefully designed as a platform for open dialogue to allow sharing of different perspectives with peers who could also be future work colleagues. The objectives of this course also shift from passive learning within a disciplinary area towards more active involvement of students in their own learning. For example, developing an academic ePortfolio is a major assessment component within this course. In the construction of this ePortfolio, students are expected to "articulate learning achievements and strengths such as professional attributes and transferable skills and knowledge; create a showcase of learning achievements and develop curation skills through identifying learning outcomes from previous course assessments; develop reflective writing skills through integrating theoretical knowledge, research and practice; [and] create a framework of practice and professional goals for a chosen future career" (University of Queensland, 2023b).

Ethical clearance for this research project (number 2023/HE000062) was granted by the University of Queensland's Human Research Ethics Committee on 4 May 2023. The research was considered as having low and negligible risk (LNR) to participants.

Participants

The participants were 18 full-time international students enrolled in UQ's Master of Applied Linguistics (TESOL) program during semester two in 2023. All participants were from various cities and provinces in China, with 17 females, and one male. The age range of the participants was 18 – 34 years. The primary employment goal of most students after graduation was to become an English language teaching professional. At the time of the research, the majority of the participants were full-time master's students and were not employed.

Data sources

Pilot study
Following development of two online survey questionnaires, a pilot study was performed at UQ during Semester One, 2023. Ten students from the Portfolio & Synthesis (SLAT7852) class volunteered to complete the online survey questionnaires. One student was Indonesian, the rest were from China. An online information sheet about the study was provided to each participant, and each completed an online consent form. The researcher (the author of this paper) did not have any direct contact with the participants to preserve the creditability of the research.

However, all participants were aware that they were able to contact the researcher via email at any time with any concerns they might have.

From the results of the pilot study, it was clear that employment was the main concern of students after graduation, but the value of developing an ePortfolio remained uncertain to them. However, as a result of the pilot study, only one change was made to the survey questionnaires – this was to add one open-ended question at the end of the Stage Two Questionnaire asking participants to complete the sentence, 'Developing an ePortfolio as a master's student …'. This was to allow for collection of some qualitative comments (albeit limited) in the student's own voice.

Final study

The first stage of data collection occurred prior to students commencing their course through completion of the Stage One Questionnaire. This asked participants to consider the potential benefits of developing an ePortfolio as a final semester master's student, and their familiarity with university graduate attributes. A Likert scale was used in this evaluation, as illustrated in the following two examples of items from the questionnaire.

- *I believe that an ePortfolio can contribute to my professional activities, and will help me realise my potential and establish a professional pathway*

  Definitely not | Probably not | Possibly | Probably | Definitely

- *How familiar were you with the UQ graduate attributes prior to beginning the ePortfolio?*

  Very unfamiliar | Unfamiliar | Somewhat unfamiliar | Familiar | Very familiar

The second stage of the research was conducted following the completion of an ePortfolio by each participant, but prior to release of their marks. In broad terms, the questionnaire items asked participants to provide their perceptions on how building an ePortfolio provided a space for them to reflect on their learning; how it helped them to identify their professional strengths and weaknesses; and finally, how developing an ePortfolio might affect their future professional pathway. Items in the questionnaires used several question types. Most required Likert-scale responses, for example:

- *E-Portfolios encouraged me to think critically about my MA program.*
  1 – Strongly disagree| 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly agree

Some items were open-ended questions, but with responses tagged, for example

- *What do you think is the strongest aspect of your ePortfolio?*
  - Showcases and provides proof of my skills and talents
  - Organises information about myself into one location (i.e., the ePortfolio)
  - Items within the ePortfolio may assist in my employment
  - Assists me to recall, recap and reflect on my professional strengths (and weaknesses)

Finally, one sentence was included at the end of the Second Stage Questionnaire asking participants to provide an open response:

- Developing an *ePortfolio as a master's student …*

Findings and Discussion

Stage One Questionnaire

The first questionnaire was distributed via a Blackboard announcement which contained a link to the participant information sheet, the research consent form, and the Stage One Questionnaire. The research was also promoted by the lecturers in the class tutorials. In total, three blackboard invitations were posted, with the questionnaire receiving 18 responses, representing a response rate of 32 per cent among the 55 students in the Semester Two class. There were only two Likert scale items in the Stage One Questionnaire, with response rates summarised in Figures 1 and 2.

