

The challenges of incorporating ePortfolio into an undergraduate nursing programme

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Abstract

Registered nurses today are required to maintain a portfolio of evidence of their competence to practice. This evidence collection commences at undergraduate level with nursing programmes requiring portfolio's as assessments, which are often submitted in hard copy. This paper describes the outcome when a small group of tutorial staff introduced ePortfolio's into an undergraduate nursing degree. Evaluation of the effectiveness was collected through reflective conversations, which focused on issues that arise when implementing this change to a curriculum, along with improving understanding of ePortfolios and their use in practice. Routine student evaluations and the lessons learnt from tutorial staff reflections were used to inform the planning for wider implementation of ePortfolio's.

Keywords: Mahara, ePortfolio, assessment, undergraduate, nursing

Introduction

Within the three year nursing degree, students are required to maintain a record of their clinical placement attendance, objectives and achievements. This record comes together to form a portfolio of evidence of achievement which students often use as a foundation for an employment Curriculum Vitae on completion of their study. Students currently use a physical folder, in which documents are stored and handed in at the end of each semester for tutorial review and grading where required. This can be cumbersome for both students and tutors and an electronic platform for the portfolio was seen as a viable alternative. A project was developed to explore the student and tutorial staff experiences of introducing ePortfolio into an undergraduate nursing programme. The aim of the project was to identify strategies to support the integration of ePortfolios, identify issues as they arose and provide tutorial staff with strategies to support wider integration across the undergraduate nursing degree.

In nursing education the use of ePortfolio is increasing, with ongoing debate regarding the electronic platform to best support the ePortfolio and how the ePortfolio intersects with assessment processes. The project identified literature to support the rationale for using ePortfolio in health degree education, it's place in assessment, as well as some things to consider in regard to the introduction and support of an ePortfolio. Literature also highlights the usefulness of ePortfolio in supporting the student to develop critical reflection and writing skills. This paper reviews current literature, discusses the implementation of ePortfolio across two cohorts of students, explores key issues and identifies a strategy for the wider introduction of ePortfolio across an undergraduate nursing programme.

Literature Review

Portfolios are a common assessment tool used in undergraduate nursing education (McMullan, 2005; Oermann, 2002). Portfolios have to date been used as a collection of artefacts such as competencies, reflections and attendance sign offs, which have usually been submitted in hard copy (McMullan, 2005). Green, Wylie and Jackson (2014) discuss the notion of nursing education being the best place to start good professional practices. The undergraduate student nurses portfolio is an excellent starting point for introducing and developing these professional practices. These early portfolio's act as a repository for recording professional development, career advancement and planning, as well as evidence for performance appraisal and competency assessment (Andrews & Cole, 2015; Curtis, 2012; Green et al., 2014). It is becoming more common internationally to introduce electronic or ePortfolios to students during their undergraduate education (Green, Wylie & Jackson, 2014). The benefits of using an ePortfolio in undergraduate nursing education are many and varied (Curtis, 2012; Garrett, MacPhee & Jackson, 2013; Green et al., 2014), as a repository for documents, artefacts and information, reflective journal, resume, and professional development record. The introduction of ePortfolio's needs to be consistent with sound educational principles around assessment and learning styles.

Assessment and ePortfolio

Curtis (2012) discusses how the ePortfolio can be used for not only a platform for storing information, but provide "transparency of the learning process and facilitating visibility of learning and formative assessment" (p. 66), with feedback to students supporting their development and critical reflection skills. Formative feedback in ePortfolios can improve summative assessment results (Green et al., 2014). Andre and Heartfield (2007) discuss the need for clarity in regard to the intended learning outcomes of using portfolio's in assessment and breaks this down into educational, staff development and regulatory outcomes. They go on to support the use of portfolios in the development of the learner, in particular "evidence based practice, professional accountability, application of theory to practice and responsiveness to change" (Andre & Heartfield, 2007, p. 58).

Assessments attached to ePortfolio need to consider how this will work in reality as it contradicts some of the other literature, which suggests that ePortfolios should not be used for summative assessment, however in saying this, it needs to be acknowledged that linking ePortfolio to assessment can be a strong motivating factor to encourage use (Andrews & Cole, 2015; McMullan, 2005). Andrews and Cole (2015) talk about the ePortfolio providing "assessment of learning and assessment for learning" (p. 569), with the ePortfolio becoming more of a "space for learning rather than an assessment space" (p. 571).

