Implementing an E-portfolio within Non-Medical Prescribing Modules

Val Ely, Senior Lecturer, University of Huddersfield
Vicky Kaye, Senior Lecturer, University of Huddersfield
Dr Antony Osborne, Academic Librarian, University of Huddersfield

The University of Huddersfield
Queensgate
Huddersfield
HD1 3DH

v.ely@hud.ac.uk
v.kaye@hud.ac.uk
a.osborne@hud.ac.uk

Abstract

This article discusses the experience in one University when implementing a web based e-portfolio into their non-medical prescribing (NMP) modules. Pertinent screen shots will illustrate the e-portfolio and its use. The e-portfolio adopted has all the elements of the former paper-based document. However, a key advantage of implementing an e-portfolio is the contribution it makes to the National Information Board's (2015) digital priorities for health and social care. In this case, in equipping NMP students as part of the wider healthcare workforce with such digital knowledge skills as are deemed appropriate to their role and impending prescribing role too. Adopting an e-portfolio within the NMP modules has brought many benefits. These include strengthened assessment methods in terms of authenticity, reliability, validity and mentor preparation. The main challenges that were experienced concur with those reported by Moule et al (2011) and were related to the IT literacy skills of participants as well as computer/internet access issues within their own workplace environment. The module team overcame these through continual review of the assessment strategies being deployed as well as the functionality of the e-portfolio.

Keywords

E-portfolio; Non-medical prescribing; Competence; Assessment; Digital literacy

Introduction

Prescribing practice must be informed by the latest evidence and policy directives as clearly articulated by the regulators (GPC, 2006; NMC, 2006; NMC, 2009; GMC, 2013 and HCPC, 2013.) The NMC (2015) has recently sought to reiterate the importance of safe nurse prescribing and medicines management by its inclusion of related standards in its 'Code' for the first time. Keeping informed of the latest

evidence and related policy necessitates effective use of IT so within the NMP modules the module team have long embraced the use of IT as a means of ensuring that our students develop the transferable skills necessary for them to become safe and effective prescribers.

This article will discuss the use of a web-based e-portfolio in our modules as one aspect of our overall NMP IT teaching and assessment strategy. It will also identify the main benefits and challenges encountered.

Background

In 2010 the module team implemented an e-portfolio within our NMP provision which currently comprises the following modules:

- Nurse Prescribing from the Community Practitioners Formulary (V100 Mode 2 and V150);
- Independent and Supplementary Prescribing;
- Conversion to Independent Prescribing for Physiotherapist/Podiatrist Supplementary Prescribers.

Cambridge (2008) notes that e-portfolios allow students to develop and demonstrate transferable skills in IT and engender life-long learning. In his view, e-portfolios are also flexible in their use and provide students and module teams with the means of displaying evidence required to meet professional and regulatory body standards. Very particularly, he also asserts that they encourage the learner to engage in self-directed and independent learning. As such, all of these assertions are vital requisites for those seeking to obtain a prescribing qualification and wishing to practice as a prescriber. They are also ones that the module team seek to develop in all successful NMP students.

Why use an e-portfolio?

Green et al (2014) suggest that there are two types of portfolios, 'best work' and 'growth and development' (p 5). A 'best work' portfolio is described as a portfolio that is a collection of selected material for the purpose of review or assessment. Conversely, a 'growth and development' portfolio is described as one that demonstrates the development of a student over a period of time.

The module team implemented the 'best work' e-portfolio for two reasons. Firstly, to assess the students' prescribing practice and secondly to provide a means for prescribing mentors to assess student competency in prescribing practice as required by the NMC (2006) and HCPC (2013) prescribing standards. The elements of assessment included within the e-portfolio are: the competences from the NICE (2012) Single Competency Framework, a learning contract, verification of practice

hours, a two thousand word evidence statement demonstrating competence in practice, an example prescription, a patient testimony and a pharmacy visit. Additionally for the independent and supplementary prescribing students, a clinical management plan and a record of an additional visit with another non-medical prescriber are also included. All of these elements are prerequisites of the regulatory bodies for approval to deliver NMP modules (NMC 2006, HCPC 2013).

In the sphere of adult learning, experiential learning offers the basis of an intellectual tradition of social psychology, philosophy, and cognitive psychology which leans towards learning and education as a lifelong learning process (Kolb, 1984). The application of an e-portfolio within the prescribing module s encourages experiential learning. This is an established approach within adult education theories (Miettinen, 2000). An approach that combines study, theory and practice provides a familiar and productive way of learning (Kolb, 1984). McCormack (1999) agrees with Kolb and suggests that learning is most effective when the learner is able to make sense of new knowledge in the context of their immediate life experiences. This reiterates Kolb's view that the involvement of the learner is a key characteristic of this method. E-portfolios support experiential learning and encourage responsibility for one's own learning whilst fostering the development of accountable and autonomous practitioners (Green et al, 2014). This is crucial when the student is required to spend a prescribed number of hours in practice with their mentor independent of the module team.