The first item was stated as: '*I believe that an ePortfolio can contribute to my professional activities, and will help me realise my potential and establish a professional pathway*'. Most respondents (Figure 1) indicated their relative agreement with this statement, as 72 per cent (13/18) replied with either 'Probably' (9/18) or 'Definitely' (4/18) to this statement. The option of 'Possibly' received responses of 22 per cent (4/18); and the remaining two options of 'Probably not', and 'Definitely not' received 0 and 1 response respectively.

The second Likert scale item in the Stage One Questionnaire was stated as: 'How familiar were you with the UQ graduate attributes prior to beginning the ePortfolio?'. Most respondents (Figure 2) indicated their relative unfamiliarity with the UQ graduate attributes, as 83 per cent (15/18) replied with either 'Very unfamiliar' (1/18), 'Unfamiliar' (5/18), and 'Somewhat unfamiliar' (9/18). The remaining two options of 'Familiar' and 'Very unfamiliar' received responses of 3 and 0 respectively. These results are shown in Figure 2.
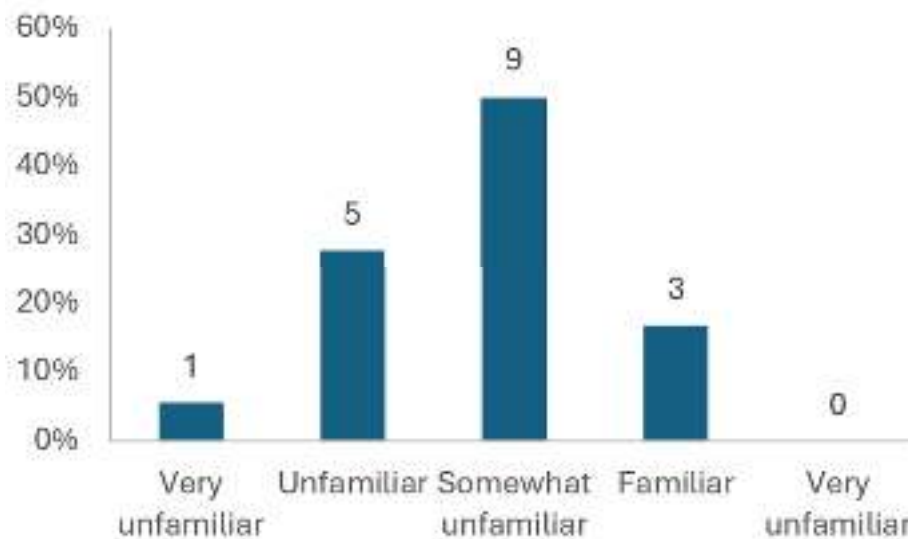
Figure 1

I believe that an ePortfolio can contribute to my professional activities, and will help me realise my potential and establish a professional pathway
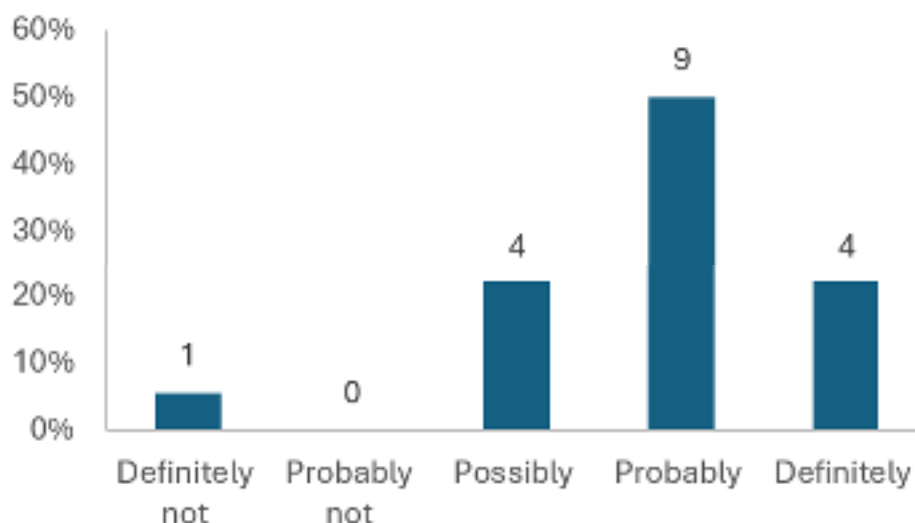
Figure 2

How familiar were you with the UQ graduate attributes prior to beginning the ePortfolio?

