

Using feedback and ePortfolios to support professional competence in healthcare learners

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ABSTRACT

This article presents a learner-centric approach to feedback for healthcare students based upon current research literature and the authors' own research into student experiences of feedback using ePortfolios. Feedback is essential for all learners but for healthcare learners failure to engage with feedback may impact on patient care with potentially life-threatening consequences. Therefore, the aim of this practical approach is to support learners in the development of their professional competency and identity through deeper and broader engagement with feedback facilitated through learner-generated internal reflective and external dialogues. Such an approach requires learners to broaden their conceptual understandings of feedback, embracing its different forms and types regardless of when it is provided and by whom. Learners are also required to become active agents in the feedback process seeking out feedback opportunities in all their learning environments within and outwith academia. Fundamental to the approach is the ePortfolio providing a highly flexible, integrative environment for learners to create, record, collect and collate feedback over a period of study which can be used for reflective dialogue, appraisal of current progress and to plan for future learning activities. Practical tutor guidance is provided and the suitability of this approach for other disciplines is also discussed.

Keywords: feedback, ePortfolio, healthcare education, learner experience, professional competence and identity.

Introduction

This paper proposes a learner-centric approach to feedback using an emergent technology, the ePortfolio. It is a practical approach evolving from an extensive literature review of student experiences of feedback within the higher education sector and a small research study into ePortfolios and feedback involving radiographers, physiotherapists and nurses. The aim of the approach is to facilitate long-term deeper and broader student engagement with feedback for healthcare learners enabling the development of professional competence and identity.

For the purpose of this article, 'healthcare education' includes learners in regulated professions such as nursing, medicine and the allied health professions. In 2009-2010, there were over 50,000 British students studying medicine or subjects allied to medicine (HESA 2010; Morrison 2010). The primary goal of such learners is the acquisition of professional clinical competence to ensure patient safety (GMC 2010; HPC 2010; NMC 2010). Professional competence has been defined as "...the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values and reflection in daily practice for the benefit of the individual and community..." (Epstein and Hundert 2002, 226). Such attributes are acquired not only in academic contexts but also in busy, complex clinical and community environments. As the learner moves from novice to expert developing professional identity, high quality support and mentorship is required; feedback is a critical and integral element of this (Benner 2001). Given the particular demands on healthcare learners - studying within diverse contexts and on numerous placements, where there is a need learn to receive and benefit from feedback provided any time, anywhere from many different sources - the ePortfolio seems the ideal vehicle for an integrated approach to feedback. Thus, this paper explores:

"How can we use ePortfolios to facilitate student engagement with feedback to support the development of professional competence and identity in healthcare learners?"

BACKGROUND AND CONTEXT

This section outlines the foundations for the approach:

- Feedback and healthcare learners in higher education;
- A collective case study into ePortfolios and feedback.

Feedback and healthcare learners in higher education

Current research demonstrates that students at all levels and in all subject areas believe feedback to be vital to their studies and fundamental to their progress (Carless 2006; Johnston, Ciannon, and Olekalns 2008; Lizzio and Wilson 2008; McCune and Hounsell 2005; Orsmond, Merry, and Reiling 2005; Rowe and Wood 2008; Scott, Badge, and Cann 2009). In the healthcare professions, however, learners also consider feedback to be essential for their ability to develop professional competence and identity, as these quotations drawn from the authors' own research (Peacock, Murray, and Scott 2011) demonstrate:

If they didn't evaluate our work then we will never improve, it's better to enhance it from now than to be in the field and don't know how to do it (radiography student, online);

...some markers are extremely academic...they'll also say you know 'it shows you've got an interest in this' you know and I find that much more personable ...which I find really useful because it maybe brings out things about your own sort of professional identity that you didn't really know before (nursing student, online).

