
Charles Darwin University

Australian midwifery student's perceptions of the benefits and challenges associated with completing a portfolio of evidence for initial registration

Paper based and ePortfolios

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Published in:
Nurse Education in Practice

DOI:
[10.1016/j.nepr.2019.07.003](https://doi.org/10.1016/j.nepr.2019.07.003)

Published: 01/08/2019

Document Version
Peer reviewed version

[Link to publication](#)

Citation for published version (APA):

Gray, M., Downer, T., & Capper, T. (2019). Australian midwifery student's perceptions of the benefits and challenges associated with completing a portfolio of evidence for initial registration: Paper based and ePortfolios. *Nurse Education in Practice*, 39(August), 37-44. <https://doi.org/10.1016/j.nepr.2019.07.003>

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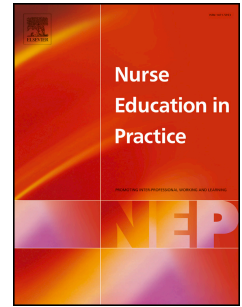
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Accepted Manuscript

Australian midwifery student's perceptions of the benefits and challenges associated with completing a portfolio of evidence for initial registration: Paper based and electronic portfolios

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PII: S1471-5953(19)30132-5

DOI: <https://doi.org/10.1016/j.nepr.2019.07.003>

Reference: YNEPR 2597

To appear in: *Nurse Education in Practice*

Received Date: 11 February 2019

Revised Date: 21 June 2019

Accepted Date: 7 July 2019

Please cite this article as: Gray, M., Downer, T., Capper, T., Australian midwifery student's perceptions of the benefits and challenges associated with completing a portfolio of evidence for initial registration: Paper based and electronic portfolios, *Nurse Education in Practice* (2019), doi: <https://doi.org/10.1016/j.nepr.2019.07.003>.

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Title Page

MIDWIFERY STUDENT'S PERCEPTIONS OF THE BENEFITS AND CHALLENGES ASSOCIATED WITH THE COMPLETING A PORTFOLIO OF EVIDENCE FOR INITIAL REGISTRATION: A COMPARISON BETWEEN PAPER BASED AND ELECTRONIC PORTFOLIOS.

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Acknowledgements

We would like to thank the midwifery students who participated in this study, without their involvement this study would not have been possible. Thankyou.

Grant

Funding: This work was supported by the University of the Sunshine Coast, Blended Learning Fund. We would like to thank the university for the donation of \$1,000 towards refreshments for focus groups, travel expenses, and transcription fees.

Title: Australian midwifery student's perceptions of the benefits and challenges associated with completing a portfolio of evidence for initial registration: paper based and electronic portfolios.

Abstract

Portfolios are used in midwifery education to provide students with a central place to store their accumulative evidence of clinical experience for initial registration in Australia. Portfolio formats can be paper-based or electronic. Anecdotal discussion between midwifery students in Queensland debated the best format to document the requirements for the Australian Nursing and Midwifery Accreditation Council (ANMAC) standard 8.11. Midwifery students using paper-based portfolios envisioned that an ePortfolio would be streamline, simple, safe to use, and able to be used anywhere with WIFI, while some students using an ePortfolio expressed a desire to have a paper-based portfolio as a hard copy. This situation called for evidence of a comparison to resolve the debate.

The aim of this study was to investigate midwifery students' experiences of the benefits and challenges between paper-based and ePortfolios when compiling evidence to meet the requirements for initial registration as a midwife in Australia (ANMAC, 2014).

Highlights

- Each type of portfolio had challenges and benefits
- Portfolio completion is time consuming, and stressful due to the need for verification of evidence.
- Students require early and regular feedback on portfolio development.

National standards are required for consistency in documentation across universities

3-4 Key words: Portfolios, ePortfolio, midwifery students national standards

Title: Australian midwifery student's perceptions of the benefits and challenges associated with completing a portfolio of evidence for initial registration: paper based and electronic portfolios.