Benefits of an e-portfolio

Prior to implementing the e-portfolio, students and mentors were required to complete a paper based portfolio. This meant that students carried the paper document with them during their supervised practice for their mentors to sign when assessment was undertaken. Timmins and Dunne (2009) note that the long-standing use of portfolios in both pre and post registration health professional education. The reliability of paper-based systems was brought into question though by a particular case from an NMC Conduct and Competence Panel hearing in 2011, where an independent and supplementary nurse prescribing student (V300) signed his own practice portfolio. This confirmed the need for the module team to devise more secure ways of ensuring mentor verification. Timmins and Dunne (2009) concur with this and added that the use of conventional paper copy portfolios provides module teams with challenges when ascertaining that the work produced within them is actually the students own work. Consequently implementing the e-portfolio within our modules was intended to ensure the full transparency of access by all users. This was viewed as a key benefit.

Given that anyone could potentially view a paper-based document were it to be left unattended, there has been some discussion about the confidentiality and security of

e-portfolios. From our perspective, this is countered by the fact that in our e-portfolio, each student has their own unique password and username which are confidential to them. The student is in full control of their e-portfolio and has to select with whom they wish to share their information (Green et al, 2014). Using the current e-portfolio platform the students are required to share specific elements of their work with specific people. For example, the clinical management plan, prescription and patient testimony are only shared with the module team, whereas the clinical competences are shared only with their mentor from practice. Whilst the module team acknowledges that security could potentially be an issue, hence reiterating the need for confidentiality with passwords and usernames, this does not outweigh the huge advantage of having portable access for all concerned via the internet. To combat this, proper observance of IT governance is an institutional regulatory requirement for all users of the e-portfolio in order to uphold both academic and professional integrity. Linked to this there is an expectation that all email contacts used in the e-portfolio by students and the module team will be made using University email. For all external contacts (for example, the student's mentor), only work based emails are used so as to assure security of identity.

The e-portfolio

The e-portfolio was developed by a local company which enabled the development of a bespoke e-portfolio to meet our module needs with both preparatory work and subsequent support being undertaken by the company

. Figure 1 shows the home page from the students' view. When commissioning the e-portfolio the module team considered several options. One such option could have been an open source e-portfolio. However the use of such a product would not have been practical, given the work that the module team would have had to undertake in preparing and maintaining the system following implementation.
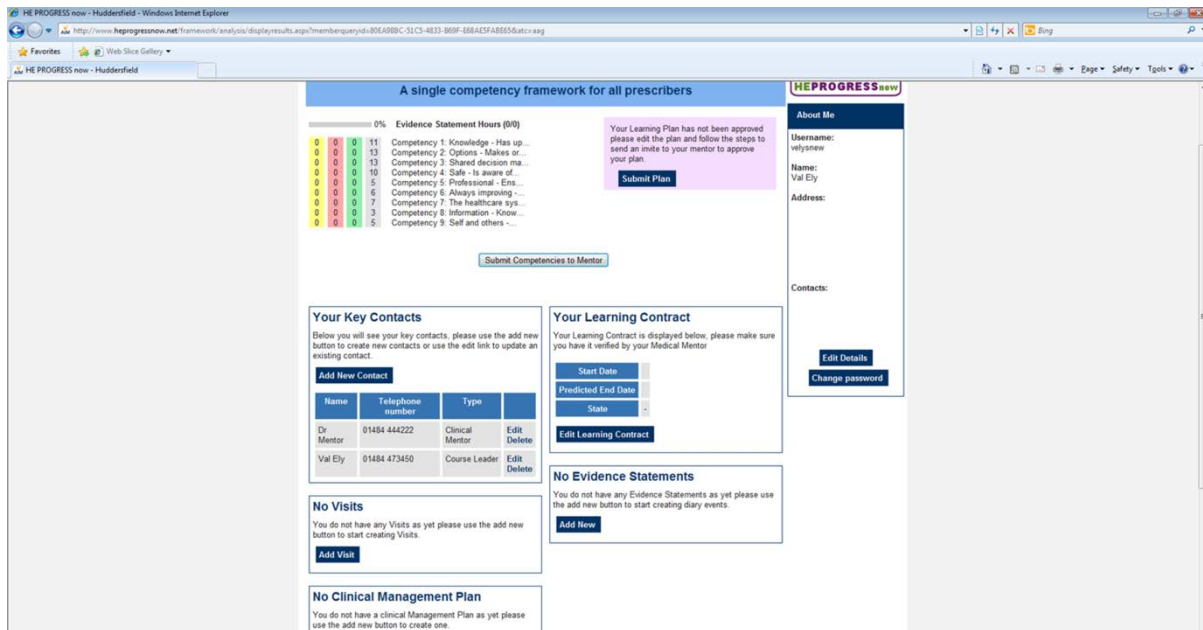
Figure 1