It is also apparent that feedback is highly complex, reflecting students' individual preferences and personal learning experiences. For example, national student surveys consistently indicate students continuing dissatisfaction with the amount, timing and quality of feedback (Krause et al. 2005; Johnston et al. 2008; Surridge 2008) whilst, in comparison, other studies suggest that learners frequently find that feedback is useful and indeed valuable (Bevan et al. 2008; Careless 2006; Johnston et al. 2008; Orsmond et al. 2005; Scott et al. 2009). There is also little learner consensus about what constitutes quality feedback, the ideal amount of feedback and even the balance between positive and constructive feedback comments (Bevan et al. 2008; Poulos and Mahony 2008; Weaver 2006). There is, furthermore, little homogeneity amongst learners about the preferred delivery mechanism - the manner, type and way that feedback is delivered. Consensus exists in one area only: lack of understanding of tutor feedback comments and access to the academic discourse underpinning such comments (Bailey 2009; Carless 2006; Chanock 2000) as illustrated in the following student quotation:

All these big words! You would like it in layman's terms but I suppose that wouldn't be academic. No one wants to admit they are not sure what things mean; no one wants to stand out (first year, nursing student, Bailey 2009, online).

The situation is further complicated by the apparent lack of learner engagement with feedback: learners focus primarily on the grade rather than the resource-intensive feedback comments provided by tutors (Carless 2006; Crisp 2007; Wojtas 1998). In healthcare, learner engagement with feedback is critical (HPC 2010). Unlike many other subject areas where failure to address feedback will only impact on the learner, in healthcare lack of significant learner engagement with feedback may have a direct impact on patient care, potentially having life-threatening consequences and compromising the clinical governance process (Price, Hopwood and Pearce 2000). However, feedback is particularly complex in healthcare education since it must address a range of multifaceted skills and knowledge that learners must develop for their future professional roles. Furthermore, feedback experiences for healthcare learners, often in the clinical setting, are less structured and organised than in the academic milieu (Wood 2000). In such circumstances individual preferences for the timing, delivery method, amount and quality of feedback cannot be accommodated. In the busy clinical environment workflow and service demands are prioritised and thus planned feedback sessions are extremely limited. Hence these learners must be prepared to enter into dialogue with all feedback providers (whoever, whenever and wherever) (Eraut 2006), engage pro-actively with feedback to appraise current performance and reflect on developing skills and emergent knowledge. Resultant internal reflective dialogues can identify areas for development and planning of future learning opportunities without which learner development of professional identity and competence will not be realised.

The literature review demonstrates that although healthcare learners believe that feedback is important for their studies, strong personal preferences about what constitutes quality feedback and individual preferences for delivery mechanisms may impede engagement with feedback. Furthermore, there is little understanding of how to engage with feedback provided in many different environments, which is impacting of personal and professional development.

A collective case study: ePortfolios and feedback

In 2009, we undertook a study which stemmed from awareness that, as educators, we need to support healthcare learners to engage with feedback, and to engage at a deeper level. We had found through implementing and undertaking previous research into ePortfolios (Peacock and Gordon 2007; Peacock et al. 2009) that this emerging technology, may, in some cases, offer learners the potential to create, record, collect, collate and reflect upon feedback and then plan for future learning opportunities. An ePortfolio consists of a number of different online tools which can support these processes, such as blogs, folios, forms and self-audit forms. It allows learners to create: ‘...a purposeful aggregation of digital items – ideas, evidence, reflections, feedback etc.’ (Sutherland and Powell 2007). In some cases, assessment for example, some of the artefacts may be shown to selected external audiences such as a clinical supervisor, a tutor, a peer or even a potential employer.

The authors’ latest study in 2009 explored student engagement with feedback through the ePortfolio in three disciplines: radiography (undergraduate), physiotherapy (postgraduate) and nursing (undergraduate). In each of these case studies ePortfolios had been used for summative assessments and to provide online feedback. The study was based at a small institution, Queen Margaret University (QMU) in Scotland. QMU focuses on providing relevant teaching and research which will make a practical impact on everyday life. The programmes seek to produce well-prepared, well-rounded and flexible graduates in Arts, Management and Social and Health Sciences. Most of the undergraduate programmes, especially in vocational areas, involve four years of study and typically students start such courses from 17 years of age onwards. Over the last ten years a range of technologies have been implemented which are linked to the Learning, Teaching and Assessment Strategy (QMUC 2006). In 2005, the institution introduced PebblePad as our institutional ePortfolio.