Introduction

Portfolios have been used for many years by professionals as evidence of Continuing Professional Development (CPD) for registration. McMullen et al. (2003) define a portfolio as; *"a collection of evidence, usually in written form, of both the products and processes of learning. It attests to achievement and professional development by providing critical analysis of its contents"* (p. 283). In healthcare, the United Kingdom Central Council (UKCC) first required practitioners to keep portfolios of evidence to demonstrate CPD in the early 1990's (UKCC, 1994). Subsequently, numerous books emerged about creating and maintaining a portfolio. These offered a guide for practitioners on the completion and development of their portfolios and provided information about the intricacies of expected portfolio content, reflective practice and self-development (Andre & Heartfield, 2016). In Australia ePortfolios were adopted in the early 2000's as a means for health professionals to record achievements and facilitate reflective practice (Duncan-Pitt & Sutherland 2006). Portfolios were traditionally completed as a paper-based portfolio of evidence in a folder. Several issues have been identified with paper-based portfolios (Pincombe et al., 2010) for example they are cumbersome, hard to assess, and there are issues of confidentiality. EPortfolios are an alternative electronic version that can contain templates for completion. An ePortfolio is an online repository where the users can collect, organise, reflect upon, and share evidence of their activities and experiences (Beetham, 2005; Sutherland, 2011).

Studies which have followed the implementation of ePortfolios have discovered both students and academics faced challenges during the implementation and transition phases (Slade et al., 2014). Slade et al. (2014) reported initial resistance from staff and midwifery students during the transition from paper-based to ePortfolios, as both academics and students learnt to navigate the new online system. Subsequent follow up analysis reveals once the initial challenges are overcome, and ePortfolios are adopted, they provide a secure location in which to store collective information (Brown-Wilson et al., 2018). The ePortfolio is now recognised as a valuable learning and assessment tool for evaluating the readiness of midwifery students in their transition to becoming registered midwives (Baird et al., 2016; Sidebotham et al., 2018).

Background

In Australia midwifery students are required to complete portfolios of evidence to demonstrate how they have met the Australia Nursing and Midwifery Accreditation Council (ANMAC, 2014) standards for the midwife prior to initial registration, in particular, standard 8.11: 'Management of Midwifery Practice Experience'. See Figure 1 below outlining the statutory midwifery practice experiences required for initial entry to the midwifery register.

Figure 1: Australian National Accreditation Standards.

Portfolios can also be used to document hours of clinical practice experience, for the program of study. While there are no specific mandatory hours of clinical practice in Standard 3: Program development and structure, ANMAC do specify that "Theory and

practice are integrated throughout midwifery programs in equal proportions (50 per cent theory and 50 per cent practice)” (ANMAC, 2014; p15).

Research question

What are midwifery students’ experiences of completing a portfolio of evidence for entry to the register as midwives?

Research Approach

Research design and methods were selected that would collect appropriate data to answer the research question. A qualitative approach was used to complete an exploratory research study to investigate midwifery student’s experiences of completing a portfolio of evidence for initial registration as midwives. A comparison, involving midwifery students at two South East Queensland universities completing portfolios in different formats; paper-based and electronic portfolios (ePortfolio) was planned.

- Site 1: Bachelor of Midwifery program: ePortfolio
- Site 2: Post Graduate Midwifery program: paper-based portfolio

Site 1: Bachelor of Midwifery program: ePortfolio.

The ePortfolio was introduced in 2009 to master of midwifery students and was therefore already established when the Bachelor of Midwifery program commenced in 2017. In the first year of use the ePortfolio workbook was found to be slow when processing large quantities of data, consequently changes were made to separate the workbook into templates for quicker processing.

Students commence their ePortfolio in semester 1, year 1. Originally students were required to reflect on every clinical midwifery experience however, in response to student

feedback changes were made in semester 2 2017 so that students were only required to reflect on their COC experiences.

Site 2: Bachelor of Midwifery (Graduate Entry): paper-based portfolio.

The paper-based portfolio was introduced in 2011 at the inception of the midwifery program. The paper-based portfolio, known as the 'clinical record book' is commenced from the first clinical placement (semester 1, year 1) and taken to every clinical experience. The portfolio contains pre-defined sections where students record clinical practice hours, midwifery skills (both mandatory and non-mandatory), and summaries of continuity of care experiences. Each entry is hand written and verified by a health practitioner signature. The portfolio is submitted to the university for marking at the end of each semester.

Each site uses a portfolio for collecting evidence of the ANMAC (2014) standard 8.11. Table 1 shows what is documented in each portfolio at each university and illustrates the different requirements within each portfolio.

Table 1: Purpose of portfolio use at each site.

Research Methods

Focus groups were chosen as an appropriate method of data collection because interviews facilitate group discussion between individuals that share a common experience (Green, 2013; Krueger & Casey, 2000). Participants who know one another and share a common interest are able to express a range of feelings, opinion and ideas so that they can bounce ideas off one another, to agree or disagree with points of view and establish a consensus opinion (Berg, 2004; Krueger & Casey, 2000; Kvale, 1996).