Learning styles and ePortfolio

Green et al. (2014) state that the use of an ePortfolio is consistent with different learning styles, auditory, visual, kinaesthetic and therefore should meet the needs of most students. The critical component is how the ePortfolio is introduced and how well supported students are in using the ePortfolio in such a way as it best meets their individual learning style. Nielsen, Pedersen, and Helms (2015) discuss how important the use of ePortfolio can be in supporting the student to develop alternative learning styles, in particular the power of learning through writing. Writing in a portfolio particularly as a journal is a powerful tool in support of 'reflection-on-action' (Green et al., 2014; Nielsen et al., 2015). Romova and Andrew (2011) describe the benefit of using a portfolio to develop writing skills and the benefit of reflection on gaining "key academic literacies" (p. 120). Further,

the effects of blogging and electronic journaling appear to have a positive impact on writing skills (Anderson, 2010). Garrett et al. (2013) identify the need for the portfolio to be constructed and owned by students, as it is the process of preparing the portfolio that promotes active learning.

Electronic Platform

The literature discusses the use of technology in undergraduate nursing education as having the potential to be stressful, causing anxiety for both students and tutorial staff (Andrews & Cole, 2015; McMullan, 2005), and therefore ePortfolios need to be introduced carefully with clear guidelines and good support structures. The stress of introduction can also be impacted by many variables that the educator may or may not have direct control over, i.e. IT access and reliability (Andrews & Cole, 2015), but can seriously disrupt the introduction of ePortfolio. The critical thing is that the implementation is not ad hoc, is supported both within the programme by sound pedagogy and the wider organisational systems and processes.

There are a variety of ePortfolio platforms available, however in New Zealand we have access to Mahara (<https://mahara.org/>), a free, open source ePortfolio platform that students and tutors can access through the Learning Management System (Moodle). There are varied opinions on the suitability of Mahara as an ePortfolio platform across undergraduate and postgraduate nursing programmes across New Zealand. Mahara is the only free specialist ePortfolio that is available as open source and after looking at other options being used nationally and internationally, Mahara was the option chosen. Mahara is supported internally and contains functionality relevant to nursing. In particular the functionality around journaling, recording continuing professional development and competency assessment through the latest upgrade which includes a 'Smart Evidence' function. All of these factors supported the decision to use the Mahara platform.

Andrews and Cole (2015) saw the ePortfolio platform Mahara as complex and only found that introducing small components of it at one time rather than all at once was a good way to proceed. Complexity increases over the three years, with the components developed overtime becoming a extensive portfolio of evidence for employment purposes, by the time the student has completed their undergraduate degree. This is supported by Bright (2016) who explored the relationship between Mahara as an ePortfolio, with social constructivism, scaffolding and gradual introduction of assessment components.

Project Outline

Tutorial staff (n=7) working across the the first and second years of one nursing degree programme participated in the project along with a senior academic staff member (SASM) overseeing the project. There were three key stages to the project.

1. The SASM worked with the tutorial staff from the programme to introduce ePortfolios as a concept, facilitate training on the Mahara platform and plan the introduction of ePortfolio's to the students. This session was facilitated by the organisation's online educational support staff over one hour. Further support was provided one to one, by both the support staff and the SASM as required. It was expected that the tutorial staff would then continue to use the ePortfolio along with the students and reflect on their experience.
2. The SASM, along with the tutorial staff, provided ePortfolio training to the students in year one and year two. These were hands on sessions with students either using their own device or borrowing a device from a laptop bank that was made available for the session. The facilitators focussed on the journal section of the Mahara ePortfolio, asking students, who were about to go

into a clinical placement, to use the ePortfolio for regular reflections throughout their placement. These reflections could then inform the student's summative reflective assessment, which was due two weeks following their clinical placement. In addition to this the students competency assessment forms were made available in word documents to store and add to as they worked through their placements.

3. The final stage included tutorial reflections and student evaluations. The project team reflected on how their experiences of using and supporting students to use the Mahara ePortfolio. Two reflective sessions were held, one immediately post the initial training and introduction of Mahara ePortfolio to students. The second reflection occurred at the end of the semester following review of the student evaluations.

Student evaluations, which are routinely undertaken at the end of a course, were critical to ensure that the student experience was captured. These evaluations have standard questions, along with two additional questions that can be targeted for specific purposes. The project team asked the following questions relating to ePortfolio use:

How did you find using the ePortfolio during your clinical placement?

How should the ePortfolio be introduced into your nursing degree?

Thematic analysis (Saldana, 2012) was applied to the notes from the project team reflective sessions and student evaluations. This process identified the following overarching themes that informed the planning for the wider implementation of ePortfolio into the nursing programme – motivation and timing; training and support; technology and access.