The full findings of this qualitative study are reported elsewhere (Peacock, Murray, Kelly and Scott 2011). In general, learners liked the ePortfolio because accessing feedback was quick and easy – it could be accessed anywhere, anytime and anyplace. Furthermore, the feedback could also be viewed alongside a learner’s assignment:

...you can keep it and go over it any time you want (physiotherapy student).

Much easier to access. Much easier to read! You can’t lose it (nursing student).

It’s with the work, so it’s easy to see mistakes being talked about (radiography student)

Most learners accessed the feedback and occasionally revisited but actual level and depth of engagement with feedback was rather limited which reflected their lack of understanding of what to do with feedback. Only with repeated encouragement from tutors and after they had been introduced to the ePortfolio as a tool for long-term professional and personal development did a few students return to feedback and use it to modify, amend and improve future work through internal reflective dialogue and also through external dialogue with educators. The role of the ePortfolio as a tool to self-generate feedback or to record, collect, collate, and reflect on feedback across a programme was, however, infrequently considered and used by learners (Peacock, Murray, Kelly and Scott 2011, 43). Many students, therefore, missed opportunities for long-term, regular, active creation of, and engagement with feedback through the ePortfolio. Thus, we concluded that to benefit from the affordances of the ePortfolio to support development of professional competence and

identity, learners need a deeper understanding of how the ePortfolio can be used in their learning.

AN EXPLORATION OF THE APPROACH

Drawing upon the authors' experiences as healthcare educators, the findings of our studies and emergent research into learners' experiences of and preferences for feedback, it was concluded that both learners and tutors need to:

- Broaden their conceptual understandings of feedback;
- Re-examine their role in the feedback process;
- Develop a fuller awareness of the potential of ePortfolios as a facilitative tool to support deeper and broader engagement with feedback.

These three elements underpin the authors' proposed approach to improving student engagement with feedback and enabling the development of professional competence and identity in healthcare learners. It is designed to support healthcare learners in developing, over time, a more informed sense of their skills, knowledge and achievements. It would also ensure that learners develop the skills and knowledge to become independent, self-appraising and self-critical lifelong learners.

Central to the approach is dialogue (Carless 2006; Nicol 2010). Learners expect highly personalised feedback which they want to discuss with external providers such as subject experts and clinical staff; unfortunately, this may not always be feasible leading to learner frustration. Yet healthcare learners are frequently unaware of who can provide feedback, especially in the placement setting, and how they can take responsibility and create opportunities for feedback dialogues (Bing-You, Bertsch and Thompson 1998). Such learners need guidance in helping them identify external feedback providers, such as clinical educators, placement supervisors and peers, and how best to ensure appropriate and timely feedback dialogues (Nicol 2010). For example, learners need to organise with their practice educators, feedback opportunities at agreed intervals throughout their practice placements, in order to evaluate and appraise their progress and development (Scott 2010). This echoes work into conceptual models of feedback (Jawah et al. 2004; Nicol and Milligan 2006; Nicol 2010) which present a wider perspective on feedback, with the learner at the heart of the feedback process, playing an active rather than passive role:

Just as learning does not occur through the mere transmission of written or spoken information, nor does feedback delivery on its own lead to learning improvement. For students to learn they must do something with transmitted information, analyse the message, ask questions about it, discuss it with others, connect it with prior understanding and use this to change future actions (Nicol 2010, 503).

The evolving approach is much indebted to this work.