Ethical approval for this study was granted by each university's ethics committee: Site 1 Ethics Approval No. A181062 and site 2 Ethics Approval No. 0000021046.

Recruitment

An information sheet was sent to all participants before the focus group, explaining the requirements of their participation. Participants were advised that the interview would be recorded for transcription, and they were asked to sign a consent form indicating their voluntary contribution, and ability to withdraw at any time.

Data Collection

In total n=26 midwifery students participated in the study. The midwifery students were a combination of undergraduate midwifery students and graduate-entry midwifery students (studying to become midwives following nursing registration). As students were in their last semester they were familiar with their mode of portfolio and were able to provide a valid opinion on the use of their portfolio. Table 2 below outlines the number of focus groups held, at which sites, and the participant numbers in each focus group. Five focus groups were held. Each focus group comprised 4-8 students and one facilitator. Two focus group interviews occurred with ten midwifery students studying a Bachelor of Midwifery and completing an ePortfolio. Three focus group interviews occurred with 16 midwifery students studying a Bachelor of Midwifery (Graduate Entry) using a paper-based portfolio.

Table 2: Outline of the number of focus groups, sites and participant numbers in focus groups

All focus group interviews were digitally recorded. The research interviewer who facilitated the focus group interview/s was an academic from the other university (unknown to the students). The researcher opened the semi-structured interview by asking an open question of the group and inviting each volunteer to contribute their thoughts on the question. The researchers encouraged discussion of points made and explored relevant tangents whilst keeping the conversation on track. A protocol of interview questions for the focus group (Figure 2) was used to guide the conversation but maintain consistency across the focus groups. The facilitator ensured all participants had equal opportunity to contribute individual thought to the discussion (Kvale, 1996) and avoided the risk of forming a collective 'group think' (Fontana & Frey, 2003).

Figure 2: Protocol of questions used for the focus group interviews:

Data Analysis

Digital recordings of focus group interviews were transcribed and anonymised as individual speakers were then given pseudonyms. Descriptive content analysis (Erlingsson & Brysiewicz 2017) initially facilitated extraction of information to answer the research questions. Coded segments of the conversation were labelled in an iterative process (Mills, 2010) which involved repetitive, recursive reviewing and revisiting the data to gain rich detailed description. Emergent themes were discussed and confirmed by the research team.

Analysis of the focus group conversations revealed where consensus existed regarding the challenges and benefits of portfolio completion to meet the ANMAC (2014) requirements

and enabled the comparison of similarities and differences between paper-based or electronic records.

Results

Two main themes and four subthemes emerged from the data;

Theme 1: Benefits of maintaining a portfolio of evidence

Theme 2: The challenges of completing the portfolio of evidence

2.1 Fear of losing it

2.2 Time consuming – ‘invisible time’

2.3 ‘Chasing signatures’

2.4 Feeling unsupported

Theme 1: The benefits of maintaining a portfolio of evidence

Positive aspects of completing the portfolio were evident in both types of portfolio. Both portfolios had similar advantages. Students recognised the benefits of the portfolio as a learning resource where they could record their progress and monitor their own professional development as they completed their midwifery experiences.

Focus Group (FG) 2: Madelyn expressed; *'it's positive, it makes you think about everything you're doing... okay I am actually getting more skilled as time goes on..., I've actually done this I can achieve this competency, I guess'*.

Some benefits of maintaining a portfolio were type specific, for example, the paper-based portfolio with its written pages enabled students and midwifery facilitators to easily view the student's progress. Students using the paper-based portfolio liked the physical evidence. Participants in Focus Group 2 (FG 2) mentioned the benefits of having a paper-based portfolio included having tangible evidence and a 'keep sake' (a permanent record).

Mary said; 'I like the fact that, at the end I will have that massive thing and all of the signatures of women that I've worked with; staff, and them that have witnessed me doing these skills. So, I like that part of it'.

Molly agreed; '... it's just a physical reminder of everything that you have done, and you can use it in your workplace and say, yes, I have done that before'.

The paper portfolio also helped in planning their learning priorities;

FG 2 May commented; 'And it reminds you, all the time and all the stuff you have done, and that it is there. Because you might've done something three months ago and kind a forgot about it, and then you can remind them of, "oh, yes! I've done that before, but I could do it again." But it also is just a record inspiring me of things I have to do, so if I go onto a shift, and someone asks me, "what would you like to do today?" I can go through my book and see what I've done less of, and make sure I've done them'.

