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## **The complexities and challenges of introducing electronic Ongoing Achievement Records in the pre-registration nursing course using PebblePad and hand-held tablets.**

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This paper reports on a small pilot study aimed at eliciting the lecturer and student experience of using PebblePad to record the students' Ongoing Achievement Record (OAR) using hand-held tablets, at one university in England. Android tablets were purchased and attempts were made to transfer the OAR into the PebblePad system in an attempt to enhance the student experience of feedback from their via PebblePad, embed PebblePad learning technology in the practice component of the curriculum, enable the student to more readily engage in reflection and feedback with their personal tutor, practice education link and mentor, develop skills in the use of PebblePad and pilot the use of PebblePad in

developing the Ongoing Achievement Record. Focus groups were carried out with students nurses (n=6) and lecturers (n=5) where participants were asked to discuss the successes and challenges of using PebblePad for the Ongoing Achievement Record, and suggest ways in which this strategy may be implemented more widely. Through a thematic analysis of the focus groups three broad themes of 'timing', 'technology literacy' and 'the technology' were identified. The findings from the study indicated that whilst this was not a positive experience on the whole for a number of reasons, there are lessons that can be learnt when attempting to introduce new ways of engaging with technology to enhance the student experience. Recommendations for implementing such an approach in the future are also presented.

**Keywords:** Pre-registration nursing students, handheld tablets, technology, e-portfolio

### **Introduction**

Using e-portfolios enables students to give feedback on each other and is an innovative way for teachers to give written and audio feedback on the portfolio as it develops (McLaren, 2012). The use of e-portfolios has been used in medicine for over ten years and has had a positive impact in allowing students to engage with teachers and reflect on practice (Lawson, et al. 2004). However, the use of hand-heldhand-held technology and e-portfolios in pre-registration nursing to enhance understanding and reflect on learning is only more recently gaining impetus.

Pre-registration nursing students spend 50% (2300 hours) of their BSc nursing course learning and being assessed in the practice setting, and are required to complete an Ongoing Achievement Record (OAR) which is a type of portfolio detailing their progress throughout the course (Nursing and Midwifery Council (NMC), 2010). Currently within one University in England, the OAR is completed in paper format but this prohibits live feedback to, and communication between, students and their personal tutors, practice education links and mentors (a registered nurse who has undergone additional training to teach and assess student nurses in practice). However, if the OAR were electronic, access to computers for non-patient care purposes is often limited because the various members of the multidisciplinary team constantly use the computers in practice environments for patient care purposes. In addition, in local practice environments, these computers are often in open spaces and therefore offer little privacy to students and mentors to review and complete the OARs electronically.

In an attempt to start addressing the obstacles of using and accessing electronic OARs a teaching and learning project funded by the University of Bedfordshire was set up to develop the current OAR into an electronic format using PebblePad, and purchase hand-held tablets for the students and lecturing staff to overcome the complexities of computer access in practice.

The purpose of this project was to evaluate the use of PebblePad to structure the students' OAR, and the use of the handheld tablets from the student and lecturer perspective. This paper will present the outcomes of the project and share the challenges faced when

attempting to introduce this initiative. Recommendations for implementing such an approach in the future will also be presented.

## **Methods**

The objectives of this small evaluative pilot study were to:

- enhance the student experience of feedback from their via PebblePad
- embed PebblePad learning technology in the practice component of the curriculum
- enable the student to more readily engage in reflection and feedback with their personal tutor, practice education link and mentor
- develop skills in the use of PebblePad
- pilot the use of PebblePad in developing the Ongoing Achievement Record.

The key research question asked in this pilot study was: 'What are the lecturers' and students' experiences of using PebblePad to record the students' ongoing achievement record using hand-held tablets?'

## **Sample**

Pre-registration student nurses (n=6, aged between 18 and 45) and lecturing staff (n=5) agreed to participate in this pilot study. Initially ten students were invited but four withdrew. Practice Education Links (University employed lecturing staff) support the students and mentors in practice to help facilitate fair and effective teaching and assessment in practice. They are ideally placed to support students and mentors in completing the OAR via PebblePad and were able to work in collaboration with the student and mentor to ensure the OAR was completed and that student learning was enhanced as a result.