Evaluation Findings

Project Team Reflections

Unfortunately most of the tutorial staff only attended the training sessions, with only two engaging in using the ePortfolio, themselves. Time factors including workload and assessment marking were important considerations for the tutors. As they did not have time to practice using the Mahara ePortfolio platform, their confidence suffered and they gave up trying. Several staff identified that the ePortfolio did not have the same priority for them, as it was not a summative requirement for students. Despite this the tutorial staff could see the benefit for using the ePortfolio and were supportive of introducing ePortfolio into the programme the following academic year. The key consideration was that the ePortfolio platform was introduced early and linked initially to formative activities before being used for any summative assessments. Tutorial staff were clear that training and support needed to be well planned and ongoing.

Tutorial staff considered the benefits of introducing the ePortfolio slowly over three years, thus allowing students and tutorial staff to get used to the technology and how it is used in a staged and well managed process. This gradual introduction would also allow the ePortfolio to be linked to increasingly complex activities over the three years, as students and staff confidence develops in using the ePortfolio. Other benefits that the staff could see for using ePortfolio were that students have more control over how they used their ePortfolios, rather than the current prescribed hard copy portfolios that students were required to submit.

The project team identified that a lack of a shared understanding of the place of summative assessment and portfolios in general was also identified as something that needs to be worked through to ensure clarity for both students and staff. The project team were also clear that the ePortfolio needs to add value to the student learning journey, not just be added on top of what is already a full learning workload. How the ePortfolio is used needs to be aligned with the programme's curriculum philosophy, evidence based and purposeful.

The actual platform of Mahara was hotly debated between the project team, as it is in the literature. The choice of Mahara as a platform we believe was a good one, however there are issues that need to be addressed by the organisation, relating to upgrading the current software, hosting and working out how students will access as an alumni.

Student Evaluations

Out of 30 students across year one and two, only two students had actively used the ePortfolio, one from each year of the programme. One theme identified was lack of motivation (n=18), with many having valid reasons for not finding the motivation to engage with the ePortfolio:

- *Not important; No urgency*
- *Too occupied with other stuff*
- *Lack of understanding of Mahara*
- *Don't know what to use it for, limited understanding*
- *Stressed out about the exams*
- *It did not seem like much of a priority*
- *Access (n=8), with these students identifying that they could only access the internet at school or through the local library as could not afford [the internet] at home*

Students identified that the timing of the ePortfolio introduction was not the best for them (n=15), most identified that it would be better to introduce the ePortfolio much earlier in the programme. Training (n=12) was another theme, along with allowing plenty of time for the students to 'play' before they were required to use the ePortfolio more formally.

- *Introduction and regular follow up sessions... lunctimes; have more sessions*
- *Sessions to play and familiarise*
- *Make it compulsory (n=5)*

Another theme was for tutors to ensure repetition/reminders (n=10) in regard to using the ePortfolio. One student identified a interesting way to improve use: "*make an app so it can be accessed easily through the phone and iPad*".

Discussion

The ePortfolio was introduced to students during the second semester and just prior to their going on clinical placement. This was the case for both Year One and Two students. The timing of this was not ideal. Students had a variety of assessments and exams that they were working on at that time and this was identified as a barrier to them finding the time to use the ePortfolio. This was reinforced by the tutorial staff, who also stated that the timing was not ideal as they too had assignments to mark and clinical assessments to complete and therefore they did not really engage with using the ePortfolio. Both tutorial staff and students could however see the benefit of using ePortfolio, once they have had time to understand and integrate them into their programme. Peakcock, Gordon, Murray, Morss and Dunlop (2010) described faculty barriers to the implementation of ePortfolios as including limited understanding of the tool, and "initiative fatigue" (p. 827). With any requirement to implement this type of change there needs to be staff development and support from the institution. This "initiative fatigue" was a factor in this project, both tutorial staff and students felt as though it was one more thing on top of what was an already busy workload.

It is clear from the literature that the place of the ePortfolio in assessment needs to be further articulated as to whether the ePortfolio is the assessment or a repository for assessment artefacts, of which components can be used for assessment purposes. The notion of ePortfolio as assessment was debated, both between the project team and other interested colleagues. There were mixed understandings of how ePortfolio and assessment should be aligned. The critical issue here appears to be how the ePortfolio is aligned with both the assessment, the curriculum and its overarching philosophy. Bright (2016) explored the relationship between ePortfolio's (using Mahara as the platform), social constructivism and assessment. His analysis supported the need for ePortfolios to be introduced and supported by a software platform that was "mindful of the underpinning pedagogical theory" (p. 33). Bright went on to say that when our pedagogy, platform and learning activities are aligned, the learning experience is more meaningful. This alignment needs to be considered and clearly articulated before any ePortfolio is widely implemented.

Next steps

A proposal for wider implementation of ePortfolio has been submitted, as outlined in Figure 1. The nursing programme will explore in more details how ePortfolio can be incorporated into their curriculum to ensure alignment and added value. Introduction of the ePortfolio will see a gradual aligning with formative assessment processes initially, allowing students and staff to become familiar and confident with the electronic platform before it is used for summative assessment purposes. Once they are comfortable, each programme will add further complexity as students progress through the levels.