Participants also reported that their midwifery facilitators sighted the student's paper-based portfolios as evidence of their progress, which influenced what they allowed the student to do on placement.

FG2 May; 'I've had a of couple midwives, when they're going to let you do something, they kind of wanna see what you've done before. So, you can open your book and be like, this is what I've done already. Here's evidence, someone's signed it or seen it... and I just like having the physical evidence that I've actually done something, and it's all somewhere.'

While the benefits of having written evidence in a paper-based portfolio was espoused the benefits of documenting experiences in the ePortfolio afforded the students more flexibility in writing an extensive record of their experiences and enabled them to record detailed reflections. Students reported the usefulness of being able to return to their electronic entries later to edit and add to them, and they also appreciated the space to write their reflections. Nancy and Nicola in Focus Group 1 (FG1) explained;

Nancy said; 'It was good to be able to like, when I did get home, I remembered after I went over it in my head, "Okay, this is what happened today." And you could sort of look back on it further'

Nicola agreed; 'I think the reflection's helpful. Reflecting on the process as a whole'

Some students talked about the usefulness of ePortfolio entries in keeping records of their COC women's care, for example Nicola (FG1) was able to access details about her COC woman and the date of her scan;

Nicola identified: 'the midwife said to the woman; 'When did you have this scan, and when did you have that?' And you've sort of got it embedded... and your woman goes, "How did you remember that?'

The benefit of the ePortfolio templates is that students could tag any experience to duplicate the entry in multiple locations. For example, students could tag items that were COC entries, so that any antenatal, birth or postnatal examination needed to be recorded once and then tagged as COC, or complex, and it would appear in the correct section of the electronic workbook. This was intended to save the student's time. The following is a narrative from Focus Group 1:

Naomi; 'So if you go to any antenatal appointment you'll have your template for an antenatal appointment. Then at the end, you have to tag, it's like when you're on Facebook and you do that at thing. But it's like you tag if it was a complex care, or you'll tag if it was a connect (COC), you'll tag'.

Nancy; 'So, connect one (woman 1) is tagged, so all of that comes back. Connect two (woman 2) comes up'.

Natalie; 'You start typing in antenatal, and all the antenatal comes up...'

In contrast the paper-based portfolio allowed this cross over but required students to write duplicate entries which they found time consuming.

While there were some positive aspects associated with each portfolio type presented by participants at the focus group interviews most of the discussion focused on the challenges of completing a portfolio of evidence.

Theme 2. The Challenges of completing the portfolio of evidence

The challenges were similar regardless of mode of portfolio. Several subthemes emerged in this area; fear of losing it, time consuming – 'invisible time'; feeling unsupported and chasing the signatures. The immediate challenge expressed by both sets of participants was concern associated with the risk of losing their evidence;

2.1 Fear of losing it

Students were fearful of losing their portfolio of evidence; in the case of the paper-based portfolio the risk was of leaving the portfolio somewhere or spilling something on it. For ePortfolios the fear stemmed from electronic failure to save documents or accidental deletion. For example, in Focus Group 4 Sandra discussed the issue of paper-based portfolios:

'And you'd have to create a copy of it every day, because it's placement, it changes every day. The other day, on my drive to work my water bottle leaked, and I was going to Special Care, and the midwife said let's put it over the heat lamp. So, my wet book sat under the heat lamp with the babies for the morning, and it survived, thank God. But it's a bit wrinkly now.'

In addition to the fear of losing their portfolio, other emergent challenges were associated with the process of entering information into the portfolio. Students expressed the challenges of completing their portfolios included issues with a lack of time which they referred to as 'invisible time', not acknowledged by clinicians or academics. The students main concern was achieving validation of their experiences which they referred to as 'chasing signatures'.

2.2 Time consuming – 'invisible time'

All participants in the five focus groups discussed the time-consuming nature of completing their evidence of the ANMAC (2014) standards, and the need to stay on top of documentation. The following students from Focus Group 1 (FG1) and Focus Group (FG5) reported being time poor, and their ability to maintain contemporaneous record keeping was challenged by complete circumstances.

FG1 Natalie; 'Well, I was driving an hour and 15 minutes each way, so that's on top of my day. So, to get up at 4:30, to be on time for morning shift, work the day, get home just before six, feed the kids, get them to bed and sit down ... it was just. It was the weekend, also.'