## **Data collection**

Two focus groups were carried out with the pre-registration nursing students and lecturers who participated in this pilot. Focus groups were used as a way of eliciting participants' views about the pilot and to allow participants to frame their views in their own terms (Green, 2013). Participants were asked to discuss the successes and challenges of using PebblePad for the Ongoing Achievement Record, and suggest ways in which this strategy may be implemented more widely. They were also asked to discuss the use of the tablets provided for the study.

## **Data analysis**

The focus groups were not transcribed in full, but rather the comprehensive notes taken in the focus groups were used for the analysis because only a summary of the key issues was needed (Green, 2013). A thematic analysis was carried out to identify the recurring themes and look at the relationships between the themes. Three broad themes of 'timing', 'technology literacy' and 'the technology' were identified.

## **Ethical considerations**

The Royal College of Nursing (2009) guidance on the conduct of research was adhered to throughout this study and the University research ethics committee granted ethical approval. The information sheets informed participants about consent, confidentiality, data

protection, right to withdraw, potential benefits and potential harms and all participants gave consent to participate in the evaluation.

## **Findings**

### **Timing**

Participants identified that there were many challenges with the stage at which the pilot was introduced and on reflection identified that the timing of the project was not optimal. The pilot was introduced with a small group of student in a new cohort of pre-registration nursing course in September 2012. Initially students were willing to be involved with the project however, as the course progressed they felt less able to participate and take on this new initiative, even though they were pleased to be given a hand-held tablet to facilitate it.

Students identified the course as exciting but at the same time challenging in terms of the adjustments they had to make to their personal lives and to their ways of learning. They felt that being part of this study resulted in them having to do more than the other students on their course, which included attending additional tutorial sessions, PebblePad training and increased input in terms of communicating electronically with their lecturers and practice staff. In addition to the challenges in the academic setting, many of the students had not experienced health care practice prior to starting the course and found adapting to working in practice during their first placement hard. This additional work that was different to their peers placed extra stress on them at an already challenging time.

All participants implied that had all students within the cohort been given a tablet and the use of the tablets to record their OAR had been normal practice, there may have been more acceptance of this process. Students would not have necessarily seen this as 'extra work'. There was a general feeling that students need a lot of support, encouragement and facilitation to help them engage in using technology in this way, and this could be accomplished with introducing tablets from the beginning of their course for use within the classroom. This would promote familiarity prior to entering practice and with the whole cohort using them it would remove the feelings of being singled out and having to do more.

Compounding the timing concerns for the students were the challenges faced by the lecturing staff. September 2012 saw the introduction of a new pre-registration nursing curriculum which itself brought many new challenges. There had also been a reorganisation of the healthcare departments over that summer which resulted in a significant reduction in teaching staff and a reorganisation of the teaching teams. Participating lecturers felt that this had an impact on their ability to engage in supporting the students and mentors in practice with this new initiative as effectively as they had wished. They felt disappointed about their capacity to cope with so many changes.

Both students and lecturing staff highlighted timing in terms of pressures in clinical practice. The local hospital Trust was also undergoing a major restructure at the time and there were staff shortages in practice due to seasonal illnesses and pressures. This resulted in many ward changes and staff having to move to different areas to work. There was also, for the first time, nursing students from another university sharing placements. These other students had very different practice assessment documentation and so the mentors had to

get used to working with two sets of paperwork. Adding yet another way of working with the use of electronic OARs was too much for practice staff to deal with at that time. These factors made it extremely hard for both University and Trust staff to fully engage with the project and make it an enjoyable experience rather than a burden.

Reflecting on this, and being mindful of the seasonal cycle in clinical practice, participants suggested that a future project should aim to be introduced with a March intake of students. This group is smaller and there is likely to be a lesser impact on the students, lecturers and mentors.