In summary here, it can be seen that while most respondents (72 per cent | 13/18) were in agreement that an ePortfolio could assist them in developing their professional pathway, most (83 per cent | 15/18) had only passing familiarity with the UQ graduate attributes that they were supposed to develop during their MA study program. This is despite the fact that they were approaching their graduation.

Stage Two Questionnaire

Unfortunately, only 10 students from the original 18 respondents to the Stage One Questionnaire chose to complete the Stage Two Questionnaire. This reduced response may be related to the eight week gap between distribution of the two questionnaires and the students' workload from other courses. Given this, numeric figures only are given in the results below rather than percentages, and statistical significance cannot be established.

The Stage Two Questionnaire was divided into three sections – first, the demographic information about the respondents; second, their experience during building their ePortfolio; and third, the effects of building their ePortfolio. Responses to Likert scale items about their experience in building their ePortfolio are summarised in Table 3; and response rates to the multiple choice questions in Table 4. Discussion aligned to the results are presented within each of the three sections that follow.

1 – Demographic information about the respondents
The Stage Two Questionnaire was distributed after the ePortfolio was submitted for marking, but before release of the students' ePortfolio marks. This collection of data in the eight week period prior to release of the final ePortfolio grades allowed for participant feedback on their ePortfolio experience free of potential bias related to the grade received. As noted, out of the original 18 students who completed the First Stage Questionnaire, 10 students chose to complete the

Second Stage Questionnaire. While this is a relatively small number, all responses are valid in relation to this study, as this eliminated possible biased responses from unmotivated or demotivated students who chose not to participate in this research, and/or who received low marks in their ePortfolio assessment.

Of the 10 participants involved in Stage Two, nine identified as female and one as male. At the time of research, eight were unemployed, one had a casual retail position, and one worked as a part-time English teacher. All participants were from China, with 7/10 hoping to gain employment in China after graduation, one hoped to work in Australia, and two were as yet uncertain. In relation to their future professional goals, 7/10 participants indicated their goal was to become an English teacher in some form; of the other three participants, one hoped to become a Chinese language teacher, another a translator, and the final participant wished to gain a position in development of language learning apps.

2 – Experience of building an ePortfolio

Some of the positive outcomes for students emerging from their experience of creating an ePortfolio (Table 3) were that 7/10 respondents agreed that there were benefits from creating their ePortfolio, though only 5/10 'enjoyed' the process; 8/10 were encouraged to think critically about what they had learnt in their master's program; and 7/10 improved their organisational skills in the process of producing their ePortfolio. Other reported benefits (Table 4) included that developing their ePortfolio assisted students in recalling and reflecting on their professional strengths and weaknesses (5/10).

Table 3

Likert scale item response rates in Stage Two Questionnaire

Statement	Response rate (n/10)				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I enjoyed creating the ePortfolio	1	1	3	5	0
I feel that there are benefits for students in developing an ePortfolio	0	0	3	5	2
The ePortfolio building process encouraged me to think about what I have learned	0	0	4	4	2
ePortfolios encouraged me to think critically about my MA program.	0	0	2	7	1
ePortfolios encourage people to develop organisational skills	0	0	3	5	2
ePortfolios are a good way for students to showcase their talents.	0	1	3	5	1
I may show my ePortfolio to potential employers	0	0	4	6	0
I felt supported during the ePortfolio creation process.	0	2	1	5	2
I did NOT have difficulties selecting artefacts/items for my ePortfolio	0	5	3	2	0
The ePortfolio building process encouraged me to think about the graduate attributes of the University of Queensland	0	1	3	5	1

Table 4

Response rates to multiple choice questions in Stage Two Questionnaire

What do you think is the strongest aspect of your ePortfolio?	Response rate (n/10)
• Showcases and provides proof of my skills and talents	4
• Organises information about myself into one location (i.e., the ePortfolio)	1
• Items within the ePortfolio may assist in my employment	0
• Assists me to recall, recap and reflect on my professional strengths and weaknesses	5
• Other	0
What do you see are the benefits of completing a student ePortfolio?	Response rate (n/10)
• Showcases and provides proof of my skills and talents	5
• Organises information about myself into one location (i.e., the e-portfolio)	2
• Items within the e-portfolio may assist in my employment	0
• Assists me to recall, recap and reflect on my professional strengths (and weaknesses)	3
• Other	0
What are the drawbacks of student portfolios?	Response rate (n/10)
• They are time consuming and difficult to complete	2
• They are difficult to complete due to lack of guidance and lack of direction in the course	4
• The software to complete the ePortfolio was difficult to select and use	2
• There are no difficulties in completing student portfolios	0
• Other	2
After viewing the ePortfolios your peers, what area/s of your e-portfolio do you think need improving?	Response rate (n/10)
• The showcasing and proof of my skills and talents	3
• The organisation of the information about myself in the e-portfolio	1
• The items within the e-portfolio that may assist in my employment	1
• My reflection on my professional strengths and weaknesses	2
• I did not view any ePortfolios of my peers	3