External dialogue is only one side of the coin; learners also need to discuss and reflect upon their feedback internally, but such engagement with feedback is rare (Carless 2006). Hence learners need guidance in how to develop an internal reflective dialogue about feedback which may serve as a springboard to self-appraise current performance and identify areas for improvement. This would lead learners to organise opportunities to test their emerging knowledge and skills and then make further modifications as appropriate (Moon 1999). It would also help learners to objectify feedback and limit the impact on students' feelings (Young 2000).

Figure 1 (Appendix) provides a diagrammatic representation of the proposed approach, outlining the three key linking elements underpinned by dialogue. These are now discussed in more detail from the learner perspective, followed by guidance to tutors.

The development of a broader conceptual understanding of feedback for healthcare learners

Our studies (concurring with the work of others such as: Burke 2009; Hounsell, McCune, Hounsell and Litjens 2008; Nicol and MacFarlane-Dick 2006; Nicol 2010; Sadler 2010) have found that learners had a rather limited, one-dimensional perspective on feedback: it is perceived as a type of error-correction usually provided by an external such as a supervisor or tutor. Learners also voiced strong individual preferences for the manner, type and way that feedback was provided, often reflecting their preferred learning styles as the following quotations from our study (Peacock, Murray and Scott 2011) illustrate:

... I quite like when I get feedback that addresses ... how you looked at the introduction and the structure ...rather than just a huge blurb of you know, things that are hard to relate to and understand (nursing student, online);

...constructive feedback... sometimes it can just be completely negative, but as long as it is constructive and helpful then that's the kind of feedback I appreciate (radiography student, online);

Personally I would need a discussion with someone ... for it to play a part in my mind. Normally written feedback just infuriates me... (physiotherapy student, online).

Our approach, as advocated by Burke (2009) and Nicol and MacFarlane-Dick (2006), requires learners to widen their understanding of feedback, to embrace its multifaceted qualities, its many forms, its roles and purpose, and to engage with all types of feedback, in whatever way and whenever it is provided.

Most of our learners saw feedback as fulfilling two roles:

- (1) Giving *information* about current performance. For example, learners want to know if they have performed a task appropriately to the requisite standard in line with current procedures. Without such feedback learners understand that patient safety may be compromised;
- (2) Providing *guidance* about how to improve current performance (closing the gap between current and ideal performance). For example, learners need advice on how they can improve performance in the clinical setting especially in relation to clinical procedures.

However, there are two additional roles that feedback should fulfill which are essential in supporting learners to gain professional competency and identity:

- (3) Supporting the *development of meta-cognitive skills* such as goal-setting, problem-solving, time management, motivation and responsiveness. For example, in early Personal Development Planning sessions, learners could be asked to outline their plans for future development based on feedback received.
- (4) Encouraging *self-regulation and self-assessment* in their chosen profession, especially through developing students' awareness of quality. In this case, tutors will offer feedback which relates to professional competencies. It is expected in future that learners will use this type of feedback as a model to develop their own self-regulatory skills.

Table 1 (all tables are in the Appendix) provides further examples of each of these different feedback roles for healthcare learners.

During their studies, healthcare learners will also receive extensive feedback provided in a variety of types and formats (written, verbal, visual; formal/informal; structured/ ad-hoc; on-going/formative/summative) from many different sources as outlined in Table 2. Not all

of the feedback will meet learners' preferences for mode, format, volume and time. Yet, in their development of becoming independent lifelong learners, they will need to find a mechanism to engage with and benefit from feedback wherever, whenever and in whatever form it is provided.

If healthcare learners do not broaden their conceptual understanding of feedback they will:

- Miss opportunities for the timely receipt of, and challenging dialogues about, feedback with external providers;
- Receive feedback that fails to support the development of cognitive, psycho-motive and affective skills and knowledge;
- Have little, if any, internal reflective dialogue about feedback resulting in failure to appraise current performance and the identification of areas for progress. This will lead to learners not planning for opportunities to test their emerging professional competence and identity.