FG1 Naomi; 'The last thing you want to do is go home and then spend another three hours entering experiences in PebblePad (ePortfolio).'

Students felt that some time for documentation should be included in their required clinical practice hours.

FG5 Kim; 'It would be really beneficial if it was included in the clinical workbook. 100 hours where you're actually performing practical skills, and then you have 20 hours of documentation, or whatever the amount was.'

FG5 Katrina; 'Yeah, a lot of extra hours... when you put it all together, it's like a whole another subject. If you're spending three hours after placement, it's like you're doing a really long shift ... no other students have to do it except for midwifery students... if we're being assessed on it, it should be in our assessment hours, not our personal time.'

Neither format of portfolio was 100% acceptable to students. Participants at both universities reported recording details of their assessment of women and infants on scraps of paper and paper handtowels, which is concerning from a privacy, confidential and ethical point. Potentially, notes can be lost before the information is documented into the portfolio.

FG5 Kelly; 'We have that time between when we jot down our notes... go back and write them more academically...'

The problem accumulates over several shifts; especially when students are on block placements. This results in a huge amount of data that needs to be entered on the student's days off, so they have no down time. It wasn't just completion of documentation at home that was an issue. Seeking verification for clinical practice experiences while on placement was also problematic.

2.3 Chasing signatures

All students without exception talked about the challenge of getting experiences verified by recording the name of the registered person who had supervised their clinical experience.

This may have been a midwife, clinical facilitator, General Practitioner (GP), sonographer or obstetrician.

Students using paper-based portfolios reported keeping tags located at the appropriate point in their book with the midwives' names and the dates of the experience that needed to be signed by their supervising midwife. Students were regularly seeking to catch up with these midwives on future shifts to acquire their names, signatures and registration numbers. For example, one student in Focus Group 2 held in July was still trying to get a signature from March.

Monica; 'I've often had little sticky notes with people's names on. I've gone home afterwards and written up the ten pages... as soon as I can grab her again, "Can you just sign these pages for me," and re-sort of jog her memory about well we did this. Do you remember? You might have 10, 11 entries for her to sign.'

Students completing the ePortfolio did not have this issue, instead they needed to record the health practitioner's name and registration number. However, this too was problematic for both groups when midwives or doctors used nicknames, or a different name compared to that recorded on the professional register, or, on some occasions the students were entirely unaware of the health practitioner's name. This excerpt from Michelle in Focus Group 1 reflects the different situation students experienced when seeking names;

'Or they've just had Lolly written on her name badge, and it's like, "Well, what's your real name?" Some of them I find are all really cagey with their names... they're worried, and "what do you need me to do?" It's just awkward.'

Students at both universities reported challenges with recording the names of different health practitioners such as sonographers' names. Some student felt they were viewed with suspicion when they sought names and registration details from practitioners. For example, Monica in Focus Group 2 said;

'I don't feel right about asking a registrar or obstetrician to sign my book. I've gone twice to two different obstetric scans; we were allowed to count, and I've written them up in here. But one was a radiographer for a private company, and one was a radiographer for the hospital. I had found midwives ... that have seen me at antenatal clinics with the woman so they're happy to sign it for me.'

This raises an issue of fraudulent signatures. Signatures can be difficult to obtain, and evidence of the midwifery experiences are not counted by the university unless it is signed. As a result, some students reported that the clinical facilitators or midwives who had not actually witnessed their midwifery experiences were signing their books. Maisie from Focus Group 2 confirmed;

'Some of them are very willing and others just aren't. I might have four or five sticky notes with different people's names on the top, and the page numbers I want them to sign. Coming towards the end of the term, I wasn't gonna see that midwife, so I just asked my clinical facilitator to sign them. She said, I trust that you know what you're doing. Cause they've seen me writing in my little book when I'm with them, so trust that I'm not lying.'

Both types of portfolio caused challenges for students in getting evidence with a practitioner's signature or name and registration number. Despite the previous statements,

students felt they received little support from clinical or academic staff to complete their portfolios.

2.4 Feeling unsupported

Midwifery students in this study all agreed that they would appreciate more support to complete their portfolios. The participants felt greater support initially with the orientation and detailed explanations of what was required is warranted. They also desire earlier feedback. Molly from Focus Group 2 using a paper-based portfolio explained her issue when she had not understood the definition of complex care;

'...it was quite shocking, because we had not had any help with it. We had all just been left to our own devices, kind of interpreting....is this considered complex care? then we all got this feedback that was quite bad, and we had to go back and figure out what we're doing'.