There were also several negative experiences for students in development of their ePortfolios – these related mainly to ePortfolio content and employment. While 6/10 respondents felt that ePortfolios are a good method to showcase their skills and talents, and 6/10 agreed they might show their ePortfolio to their potential employers (Table 3), there appeared to be some conflict here with the fact that zero respondents agreed with the statement that 'Items within the ePortfolio may assist in my employment' (Table 4).

Possibly related to this is that 5/10 respondents reported difficulties selecting learning artefacts for inclusion in their ePortfolio, with only 2/10 reporting the process as without difficulty (Table 3). Nevertheless, the majority of students (7/10) still agreed with the statement that they 'felt supported during the e-portfolio creation process' (Table 3), though 4/10 respondents still

considered that ePortfolios 'are difficult to complete due to lack of guidance and lack of direction in the course' (Table 4).

The above results suggest that – while the majority of students feel that they are supported in UQ's Portfolio and Synthesis course – they still need wider and more explicit guidance as to the learning artefacts to include in their ePortfolio – particularly to make it more relevant to their future employment pathway, and ultimately to employers. This concurs with the experience of students completing ePortfolios in the research presented by McDermott-Dalton (2021) where students lacked confidence and skills "in collecting and presenting digital artefacts that represent their stages of learning … and development in a meaningful way" (p. 1208).

In order to meet these student concerns about the content of their ePortfolios, there must be more training, scaffolding, and timely feedback provided to students on how to organise and present their ePortfolios; and greater guidance on how to personalise their ePortfolios with appropriate learning artifacts related to their employability. This also presupposes that students have the appropriate metacognitive skills (e.g. critical thinking, self-directed learning, reflection) to undertake development of their ePortfolio (Harring & Luo, 2016; Syzdykova, et al., 2021). However, such skills must be explicitly taught (Greene, 2021), and this is particularly important for international students from cultural backgrounds where passive learning is more common than the self-directed and independent learning required in the western educational context (Yang et al., 2016).

A final theme in this section concerns graduate attributes. The majority of students in the first stage questionnaire (15/18 | 83 per cent) indicated their relative unfamiliarity with graduate attributes (Figure 2). However, this familiarity increased after completion of their ePortfolio, as 6/10 respondents indicated agreement with the statement 'The portfolio building process encouraged me to think about the graduate attributes of the University of Queensland' (Table 3). Nevertheless, in order to make these attributes more transparent to both students and employers, they might be more effectively called 'graduate learning outcomes'. Additionally, they need to be more strongly aligned to the learning outcomes and assessment of an ePortfolio course (Jorre de St Jorre & Oliver, 2018). These attributes are discussed further in the next section.

3 – Effects of building an ePortfolio
Responses to Likert scale items about the effects of building their ePortfolio are summarised in Table 5, and response rates to the multiple choice questions in Table 6.

The effects of developing their ePortfolio were reported as generally positive for the majority of students, as evidenced in that 7/10 respondents agreed that developing an ePortfolio helped them to realise their potential, and to identify their professional strengths and weaknesses; and 6/10 respondents agreed that developing ePortfolio assisted them to identify their professional goals (Table 5).

In response as to how the ePortfolio course could be strengthened in the future, 5/10 students suggested provision of more specific instructions, guidance, and/or examples, with 3/10 desiring these at an earlier point in the course. Only 2/10 students requested more guidance on use of the software used in creating their ePortfolio (Table 6).