A re-examination of the role of the healthcare learner in the feedback process

Students rarely take specific action in response to feedback; their actual levels of engagement are very limited (Brown and Glover 2006; Peacock, Murray, and Scott 2011) and somewhat mechanistic, for example, skimming or reading through comments:

I probably would have read it [the feedback] so it would be in the back of my mind, but I wouldn't refer to it really closely or exactly or anything. I would probably be aware of what I had to do, but not really, it wouldn't be, like, in the forefront of my mind or anything (Higgins, Hartley and Skelton 2002, 58).

Feedback is infrequently used as a springboard for planning of future learning opportunities (Orsmond et al. 2005). Table 3 provides a snapshot of the type of student engagement with feedback across a number of studies.

Our approach requires healthcare learners to re-examine their current strategies for engaging with feedback and to become more active in the process (Nicol 2010) by seeking out feedback opportunities and engaging deeply and repeatedly with it through internal and/or external dialogues. Table 4 provides specific examples of the different ways in which learners can engage actively with feedback including creating self-feedback, recording, collecting and collating feedback, reflecting upon feedback and then using it to plan future learning events.

The ePortfolio as a facilitative tool in supporting learner engagement with feedback

Our study demonstrated that learners were, in the main, comfortable with using ePortfolios for responding to assessments and receiving feedback but had little understanding of how the tool could be used in a wider sense to support their learning from, and engagement with, feedback. Fortunately, ePortfolios have a range of facilitative tools that can support active learner engagement with feedback through the:

- *Creation of feedback*: for example, a private blog can be used for learners to create self-generated feedback about their performance with regard to regulatory processes in a clinical skills laboratory. In some cases learners may create audio feedback on skills development and upload this to the ePortfolio;
- *Recording of feedback*: ePortfolios provide tools for learners to record external or internal reflective feedback dialogues before they are forgotten, for example, a blog;
- *Collection of feedback*: the ePortfolio system provides a readily accessible tool in which all types of feedback (text, images, audio) can be collected;

- *Collation of feedback*: healthcare learners collect much feedback but to be readily found and used for reflection, the ePortfolio provides tools for meta-tagging. In this way learners can group feedback helping them to link ideas and identify themes;
- *Reflection on feedback*: the blog tool in the ePortfolio provides an ideal mechanism for both structured and unstructured reflection on the diverse feedback received by healthcare learners and a means to support their appraisal of performance to date;
- *Planning for future learning events*: learners can reflect on all types of feedback received and use as a springboard to plan future learning events in which they test their emerging knowledge and skills.

Such an approach to using ePortfolio is aligned with the original vision of the ePortfolio as a tool to encourage personal development planning (JISCinfoNet 2008). In two of our case studies (Peacock, Scott, Murray, and Kelly, 2011), a few students, with tutor encouragement, started to experiment with using the tool in this way. However, learners will need to understand that the ePortfolio can be used in a much wider manner, to deepen their engagement with feedback, rather than just as a feedback collection mechanism. Table 5 provides some examples of the different ways in which an ePortfolio can be used as a facilitative tool to support learner engagement with feedback with guidance from tutors and Figure 2 (all Figures are in the Appendix) provides a composite visual representation of our student-centric approach from the perspective of the learner.

IMPLEMENTING THE APPROACH – GUIDANCE FOR TUTORS

This section provides guidance on implementing the approach for tutors. The success of our approach will be dependent on not only learners taking responsibility for feedback but also on but tutors by:

- *Broadening their conceptual understanding of feedback*. Although a more constructivist and student-centric attitude to learning and teaching is prevalent in higher education, tutors too often retain a behaviourist approach to feedback (Jawah et al. 2004; Weaver 2006). Consequently, feedback becomes a form of one-way communication focusing predominantly on error-correction and/or reinforcement of correct behaviour as well as justification of a grade. Our approach requires tutors to move beyond this and acknowledge that: “the overall purpose of the feedback process ...is to help students develop the ability to monitor, evaluate and regulate their own learning” (Nicol 2010, 504);
- *Re-considering their role in the feedback process*. This will require tutors to appraise the type of feedback they present to students. Such an evaluation should address whether their feedback adheres to current guidelines about quality, timing and delivery and specifically addresses lack of student comprehension about feedback comments (Centre for Excellence in Learning and Teaching in Assessment for Learning 2010; Nicol 2011). Tutors may also call upon subject-specific guidelines since most educators’ experience of feedback and assessment will be driven by the expectations, perceptions and needs of their academic discipline (Allin and Fishwick 2009; Bloxham and Boyd 2007).