### **Technology literacy**

Technology literacy was discussed at length during the focus groups. Demographically the student group was predominantly aged 18 – 25, with two participants aged over 40, and their response to engaging with the project was of interest. One student declined to participate at the outset and referred to having to 'get to grips' with new technology on top of returning to study as her reason. Another was initially prepared to participate but she displayed reluctance and a sense of being overwhelmed by the technology she was being asked to use. Participants discussed the tendency to believe that all students are technology literate, and are able to quickly master any technology they are expected to use. It appeared that many students do not have these technology skills and there is, amongst some of the nursing students, a fear of new technology.

Participants did however feel that this gap in technological literacy is likely to reduce, particularly as there is a requirement to use more technology in the practice setting. They suggested that for any future initiative of this kind, providing specific sessions around the use of the technology would be important and essential to the success of the initiative. It would seem that had students learnt how to use the technology quickly they would be less apprehensive.

Participants suggested that there was also an assumption that mentors in practice were technology literate to the extent required to engage with the introduction of electronic OARs. Comments made by the students indicated that levels of literacy, and therefore the ability to use the electronic OARs, were very dependent upon which mentor they were allocated to. This highlights that the project took the technology literacy of both students and mentors for granted i.e. that they all have technological know-how. This is despite moves towards using tablets in clinical practice for recording patient information, and it was therefore suggested that in a short time both students and mentors will be more exposed to this technology.

### **The technology**

Whilst it was acknowledged that Pebble Pad has its uses and has its place in the development of e-portfolios, participants felt that Pebblepad was not compatible with the current OARs and therefore with what the project was trying to achieve. A large amount of time was spent in trying to make the current documentation fit into PebblePad but it was entirely not possible. In order for the OAR to fit into PebblePad, a major modification to the

curriculum would have been required, but this would have only been for the participating students and therefore was not possible.

The lecturers identified an additional obstacle to the introduction of the electronic OAR in this manner, which was that the University is moving to a centralised system of recording practice experiences, progress and grades awarded. They therefore suggested that this needs exploring in terms of how tablets can potentially fit into this new system as this was developed during the life of the project.

There was much discussion about the Android tablets that were purchased for use in this pilot study. Whilst the lecturers admitted to not really being familiar with the specifications of all the Android tablets available on the market, they described the one provided as being 'substandard'. All participants found them 'hard to use', 'clunky' and 'not responsive', and described them as having 'decreased functionality'. This caused much frustration and affected the way in which participants engaged with the technology and with the pilot project.

An additional problem encountered by the participants was the difficulty in gaining WIFI access while on placement. The idea of using the tablets was to promote easy and portable information exchange, however, accessing the Trust's wireless internet was a problem, and this was despite many attempts to overcome this challenge with the IT department in the Trust. They suggested that the success of any such project in the future would be dependent on wireless internet access.

## **Discussion**

Traditionally, practice assessment documentation require a mentor's signature to be valid. In order to facilitate this and to incorporate new learning techniques Fisher, et al. (2009) used a blended portfolio for their midwifery students. The focus of their research was to facilitate their students in showing that they had achieved competence and understanding in midwifery while encouraging autonomy in their practice. This blended portfolio relied on access to the internet which was not always possible in clinical practice, particularly in community placements, a problem also highlighted by participants in this current study. The researchers did investigate the use of hand-held devices but found that the cost was unaffordable which is a commonly occurring theme in the literature searched. However, the evaluations from the students in Fisher, et al's. (2009) study were positive as their personal tutors had access to their portfolios and therefore could give timely formative feedback.

The attitude of students towards the use of technology and e-portfolios was a factor mentioned by Mok (2012) who conducted a reflective study with student teachers using e-portfolios. Mok (2012) suggested that students needed support to grasp the complexities of the technology as well as help to understand how to use the portfolio for feedback and reflection. This reflects the experiences and suggestions made by the participants in this current study who suggested that the students need coaching in the use of the technology.

It is interesting to note the change in which the next generation of students are learning and the way in which current nursing students have used technology to learn. McLaren's (2012)

study looking at the use of portable devices in an action research project with schoolchildren in secondary and primary education produced encouraging results. This choice of mode of communication was positive as it enabled the teachers to tailor the feedback to the students' individual's learning needs. Although this research does not focus on undergraduate nursing students, it does highlight the need to engage with e-learning and the associated technology at an early stage which in turn makes it second nature.