Table 5

Likert scale item response rates in Stage Two Questionnaire

Statement	Response rate (n/10)				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Developing an ePortfolio helped me to realise my potential	0	1	2	6	1
Developing an ePortfolio helped me to identify my strengths	0	1	2	7	0
Developing an ePortfolio helped me to identify my weaknesses	0	1	2	7	0
Developing an ePortfolio helped me to identify my professional goals	0	1	3	5	1

Table 6

Response rates to multiple choice question in Second Stage Questionnaire

How can we improve the ePortfolio creation process for future students?	Response rate (n/10)
• Provide information about the ePortfolio earlier in the course	3
• Provide more specific directions, instructions, guidance, and/or examples	5
• Provide more guidance on use of the software available for E-portfolios (e.g. Adobe Express, Wix, etc.)	2
• Other	0

Students were also asked to comment more specifically on areas with which they would have particularly liked further support. Responses included provision of guidance on critical thinking; greater clarity in the ePortfolio task description and on professional guidelines; more timely feedback from teachers, with greater opportunity to correct their ePortfolios in response to such feedback; and further support and information on career counselling and finding a job. Many of these concerns echo the challenges of developing an ePortfolio noted in the literature review (Table 1) (Harring & Luo, 2016; Syzdykova, et al., 2021).

Finally, students were asked to complete an open-end sentence – *'Developing an ePortfolio as a Masters student … '.* Responses were as shown in Table 7. As can be seen, all ten respondents provided a final comment about developing their ePortfolios. All responses are positive to some degree, with comments 1 and 7 perhaps best summarising the main benefits that relate to successful development of an ePortfolio. 'I have improved my planning and language organisation skills, set goals for the career direction I am looking for, and gained a deeper understanding of my strengths and weaknesses' (Comment 1); and an ePortfolio '*…is a valuable and multifaceted endeavour that allows me to showcase my academic achievements, skills, and professional growth throughout my graduate program'* (Comment 7).

Comment 3, however, noted that '*more comprehensive guidance should be given, such as the sharing of information on job-seeking and the sharing of job-seeking experiences of former graduates'*. It might also be remembered here that among the group of students in this research, none agreed with the statement that '*Items within the ePortfolio may assist in my employment*' (Table 4). This suggests that there is a lack of focus on employment within the ePortfolio course, with perhaps more attention being given to assessment – particularly so given that this is one of the final courses completed before the students graduate. This returns to the issue of how ePortfolios can be more strongly aligned to employability.

Table 7

Responses to the prompt 'Developing an ePortfolio as a Masters student … '.

1.   I have improved my planning and language organisation skills, set goals for the career direction I am looking for, and gained a deeper understanding of my strengths and weaknesses.
2.   … help me deeply understand my advantages and disadvantages
3.   … is beneficial. However, more comprehensive guidance should be given, such as the sharing of information on job-seeking and the sharing of job-seeking experiences of former graduates.
4.   … helps me recall how my prior content will be applied to my future practice.
5.   … is helpful for students
6.   … helps a lot in my future career life
7.   … is a valuable and multifaceted endeavour that allows me to showcase my academic achievements, skills, and professional growth throughout my graduate program.
8.   I improved my knowledge of web page production
9.   … helps me recap the courses and important assignments I have taken.
10.   … helped me reflect on my postgraduate learning experience, and more on knowledge, where it was difficult to obtain revisions [reflections] in teaching because I had not participated in teaching practice. In addition, in my country, ePortfolio is not the shining point for people to find a job. What is more important is resume and student experience.

The issue of graduate attributes has also been briefly considered in this research, finding (as noted earlier) that knowledge of these attributes increased between the first and second stage questionnaires. However, more focus on these employability skills appears to be necessary within an ePortfolio development course. For example, Jorre de St Jorre and Oliver (2018) suggest that graduate attributes might be recast as 'graduate learning outcomes' or 'graduate capabilities'. These graduate learning outcomes need to be more strongly and directly linked to employability skills and employment. They must also be contextualised and assessed within the ePortfolio course in question in order to motivate and engage students in their learning. Furthermore, within such capstone courses, there must be input "from employers, professionals and recent graduates, and exposure to industry-related experiences [that] could help make graduate capabilities more meaningful" (Jorre de St Jorre & Oliver, 2018. p. 44) – which in fact echoes the suggestion made by the student providing Comment 3 (Table 7).

This returns to the issue of how international students can be assisted in their desire for employment related skills – but remembering here the negatives noted in the introduction, namely that many Australian employers are reluctant to place international students due to their

lack of English and unfamiliarity with Australian workplace practice (Jackson, 2017); and conversely, the reluctance of some international students to undertake work placements due to fear of failure and loss of face (Bai & Wang, 2022; Engin, 2017).