Her peers in Focus Group 3 agreed, Charlotte said;

'We've just had a big session where we've all just unloaded a little bit and said we are struggling with it. We didn't feel we'd had enough guidance about exactly how to fill it out'

Students reported that clinicians in practice also afforded them little support, in regards to time to complete their records of evidence. Students felt there was no respect for their statutory obligation to complete their portfolio. Students were told that it is unprofessional to have their portfolios in use during their care interactions with woman. Students with ePortfolios have been told that *"it is not professional to take your device with you into appointments"* (FG5 Kate). While students with paper-based portfolios have been told to

"Get it off the desk!" (FG4 Sally). So, students felt they would benefit from more support from both academics and clinicians.

Midwifery students at both sites prior to the study expressed that they felt the alternate option of portfolio would be a better alternative than what they were currently using. However, in the final semester of their degree when the focus groups were held participants were happy to keep their existing portfolio. They felt it was better to complete a portfolio they were familiar with than transfer their evidence from one portfolio to the other.

Discussion

The aim of this study was to investigate midwifery student's experiences of completing a portfolio of evidence to meet the requirements for initial registration as a midwife in Australia (ANMAC, 2014). The following is a discussion of the findings in relation to what is currently known in the evidence.

Positive aspects of completing a portfolio of evidence

The literature suggests many positive aspects of ePortfolios, these include ease of maintenance, access and portability (Butler, 2006; Gerbic et al., 2011; Wuetherick & Dickinson, 2015) that encourage students to think critically and become independent and self-directed learners (Meyer et al., 2010; McDonald, 2012; Sidebotham et al, 2018; Downer et al. 2019). The benefits of using a portfolio of evidence as a capstone assessment has been espoused by Sidebotham et al. (2018), and Baird et al. (2016). Baird et al. (2016) acknowledges the time-consuming nature of the portfolio but justifies the benefits of reflective practice. In this study only students completing ePortfolios were required to populate their portfolio with reflective entries; compared to the descriptive paper-based portfolio entries. Table 1 demonstrates this and other inconsistencies in the required

experiences and level of documentation between the universities. Currently there is no nationally agreed standard around documentation of evidence for initial entry to practice registration; reflective versus descriptive.

The challenges of completing a portfolio of evidence

These findings have revealed midwifery students spend an enormous amount of time documenting their activities which students described as '*invisible time*', and '*chasing of signatures*' to verify their evidence.

Students complained the main challenge of completing their portfolio was the number of additional hours they needed to invest after clinical placement; outside their allocated clinical hours. Maintaining contemporaneous portfolio entries was a challenge for all students regardless of mode of entry. Time commitments have been acknowledged as the greatest challenge to midwifery students completing their professional registration standards (Tierney et al., 2017; McLachlan et al., 2013; Sweet & Glover, 2011; Licqurish & Seibold, 2012). This present study shows a lack of time continues to be a challenge for midwifery students and agrees with MacLachlan et al., (2013) findings that the completion of statutory requirements for initial registration impacts on student's lives outside of studying as they had to make documenting their experiences a priority over other personal commitments.

In addition to documentation, the time taken validating experiences by seeking signatures were reported as stress inducing, as students felt they were "*chasing signatures*" for validation of midwifery experiences. This added many additional hours to the student's workload. In this study the number of COCs did not appear to be an issue for these

midwifery students, instead they isolated documentation of the standard 8.11 requirements (ANMAC, 2014) as repetitive and burdensome.

Both types of portfolio had associated flaws. The main challenge with the paper-based portfolio was that it was unwieldy, and difficulty was experienced when trying to find entry places. The ePortfolio while not unwieldy did have internet access issues, and similarly the students were initially unfamiliar with the technology and thus were uncertain where experiences should be recorded.

Cognitive Dissonance

What this study did show was that cognitive dissonance was prevalent in these students around the requirement to complete their portfolio of evidence. The initial difficulties they all shared involved where, when, and how to record their experiences. It was apparent that students eventually resolved their issues with orientation and familiarisation of where, when and how to record their entries, nevertheless, challenges that persisted where the difficulties of acquiring validation 'signatures', the 'invisible time' not recognised in documentation, and 'fear of losing it'.