Issues and Challenges

Implementing an e-portfolio presented challenges for both the module team and students. Despite the intentions of the digital NHS, the module team found that there is a diverse range of IT skills across our student groups. To compensate for this, the module team developed detailed technical guidance, assessment guidance and a FAQ guide sheet. A dedicated two hour lecture at the start of the module in the computer laboratories is also provided to introduce students to the e-portfolio, plus "drop in" sessions to resolve any queries. Guidance for mentors was also made available in pre-module information and at induction. Such induction arrangements can be time consuming. However, once the students are conversant with the e-portfolio functionality and assessment task, time is saved overall for both the student and module team. This time commitment required has also been recognised and reported by EDCAN, 2008 cited by Green et al, (2014). On a positive note an e-portfolio offers the module team the opportunity to review individual student progress at a glance from the outset. Green et al (2014) agree that lecturers can keep track of students work by using an e-portfolio and intervene promptly where necessary.

Learning Contract

The e-portfolio contains a learning contract to enable students to plan their learning and assessment with their mentors throughout the module. This learning contract requires the student and mentor to plan the learning objectives for the module as

well as the activities and strategies needed to complete these objectives. Once the learning contract has been formulated, the mentor is invited to provide confirmation and feedback. According to Bailey and Tuohy (2009) learning contracts have been extensively debated in the literature in terms of both their benefits and drawbacks. The experience of the module team has been that some students have clearly benefitted from the use of a learning contract as they have valued being treated as an adult, self-directed learner as described by Knowles (1986). These students benefitted from what Waddell and Stephens (2000) noted as the active rather than passive nature of the learning process. In terms of being a safe and effective prescriber the former learning process would seem to be essential. Conversely, as a drawback some students were not ready for self-directed learning, perceiving themselves to be a novice student prescriber (Benner 1984).

Furthermore, despite being experienced healthcare professionals, some were very inexperienced in the use of learning contracts. This inexperience applied to both students and their mentors thus confirming the observations of Chan and Wai-Tong (2000). For those who found a learning contract challenging, this feeling was further compounded by the fact that it was contained within an e-portfolio rather than a paper- based version.

Submission of Evidence and Academic Integrity

Within our NMP modules the students are required to submit within their e-portfolio a two thousand word document that demonstrates how they have achieved the competence stipulated by the 'single competency framework for all prescribers in practice' (NICE, 2012). The current e-portfolio does not include scrutiny of the academic integrity of students' work. Green et al (2014) report that because the assessment is online, there may be an increased temptation by students to commit academic misconduct. If plagiarism is suspected though, the article concerned can be submitted individually to our academic integrity software for scrutiny.

Evidence Statements/Activity Log

The module now uses the NICE (2012) Single Competency Framework for all Prescribers' to assess our students in practice. Each of the nine competency domains has a number of elements which need to be verified in practice by the mentor. The e-portfolio has a dashboard on the homepage to show the stage the student has reached. The dashboard also provides a timeline indicating the start and end date of the e-portfolio assessment. There is an also an expectation that the mentor will provide stipulated hours of supervised practice as required by the regulatory bodies (HCPC 2013, NMC 2006). Therefore, students provide details in the activity log related to how they have achieved their supervised practice hours.

This ensures that an audit trail is available to track how the students have fulfilled their supervised practice requirements. To ensure authenticity the activity log is subsequently verified by their mentor.

In addition to obtaining mentor verification of competencies during supervised practice, the students are required to submit a written evidence statement which is marked by their module team. If the submitted evidence does not relate to the competencies, the student may be referred of failed at this point. For example, if the student provides any evidence "that may result in direct harm to the patient/client" they *must* be referred (NMC, 2006 p27). Examples of such patient harm could include failure to ask about medication history, allergies and any over the counter medications, or in providing incorrect dosage and/or strength of any medication discussed within the student's evidence statement. Feedback from the module team is also provided within the e-portfolio and a release date can be set so all students receive feedback simultaneously to ensure equality. The external examiner for the prescribing modules has instant online access to the e-portfolio too, which facilitates a reduction in postage costs and provides them with a clear view of all the e-portfolios under their jurisdiction.