Related to this is the final finding to be highlighted from this research. An ePortfolio is designed not only to be used as an assessment item, but also for professional promotion. To help accomplish this goal, interactive Google Docs were made available for students to share their ePortfolios, either to promote themselves and/or to seek peer feedback. This was a voluntary activity for students without any inducements – and in fact, only a small number (2/10) chose to share their ePortfolio. Where stated, the reasons that students gave for sharing or not sharing were given as follows.

- *I'm not sure why I shared to Google docs*
- *I don't share for anybody*
- *I do not want to share*
- *I don't use Google Docs*
- *It was made in Adobe, I don't know how to share it in Google Doc.*

According to Yang et al. (2016), this is because Asian students fear other students will plagiarise their work, but are also concerned with revealing their personal reflections to others (a potential loss of face). This reluctance on the part of the international students in this research to share their ePortfolios belies the proposals reported earlier in the literature review – that ePortfolios provide "an accessible medium for easily exchanging and documenting understandings of intercultural learning" (Samaras & Fox, 2013, p. 27); and that modern day students "are open to broadcasting their life experiences to the world and mashing up media to communicate their ideas" (Reese & Levy, 2009, p. 3). The present cohort resisted this, and this suggests the need for more extensive and explicit training in employability skills is necessary – this is particularly so remembering that the students in this research are about to graduate, but still remain unwilling to collaborate with others – with collaboration being a fundamental employability skill.

This returns to the issue of graduate attributes – these essentially equate to employability skills, these being the soft skills deemed so necessary by employers for successful employment (Jorre de St Jorre & Oliver, 2018). While the present young generation may possess skills in digital literacy, they may be lacking in these soft skills – the "personal, interpersonal and organisational skills … critical for the future workforce in terms of career and life success … They include willingness to learn, interpersonal and communication skills, attitude and work ethic, self-management, teamwork and motivation … as well as critical thinking and imagination" (Hajkowicz et al., 2016, p. 51).

Given this, to make an ePortfolio course more meaningful and relevant to the future employment of international students, there needs to be a much greater focus on the development of these soft skills /graduate attributes. This also needs to be through explicit teaching not the assumption that they will just be 'picked up' as their course progresses. Solutions will also have to be found for international students reluctant to engage in the interpersonal interactions required in soft skills training. Perhaps this may be through such training delivered through AI, a rapidly growing area of technology.

Whatever the approach, one respondent does note that ePortfolios at this time are not valued in China as – '*in my country [China], ePortfolio is not the shining point for people to find a job. What is more important is resume and student experience*' (Table 7). That may be the case, but ePortfolios – when structured and developed appropriately – can provide a living document that can detail both resume and experience; and also demonstrate the employability skills so valued in the Australian workplace. It remains to be seen if ePortfolios will ever be valued within the cultures of some international students, Chinese or otherwise.

Conclusion

Three main themes were identified from this research – these provide areas that may assist practitioners to optimise courses where students are required to produce an ePortfolio. First, international students require more specific instructions, guidance, and exemplars to assist them in structuring their ePortfolio; and more timely feedback on their ePortfolio, with opportunity to revise them as and when necessary. Second, students need assistance in selection of the learning artefacts to include in their ePortfolio. Finally, students wish the ePortfolio course to provide a greater focus on employment, and how their ePortfolio might assist them in their future employment pathway – and related to this, more explicit training in employability/soft skills was identified as necessary for many international students

Most participants were unfamiliar with the graduate attributes expected from undertaking the ePortfolio course, but gained some familiarity with these after completing their ePortfolio. Nevertheless, the majority of participants declined sharing of their ePortfolio with other students. This and other responses to the questionnaire items appear to indicate that some respondents were lacking in the soft skills (i.e. graduate attributes) required in the Australian and no doubt in other international workplaces.

This suggests an immediate need to provide explicit pre-employment training in these soft skills, certainly for international students, and possibly also for many domestic students – as research indicates that many younger workers lack such employability skills, and this is often a reason for their inability to gain or sustain employment (Mainga et al., 2022). Additionally, such training in employability skills needs to be undertaken throughout a degree program, not as an add-on during a course on ePortfolios or otherwise. As noted earlier, the pedagogy is just as important, if not more important, than the tool in ePortfolio courses (Harring & Luo, 2016). If such training is provided in an effective manner, and integrated into ePortfolio courses together with employment-related opportunities, then this will produce international (and domestic) students that are both work-ready and future-ready graduates (Mainga et al., 2022).

The limitations of this research lie mainly in that it can be applied only in the context of the ePortfolio course referred to at the University of Queensland. Further research to confirm these findings and their potential applicability to other contexts would need to take place over a longer time frame than one semester, and to involve an international student cohort drawn from a wider range of countries and involving a greater number of participants.