Tutors will need to provide more guidance to learners about feedback. Learners typically receive little or no guidance about either the roles or the complexity of feedback or how to engage with it to support the development of professional competencies and identity (Weaver 2006; Burke 2009; Bevan et al. 2008). Unfortunately learners are too often unaware of the potential use of feedback (Orsmond et al. 2005) and will use inappropriate strategies developed pre-university in their responses to it (Burke 2009).

The next section provides specific tutor guidance about implementing our approach and offers examples of how the ePortfolio can be introduced to learners. From the early stages of their studies healthcare learners should be more aware of the long-term benefits of engaging with ePortfolios and feedback, for example:

- Many professional bodies such as the Chartered Society of Physiotherapists and the Society of Radiographers now embrace ePortfolios. At the end of a period of study, graduates may be able to transfer their academic ePortfolios, including feedback, to those of their professional bodies for continuation and development;
- Previous engagement with feedback and ePortfolio equips learners for the demands of documenting Continuing Professional Development (CPD) to enable continuing registration by regulatory bodies such as the Health Professions Council (HPC);
- Sections of the ePortfolio can be made available to prospective employers as part of the recruitment process.

There are three specific stages during a healthcare module when tutors can support learners to engage with feedback through ePortfolios:

- (1) At the start of a period of study, typically a module or clinical placement;
- (2) During the period of study, perhaps through a mid-placement meeting or formative feedback on an ePortfolio after a placement block;
- (3) After the period of study.

Feedback at each of these stages would allow tutor and learner to engage in a ‘guidance and feedback loop’ advocated by Hounsell et al. (2008) who perceive feedback as a cyclical process and essential part of preparing learners for their professional career and continuing development.

1. Preliminary discussions about feedback and assessment at the beginning of a period of study

Discussions at the start of a module can form the basis of an on-going assessment and feedback dialogue between students, peers and tutors (Hounsell et al. 2008; Nicol 2010;). Such conversations may address a wide range of issues about assessment and feedback, such as individual learner preferences for feedback and coping mechanisms for ‘less than ideal’ feedback or none at all. Ultimately this dialogue should ensure that students understand that assessments and associated feedback are *for* learning, rather than *of* learning (Gibbon and Dearnley 2010). Practical workshops would help familiarise learners with the ePortfolio as well as its purpose in learning from feedback. Table 6 offers specific guidance about how to support learners in:

- Developing a broader understanding of feedback;
- Becoming more proactive in the feedback process;
- Using the ePortfolio as a facilitative tool.

Prompts to stimulate discussion are provided, as well as materials and examples from practice.

2. On-going dialogue and guidance about feedback

Learners require continual reminders about the role of feedback in learning. Students need to be encouraged to use the ePortfolio to:

- Collect, collate and review all types of feedback received during their period of studies;
- Share feedback and associated reflections with tutors and peers;
- Reflect on feedback in order to plan for future learning.

Formative assessments provide an ideal tool for continuing the tutor-student assessment/feedback dialogue.

To encourage engagement with feedback, tutors can ask students to demonstrate that they have acted upon feedback provided in earlier modules as part of a summative assessment. Feedback which has already been collated in the ePortfolio could be printed and discussed in summative assessments or attached to assessments developed in the ePortfolio system.

3. After the module

At the start of each module, students, in tutorials, could be asked to discuss feedback received on the previous semester's module/s, reflect on this with peers and plan for future action and learning (Nicol and Milligan 2006). Such plans could be shared with academic advisors or directors of study. Individual guidance could also be offered to students by module co-ordinators to ensure that written feedback on summative assessments is understood and used as a basis for reflection and planning.