Barbera (2009) compared the use of e-portfolios and netfolios used by psychology students. The netfolio is a network of e-portfolio users that encourages the students to connect with each other and offer peer evaluations and debates. An interesting result was that the netfolio users scored higher results than the e-portfolio users at the end of the course. This was attributed to the peer assessment, re-evaluation and re-working of the material. Barbera (2009) attributes this to metacognitive thinking where the student learns through reflection. Norris and Gimber (2013) agree that the use of metacognition in nursing leads to deeper clinical reasoning skills. They suggest that the use of social media such as twitter can enhance the metacognitive skills in student nurses. Interestingly, they also propose that the use of twitter to discuss assignments may encourage students to engage more with learning.

Norris and Gimber (2013) reviewed the use of twitter, blackboard and e-portfolios and their use in supporting nursing students. The underlying theme was that the use of technology was useful in enabling the students and teachers to reflect on work and therefore promote clinical reasoning skills. However, if the technology is poorly understood or unless both student and teacher fully participate, then it can be unproductive.

Murray and Sanders (2009) proposed that acceptance and implementation of new teaching ideas is central to its success. Their research used mixed methodology to evaluate the use of e-portfolios by undergraduate medical students. They found that 87% of medical students used their e-portfolios regularly. This was a spurious result as overall only 24% of the students engaged over the year of the study. The qualitative feedback suggested that had the students received ongoing feedback they might have engaged with the e-portfolio more regularly.

E-mentoring is discussed in the literature alongside e-portfolios and is described as a practical means to engage students in online scholarly activity (Dahalan, et al. 2011). A study of 38 pairs of students and mentors who engaged in e-mentoring in Missouri over 3 years found that overall the use of technology benefited both the learner and the teacher (Miller, et al. 2008). As there was a large geographical area covered by the nursing students, feedback from mentors via e-mentoring was perceived as positive for both parties. The mentors reported that they were more confident in their ability to mentor but did cite distance as a drawback to effective mentoring. The students agreed that physical distance and time delay in responding to queries was a negative factor for them. The introduction of electronic OARs into the current pre-registration nursing course facilitated by good quality handheld tablets may help to improve the students' experience, particularly if the student is working remotely from their mentor which may be the case in community settings.

Wild, et al. (2013) used blogging to support their occupational therapy students in practice. They acknowledged the need to adhere to professional standards and recommend a moderator (staff member) in future to oversee the use of social media such as Facebook for future student support. The learner's attitude is a recurring theme. Dahahan, et al. (2011) found that the success of e-mentoring is largely dependent on the attitude and engagement of the student. A survey analysis using 205 students showed that there were two types of learners; autonomous and those who preferred teacher assisted learning. The researchers concluded that successful learners engaged with their mentors regularly.

Using hand-held mobile devices in nursing and medicine is a quick and efficient way to update clinical knowledge (Johannsson, et al. 2012; Wyatt & Krauskopf, 2012; Wood 2010). Mobile devices enable nurses and nursing students to update and improve their clinical knowledge and skills while providing safe patient care. Wood (2010) studied the impact of new technologies, including mobile devices in an acute hospital in Toronto. The findings indicated that the new technology was having a positive impact on learning and nurse's involvement with this was increasing.

### **Conclusion**

This small pilot study aimed to elicit the lecturer and student experience of using PebblePad to record the students' ongoing achievement record using hand-held tablets. The findings from the study indicated that whilst this was not a positive experience on the whole for a number of reasons, there are lessons that can be learnt when attempting to introduce new ways of engaging with technology to enhance the student experience. The key positive outcome from this small study is that facilitating students in their use of handheld tablets to enhance their learning should not be dismissed, but instead should be actively encouraged. This study has provided the impetus for further work into introducing handheld tablets in the pre-registration nursing curriculum and further funding has been secured to ensure that all students in the March 2013 pre-registration nursing cohort are able to benefit from this mobile technology.

### **Recommendations**

Introduce the use of handheld tablets at the beginning of the course with all students to enable them to familiarise themselves with the technology.

University IT systems should be flexible enough to meet the needs of courses.

Invest in good quality hand-held tablets.

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