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References

Anderson, Z. D., Hargiss, C. L. M., & Norland, J. E. (2022). Skill development using interdisciplinary problem solving in a natural resources capstone course. *Natural Sciences Education, 51*, e20078. https://doi.org/10.1002/nse2.20078

Bai, L., & Wang, Y. X. (2022). In-class and out-of-class interactions between international students and their host university teachers. *Research in Comparative and International Education*, *17*(1), 71–88. https://doi.org/10.1177/17454999211038774

Balaban, I., & Bubas, G. (2010). Educational potentials of ePortfolio systems: Student evaluations of Mahara and Elgg. *Proceedings of the ITI 2010, 32nd International Conference on Information Technology Interfaces*, Cavtat, Croatia, 329–336.

Beckers, J., Dolmans, D., van Merriënboer, J. (2016). e-Portfolios enhancing students' self-directed learning: A systematic review of influencing factors. *Australasian Journal of Educational Technology, 32*(2), 32-46. https://doi.org/10.14742/ajet.2528

Billett, S. (2011). *Curriculum and pedagogic bases for effectively integrating practice-based experiences*. Australian Learning & Teaching Council. https://www.vu.edu.au/sites/default/files/CCLT/pdfs/billett-wil-report.pdf

Cabau, B. (2017). E-Portfolio as a tool to respond higher education ambitions and societal Expectations. In T. Chaudhuri., & B, Cabau, *E-portfolios in higher education: A multidisciplinary approach* (pp. 141–154). Springer. https://doi.org/10.1007/978-981-10-3803-7_10

Ciesielkiewicz, M. (2019). The use of e-portfolios in higher education: From the student's perspective. *Issues in Education Research, 29*(3). 649-667.

Department of Education (November 2023). *International student numbers by country, by state and territory*. Australian Government. https://www.education.gov.au/international-education-data-and-research/international-student-numbers-country-state-and-territory

Engin, M. (2017). Contributions and silence in academic talk: Exploring learner experiences of dialogic interaction. *Learning, Culture and Social Interaction*, *12*, 78–86. https://doi.org/10.1016/j.lcsi.2016.11.001

Fallowfield, S. M., Urtel, M., Swinford, R., Angermeier, L., & Plopper, A. S. (2019). A case study in eportfolio implementation: A department-wide perspective. *International Journal of ePortfolio*, *9*(2), 111 - 118.

FitzPatrick, M. A., & Spiller, D (2010). The teaching portfolio: Institutional imperative or teacher's personal journey? *Higher Education Research & Development*, *29*(2), 167-178, https://doi.org/10.1080/07294360903470985

Greene, J. A. (2021). Teacher support for metacognition and self-regulated learning: A compelling story and a prototypical model. *Metacognition and Learning, 16*(3), 651-666. https://doi.org/10.1007/s11409-021-09283-7

Hajkowicz, S., Reeson, A., Rudd, L., Bratanova, A., Hodgers, L., Mason, C., & Boughen, N. (2016). *Tomorrow's digitally enabled workforce: Megatrends and scenarios for jobs and employment in Australia over the coming twenty years.* CSIRO. https://publications.csiro.au/rpr/download?pid=csiro:EP161054&dsid=DS1

Harring, K., & Luo, T. (2016). Eportfolios: Supporting reflection and deep learning in high-impact practices. *Peer Review: Emerging Trends and Key Debates in Undergraduate Education, 18*(3), 9-15.

Hsieh, P-H., Lee, C-I., & Chen, W-F. (2015). Students' perspectives on e-portfolio development and implementation: A case study in Taiwanese higher education. *Australasian Journal of Educational Technology, 31*(6), 641 – 656. https://doi.org/10.14742/ajet.1605

Hurley, P. (2022). *International students are returning to Australia, but they are mostly going to more prestigious universities*. The Conversation. Victoria University. https://theconversation.com/international-students-are-returning-to-australia-but-they-are-mostly-going-to-more-prestigious-universities-193391

Jackson, D. (2017). Exploring the challenges experienced by international students during work-integrated learning in Australia. *Asia Pacific Journal of Education, 37*(3), 344-359. https://doi.org/10.1080/02188791.2017.1298515

Joint Information Systems Committee [JISC] (2008). *Effective practice with e-portfolios: Supporting 21st century learning*. https://research.qut.edu.au/eportfolio/wp-content/uploads/sites/186/2018/04/JISC_effective_practice_e-portfolios.pdf