SUITABILITY FOR OTHER SUBJECT AREAS

Although our approach is focused on healthcare education, it has many synergies for other disciplines, especially those where adherence to standards is essential and there is a need to develop professional behaviours. Many other professional and vocational subjects, such as law and engineering, need students to engage with feedback if they are to reach professional competence, and failure to do so may well impact on the lives of others. Such students will also receive feedback from many different external providers, in many different forms and in a variety of learning environments. Therefore, guidance will be required on how to recognise and benefit from all these feedback interactions, and tutor encouragement to use the ePortfolio as a facilitation tool for engaging with feedback is required. *All subjects* require students to *learn* from feedback, and reflection on feedback provides an ideal mechanism for learners to appraise their current performance and to reflect on how knowledge and ideas introduced through their feedback can alter their understandings of their subject.

SUGGESTIONS FOR FUTURE RESEARCH

In this paper we have proposed a learner-centric practical approach to feedback which envisages the ePortfolio as a facilitative tool to encourage a deeper and broader level of engagement with feedback in healthcare education. Further studies are needed to implement and evaluate this approach. Studies should include other subject areas and consider the potential of harnessing a wider range of media, such as social networking sites and audio feedback. More longitudinal studies would chart the development of a more complex learner understanding of feedback and its role in learning, and the potential for the ePortfolio to support this.

CONCLUSION

Learners believe in feedback and have strong preferences about the way it should be delivered, as well as the amount, the timing and the quality. Critically, students' perceptions of the quality of their learning experience are linked to their experiences of feedback (Bevan et al. 2008; Lizzio and Wilson 2008; Rowe and Wood 2008). With changes to funding in higher education, there will be increased pressure to respond, and to be seen to respond, to

the results of national student surveys. However, in a busy clinical environment, individual learner preferences cannot be accommodated. Learners need to be equipped to benefit from feedback in the wide variety of formats and forms it is provided to them – whenever, wherever and however. Ultimately, lack of healthcare learner engagement with feedback may have life-threatening consequences which are the responsibility of both tutor and learner. Our approach provides a practical way forward, supporting healthcare learners to understand and then respond to feedback using ePortfolios, but it also accepts that educators need to explore their own understandings of feedback and to re-consider their role in the feedback process which may require “a greater investment of time and effort” (Hounsell 2008, 7).

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APPENDIX

Table 1: An exploration of the different roles of feedback for healthcare learners

The different roles of feedback in student learning	Examples of different roles of feedback for healthcare learners
1. Feedback which provides <i>information</i> about current performance.	Healthcare learners need timely information about whether they have performed a task appropriately and are competent to undertake their professional roles. For example, in the clinical environment, immediate feedback from a supervisor is required to inform the student, provide reassurance on the quality of the performance and prevent the perpetuation of errors which may be detrimental to patient care.
2. Feedback which offers <i>guidance</i> about how to improve current performance (closing the gap between current and ideal performance).	Healthcare learners need constructive evaluation of performance to enable change and improvement. Through tutor feedback on reflective accounts of practice experiences, the perceptions and attitudes of learners are challenged encouraging learner internal and external dialogue.
3. Feedback which supports the <i>development of meta-cognitive skills</i> .	This involves using feedback for goal-setting, problem-solving, time-management, planning, monitoring and evaluating learning and feedback leading to autonomy and independence of thought and action. In healthcare, tutor feedback on summative assessments provides an ideal opportunity for signposting areas for improvement of such skills.
4. Feedback which encourages <i>self-regulation and self-assessment</i> .	Healthcare learners are encouraged throughout their programme of studies to reflect on their on-going development and link this to feedback received. Feedback provided by tutors offers examples of the professional competencies expected of learners and critical evaluation of practice. Ultimately to develop a professional identity learners will need to develop self-regulatory skills ensuring that they continue to improve their own professional competencies and assist others in the process.