Our study has shown that portfolios do not necessarily need to be electronic or paper-based. Midwifery students who owned the paper-based portfolio expressed pride and accomplishment upon completion of their experiences, while those who completed the ePortfolio liked the freedom to be able to reflect on their experiences in detail. Nonetheless, there are benefits in helping students to use ePortfolios to assist them to develop skills in digital literacy and reflect on graduate employability. EPortfolios are useful for articulating their professional strengths when applying for jobs and recording continuing professional

development (Downer et al. 2019) with reflections on practice and documentation all kept in one place.

Strengths and Limitations

The contribution that this study makes to the literature on portfolios for midwifery students should be considered in context. A study strength is that student midwives were interviewed from two different universities; one completing paper-based portfolios while the other students were completing ePortfolios. Both undergraduate and postgraduate midwifery students were recruited, therefore, a broad range of experiences were discussed from different levels of experience with portfolio use. This adds new knowledge as the perspectives of midwifery students completing ANMAC Standard 8.11 requirements in portfolios had previously been unexplored.

Study limitations include the small sample size, and the limited generalisability of the individual findings.

Recommendations from this study.

Further research would be useful to collect data on the perspectives of midwifery students at other universities using paper-based and ePortfolios, preferably of student's experiences starting from their first year. Universities thinking of introducing ePortfolios should evaluate their students' experiences when using their current model of portfolio before changing.

Universities appear to require different depths of detail from midwifery students to demonstrate evidence of meeting the ANMAC, Standard 8.11 (2014) requirements.

Therefore, a national review is needed to establish a benchmark of the expectations required by midwifery students completing a portfolio of evidence, to meet statutory requirements for initial registration. Best practice in essential documentation needs to be

established nationally to benchmark an agreed level of depth and detail regardless of portfolio type.

Conclusion

This study has answered the posed research questions and identified the challenges and benefits of both types of portfolio. These findings show that no portfolio was found to be a better solution to the other from the student's experiences of documenting. However, the discrepancy in the level of detail each portfolio recorded needs consideration at a national level.

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Tables and figures for manuscript:

Australian midwifery student's perceptions of the benefits and challenges associated with completing a portfolio of evidence for registration: paper based and electronic portfolios.

Figure 1: Australian National Accreditation Standards.

<p>Midwife Accreditation Standards (2014) Standard 8.11</p> <p>8.11 The inclusion of periods of midwifery practice experience in the program, so students can complete the following minimum, supervised midwifery practice experience requirements.</p> <p>Continuity of care experiences</p> <p>a. Experience in woman-centred care as part of continuity of care experiences.</p> <p>The student is supported to:</p> <p>i) establish, maintain and conclude a professional relationship while experiencing continuity with individual women through pregnancy, labour and birth, and the postnatal period, regardless of model of care</p> <p>ii) provide midwifery care within a professional practice setting and under the supervision of a midwife—in collaborative practice arrangements supervision by other relevant registered practitioners (for example, medical officer qualified in obstetrics, child health nurse or physiotherapist) may be appropriate</p> <p>iii) engage with a minimum of 10 women—engagement involves attending four antenatal visits, two postnatal visits and, for the majority of women, the labour and birth</p> <p>iv) maintain a record of each engagement incorporating regular reflection and review by the education or health service provider.</p> <p>Antenatal care</p> <p>b Attendance at 100 antenatal episodes of care. This may include women the student is following as part of their continuity of care experiences. Labour and birth care</p> <p>c Under the supervision of a midwife, act as the primary accoucheur for 30 women who experience a spontaneous vaginal birth, which may include women the student has engaged with as part of their continuity of care experiences. This also involves:</p> <p>i) providing direct and active care in the first stage of labour, where possible</p> <p>ii) managing the third stage of labour, including the student providing care as appropriate if a manual removal of the placenta is required</p> <p>iii) facilitating initial mother and baby interaction, including promotion of skin-to-skin contact and breastfeeding in accordance with the mother's wishes or situation iv assessment and monitoring of the mother's and baby's adaptation for the first hour post-birth including, where appropriate, consultation, referral and clinical handover.</p> <p>d Provide direct and active care to an additional 10 women throughout the first stage of labour and, where possible, during birth—regardless of mode.</p> <p>Complex care</p> <p>e Experience in caring for 40 women with complex needs across pregnancy, labour, birth or the postnatal period. This may include women the student has engaged with as part of their continuity of care experiences.</p> <p>Postnatal care</p> <p>f Attendance at 100 postnatal episodes of care with women and, where possible, their babies. This may include women the student has engaged with as part of their continuity of care experiences.</p> <p>g Experiences in supporting women to feed their babies and in promoting breastfeeding in accordance with best-practice principles advocated by the Baby Friendly Health Initiative.</p> <p>h Experiences in women's health and sexual health.</p>
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i Experiences in assessing the mother and baby at four to six weeks postpartum in the practice setting where possible; otherwise by use of simulation.