Jorre de St Jorre, T., & Oliver, B. (2018). Want students to engage? Contextualise graduate learning outcomes and assess for employability. *Higher Education Research and Development*, *37*(1), 44–57. https://doi.org/10.1080/07294360.2017.1339183

López-Crespo, G., Blanco-Gandía, M. C., Valdivia-Salas, S., Fidalgo, C., & Sánchez-Pérez, N. (2022). The educational e-portfolio: Preliminary evidence of its relationship with student's self-efficacy and engagement. *Education and Information Technologies, 27*(4), 5233–5248. https://doi.org/10.1007/s10639-021-10827-2

Mainga, W., Murphy-Braynen, M. B., Moxey, R., & Quddus, S. A. (2022). Graduate employability of business students. *Administrative Sciences*, *12*(3), 1–35. https://doi.org/10.3390/admsci12030072

Mccowan, C., Harper, W., & Hauville, K. (2005). Students E-portfolio: The successful implementation of an E-Portfolio across a major Australian university. *Australian Journal of Career Development, 14*(2), 40-52. https://doi.org/10.1177/103841620501400208

McDermott-Dalton, G. (2022). Putting the 'e' in portfolio design: An intervention research project investigating how design students and faculty might jointly reimagine the design portfolio activity. *International Journal of Technology and Design Education*, *32*(2), 1207–1225. https://doi.org/10.1007/s10798-020-09640-8

Minlikeeva A.N., Amato, K.A. & Przybyla, S.M. (2022). Modern public health problems and solutions: An undergraduate capstone course to prepare the next generation of public health practitioners to enhance health equity. *Frontiers in Public Health 10*, 992835–992835. https://doi.org/10.3389/fpubh.2022.992835

Modise, M. P. (2021). Postgraduate students' perception of the use of e-portfolios as a teaching tool to support learning in an open and distance education institution. *Journal of Learning for Development*, *8*(2), 283–297. https://doi.org/10.56059/jl4d.v8i2.508

Morales, L., Soler-Domínguez, A., & Tarkovska, V. (2016). Self-regulated learning and the role of ePortfolios in business studies. *Education and Information Technologies, 21*(6), 1733-1751. https://doi.org/10.1007/s10639-015-9415-3

Reese, M., & Levy, R. (2009). Assessing the future: E-portfolio trends, uses, and options in higher education. EDUCAUSE Center for Applied Research. https://library.educause.edu/-/media/files/library/2009/2/erb0904-pdf.pdf

Samaras, A. P. & Fox, R. K. (2013). Capturing the process of critical reflective teaching practices thorough e-portfolios. *Professional Development in Education, 39*(1), 23-41. https://doi.org/10.1080/19415257.2012.682318

Singh, H., & Miah, S. J. (2019). Design of a mobile-based learning management system for incorporating employment demands: Case context of an Australian University. *Education and Information Technologies*, *24*(2), 995–1014. https://doi.org/10.1007/s10639-018-9816-1

Syzdykova, Z., Koblandin, K., Mikhaylova, N. & Akinina, O. (2021). Assessment of e-Portfolio in higher education. *International Journal of Emerging Technologies in Learning, 16*(2), 120-134. https://doi.org/10.3991/ijet.v16i02.18819

University of Queensland (2023a). *Graduate attributes – Policy*. https://governance-risk.uq.edu.au/files/11341/Graduate%20Attributes%20Policy%203_10_05%202023-01-16%2013_45.pdf

University of Queensland (2023b). *SLAT7852 - Portfolio & Synthesis. E-portfolio project*. https://course-profiles.uq.edu.au/student_section_loader/section_4/129397

Van Wyk, M. M. (2017). An e-portfolio as empowering tool to enhance students' self-directed learning in a teacher education course: A case of a South African university. *South African Journal of Higher Education, 31*(3), 272 – 291. https://doi.org/10.20853/31-3-834

Whitney, I., Rowley, J., & Bennett, D. (2021). Developing student agency: ePortfolio reflections of future career among aspiring musicians. *International Journal of ePortfolio*, *11*(1), 53-65. https://www.theijep.com/pdf/IJEP357.pdf

Yang, M., Tai, M., & Lim, C. P. (2016). The role of e-portfolios in supporting productive learning. *British Journal of Educational Technology*, *47*(6), 1276-1286. https://doi.org/10.1111/bjet.12316