Educationally-Led Visits

As discussed earlier, the students undertake and record educationally-led visits in their e-portfolio. All students visit a pharmacist as part of the NMP module to foster networks conducive to good prescribing practice. For those undertaking the nurse or midwife independent and supplementary prescribing module, the NMC (2008) recognise that medical mentorship is a legal requirement for those in training. However they also require that the student nurse or midwife prescriber has the support of a qualified nurse or midwife prescriber to apply the principles of prescribing practice into nursing or midwifery practice. As an example of good practice the module team have applied this practice to our physiotherapy and podiatry student prescribers too by expecting them to visit another non-medical prescriber during their module.

The student identifies their learning aims in their e-portfolio prior to their visits which is useful to those whom they are visiting so that they are better prepared for the experience they are being asked to facilitate. When the visit is complete, the student records a critical summary of how they have met their original aims and the learning outcomes they have achieved. The person they have visited is invited to then view the student's entry to confirm that the visit took place and that the critical summary

provides a true reflection of events. Once completed, the student is able to view the comments of the person visited.

Clinical Management Plan

For our Independent and Supplementary Prescribing students the inclusion of a clinical management plan is required by both the NMC (2006) and HCPC (2013). The e-portfolio requires the student to upload their developed clinical management plan for the module team to view, assess and provide feedback

Latest Developments

The module team have recently added two further developments to the e-portfolio. In the first development, the student must upload an example of a draft prescription so that the module team can assess the student's prescription writing. The second development is for the student to upload patient testimony drawn from their supervised practice. This is an important feature following the Mid Staffordshire NHS Foundation Trust Public Inquiry (2013), in relation to revalidation and as required by the HCPC for all their educational programmes (HCPC 2014). Patient confidentiality is maintained at all times, as the patient testimony is anonymous, and names on the example prescriptions are fictitious. A specific assessment criteria requiring confidentiality and anonymity of all individuals and organisations formalises this important expectation.

Moving Forward

To continue with further development of the e-portfolio, the module team have identified three main priorities derived from both internal and external factors going forwards. In terms of internal factors, some students choose to complete their e-portfolio just prior to the assessment deadline. This generates considerable work for the module team to verify clinical management plans, patient testimonies and example prescriptions before the submission date. Therefore from September 2015, submission dates will be staggered for the various elements of the e-portfolio. This will offer a more incremental approach to completion for students. In addition, it will spread the assessment load for the module team, and provide more structure for those students who struggle to take control of their own learning (Green et al, 2014).

A further development currently being explored driven by University academic integrity processes is to provide a similarity detection function within the e-portfolio to ensure originality of all student work.

Finally a key external factor to address is the implementation of Medicines Optimisation by NICE (2015). The NICE (2012) 'Single Competency Framework for all Prescribers' was due for review in May 2014. However, NICE have advised that elements outlined in this framework are being incorporated into the new medicines optimisation guideline.   Tools are to be developed to support the implementation of the guideline and NICE urge caution if using the framework after May 2014 as it may be out of date. The module team will need to ensure that the competencies used in the e-portfolio to assess students reflect this NICE guidance as further implementation tools emerge.

Conclusion

In conclusion, the implementation of the e-portfolio has brought many benefits. Earlier challenges related to IT literacy, access and connectivity have largely been addressed due to strengthened pre-module information. The student has an easily accessible e-portfolio which can be viewed in practice by their mentor and module without the need to meet face-to-face.   The mentors can verify competencies electronically and module team are reassured of the authenticity of assessment verification given the use of traceable and secure email addresses within the e-portfolio.   The module team is able to scrutinise student performance throughout the module via the lecturer platform too. This allows early detection of problems and positive intervention with individual students where required.   The e-portfolio provides a wealth of information to the module team about student and mentor activity during their practice assessment as well. Of particular interest to the module team so far has been the difference in the quality of feedback provided by individual mentors. For example, some mentors have provided many formative assessments with feedback whilst others have provided little or none. This could be an issue where students refer or fail as they could potentially assert that they have been unsupported in this assessment process. The timing of either formative or summative mentor assessment also highlights variations in practice. As a result of these observations the module team are able to strengthen their mentor preparation and update sessions.

The use of the e-portfolio also saves on the printing, paper, binding, and posting costs inherent in conventional portfolios. Given that the e-portfolio is a system based on logic, the module team too have really had to consider the purpose of what they are assessing and how assessments undertaken can be feasible, authentic, reliable and valid. As a result of implementing the e-portfolio the team have been able to review and enhance their assessment strategy within these NMP modules.

Key phrases

1. Contributes to development of additional transferable skills necessary for students to become safe and effective prescribers.

2. A flexible way to provide students and module teams with a means to display evidence to meet regulatory body standards

3. Transparency of access.

4. Traceability of key contacts

5. Identification of differences in assessment with a view to improved mentor preparation

6. Facilitates easier reviewing and strengthening of assessment strategies.

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