Neonatal care

j Experience in undertaking 20 full examinations of a newborn infant.

k Experiences in care of the neonate with special care needs.

(ANMAC, 2014, p.24-25).

Table 1: The use of portfolios at each site

Evidence recorded in the portfolio and depth of detail.	Site 1 (ePortfolio)	Site 2 (Paper)
Evidence of Standard 8.11 ANMAC Clinical Experience Requirements	Free text boxes allowing extensive reflective entries detailing experiences, and linking to NMBA Competency standards for practice	Brief descriptions of each episode of care in a predefined box limiting the amount of information entered.
Record additional clinical skills and experiences	Additional skills such as CTGs VEs etc are not required to be recorded in the ePortfolio.	Yes, all additional skills and experiences are recorded in the portfolio and are signed by a midwife.
Reflections of care	Reflections documented in ePortfolio on all standard 8.11 entries	Descriptive entries for standard 8.11 A separate journal is used for COC reflections.
Clinical Assessment Tool and written feedback from midwives about students' practice during clinical placements.	Feedback from the clinical facilitator in AMSAT tool within ePortfolio each semester	No, a separate competency assessment tool is completed, and hand signed by student and assessing midwife.
Collect all Continuity of Care Experience (COC) information for each woman followed	All experiences documented in ePortfolio in separate sections of the workbook for each COC woman.	Detailed assessable reflections on COC experiences are kept in separate paper based journal.
Does the portfolio enable students to record evidence of e learning packages; blood safety, water birth	Certificates can be kept in ePortfolio.	No kept separately.
Do students record their own Clinical Learning Objective within their portfolio?	Students record their own personal learning objectives prior to placement and share these with their placement facilitator in their portfolio.	No.
Is the portfolio used to document identified learning issues.	Yes, a learning contract is uploaded once agreed between the course coordinator, student and clinical facilitator.	No, this is developed as a separate learning contract and is discussed and agreed with the clinical facilitator on site.
How are hours recorded; Clinical	Hours are recorded in SONIA the	Yes, all clinical hours and the location

hours/ sick leave/absences	student placement management software.	where these hours were achieved are recorded in the paper-based portfolio. Absence and sick leave are recorded in the SONIA database.
Students can store other CPD attended during the course	Students can store all certificates and CPD in their personal ePortfolio	Yes, there is a designated area in the portfolio to record all both mandatory and non-mandatory clinical experiences/CPD.

Figure 2: Protocol of questions used for the focus group interviews.

Protocol of questions	
1.	What do students see as the greatest benefit implicit in the way they completed their portfolio?
2.	What do midwifery students perceive to be the greatest challenges of completing their portfolio of evidence?
3.	What would their preference be for the way in which they complete their portfolio if they had a choice?
4.	Could anything have been done differently that would have improved the way they completed their portfolios?
5.	How do midwifery students feel about completing a portfolio of evidence to meet the standards?

Table 2: Outline of the number of focus groups, sites and participant numbers in focus groups

Focus Group	Type of portfolio	Pseudonyms of participants
1 Site 1 Researcher 1	EPortfolio Bachelor of Midwifery students (3 years undergraduate program) 3 Graduate Entry (RN Pathway)	Neive Naomi Natalie Nicola Nancy
2	Paper based Graduate Entry Bachelor of	Michelle

Site 2 Researcher 2	Midwifery program (18 months)	Mary Molly May Monica Maisie Madelyn
3 Site 2 Researcher 3	Paper based Graduate Entry Bachelor of Midwifery program (18 months)	Carol Cate Celine Charlotte Carmen
4 Site 2 Researcher 3	Paper based Graduate Entry Bachelor of Midwifery program (18 months)	Sally Sandra Siobhan Sue
5 Site 1 Researcher 1	EPortfolio Bachelor of Midwifery students (3 years undergraduate program) No RNs	Kate Katrina Kelly Kay Kim

Conflict of interest

The authors; Michelle Gray, Terri Downer and Tanya Capper have no conflict of interests to declare.

Funding was received from the University of the Sunshine Coast, in the form of a 'Blended Learning Fund' donation of \$1,000 towards refreshments for focus groups, travel expenses, and transcription fees. This will be acknowledged if the manuscript is accepted for printing.