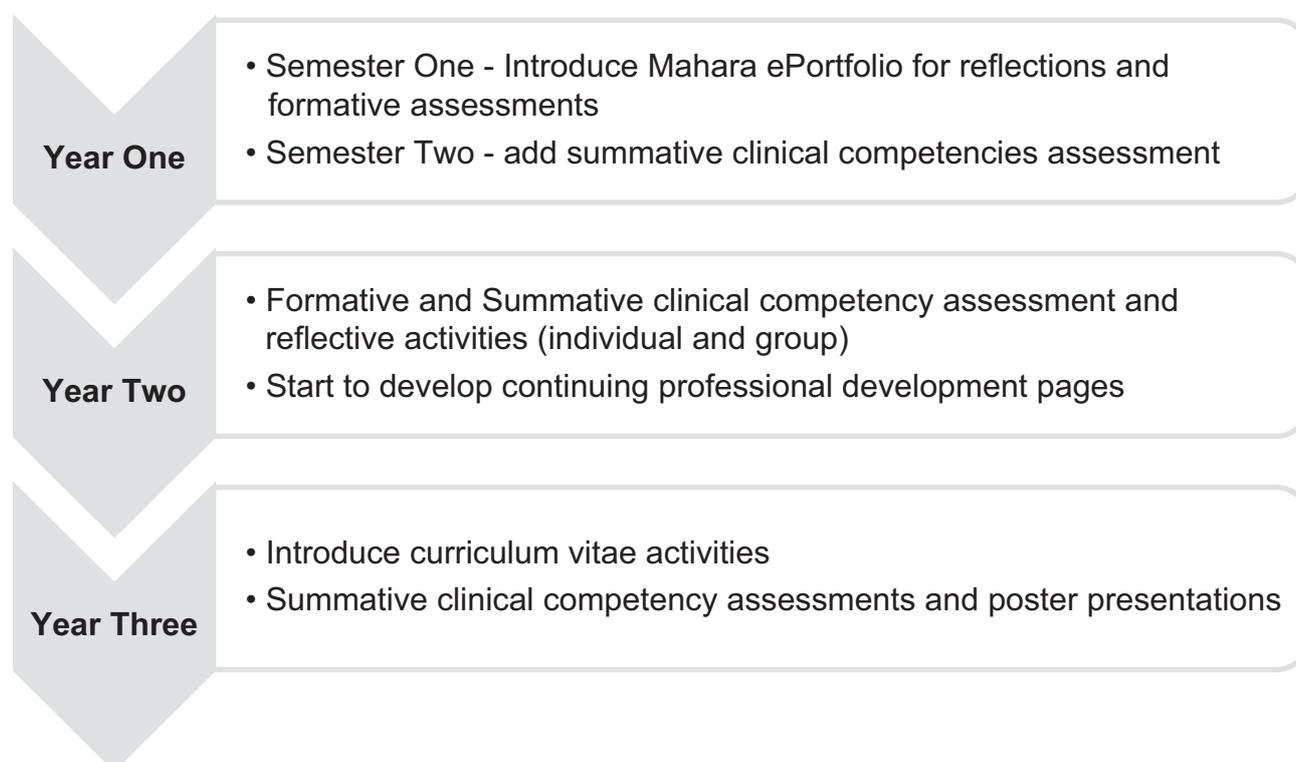


Figure 1: Stages of ePortfolio implementation

At each stage of introduction the programme staff will review how the ePortfolio continues to support student learning, rather than just adding to their workload. Further evaluations will be undertaken once the ePortfolio is introduced in order to continue growing our understanding of ePortfolio as a learning tool in undergraduate nursing education.

Conclusion

The benefit of introducing ePortfolio's into an undergraduate nursing degree is that the ePortfolio can follow the student to subsequent years of education, building one repository to show the student's development over time. The ePortfolio can then follow the student once they graduate and into their employment, where portfolios evidencing competence are, and will continue to be, required. Literature supports this, along with supporting the student to develop critical reflection and writing skills through the use of an ePortfolio. The aim of this project was to identify educationally sound strategies for supporting tutorial staff with the integration of ePortfolios into an undergraduate nursing degree. The key findings were directly related to ensuring that ePortfolios align with curriculum, add value and are purposeful. And that training and support for the introduction of ePortfolio, needs to be timely and ongoing with both students and tutorial staff. This needs to be considered as a priority in the role out of ePortfolio to ensure that staff understand the rationale and can see the benefit of incorporating something new (or different) into the curriculum.

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