Table 2: Examples of different types, forms and sources of feedback available to healthcare learners over a programme of studies

Different types of feedback in student learning	Examples of different types and sources of feedback for healthcare learners
Feedback on written coursework; for example, reflective writing in ePortfolio.	This may be provided by a tutor either on a one to one basis or in groups. It will generally be structured and formal.
Feedback in clinical workshops.	This may be verbal, sometimes visual, provided from tutors, clinical demonstrators and peers. Feedback and correction may be through demonstration – e.g. ‘that was quite effective, can I show you ...’
Feedback in clinical settings.	Clinical supervisors and other clinical staff will be providing almost continuous unstructured verbal feedback whilst learners are in the clinical setting.
Feedback in annual appraisal interviews.	In this situation, the tutor will discuss performance and progress; this feedback will be formal, structured, written and/or verbal. Learners will be expected to reflect upon this feedback and use it as a springboard for planning future learning opportunities.

Table 3: Examples of the impact of student engagement with feedback

Study	Impact of student engagement with feedback
Scott et al. (2009)	Nearly 50% of individuals in a study of first-year students admitted that, despite good intentions, feedback was not often re-read before commencing the next assignment.
Glover and Brown (2006) and Higgins et al. (2002)	Students “bore in mind” feedback comments in a rather random fashion.
Orsmond et al. (2005)	Biology students use “the essence” of the feedback.
Johnston et al. (2008)	Less than 50% of students used feedback to revise material and less than 25% thought it helped with future work!

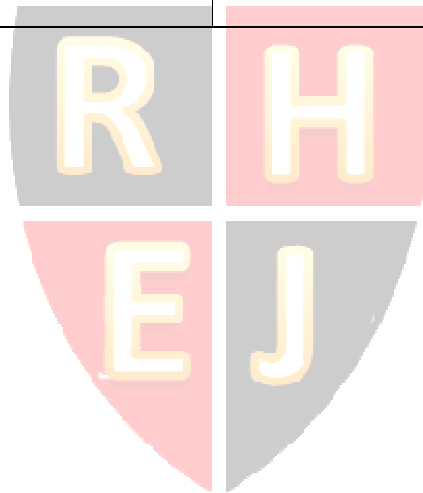


Table 4: Ways in which learners can engage with feedback

Learner role	Healthcare learner engagement with feedback
Creating self-feedback	Healthcare learners have the opportunity to practise clinical skills development in the clinical skills laboratory in the university or on clinical placements in line with current standards. After such learning experiences, students can create their own feedback about their experiences and learning and consider: “How well did I perform that intervention? Was it in accordance with national/local guidelines?”
Recording verbal feedback (audio or text)	During placement learners will receive a vast amount of verbal, ad-hoc unstructured feedback from clinical tutors and supervisors, which can be recorded and saved in either text or audio format.
Collecting feedback	Healthcare learners receive a range of verbal, visual and written feedback in all of their learning settings through continuous or staged clinical assessments for example.
Collating feedback	Too often feedback is lost in the filing cabinet. Learners need to take an active role in bringing together different sources of feedback in addition to linking and organising them. This will provide a longitudinal perspective of progress.
Reflecting upon feedback	Learners need to consider, objectify, and review feedback, considering how it fits in with their current learning and what it tells them about the development of professional competence and identity. Reflection provides an ideal mechanism for this.
Planning learning events based on feedback	Frequently, this element of the reflective cycle is forgotten – after having reflected on feedback, what next? What further training is required? What does the learner need to explore to develop their psycho-social skills and professional competence? It is intended that the planning process will support learner self-regulation.

Table 5: Examples of how the ePortfolio can be used by learners as a facilitative tool when engaging with feedback

Learner engagement	Role of the ePortfolio
<i>Creation</i>	Many of the tools within the ePortfolio provide opportunities for learners to create feedback. Private blogs are an excellent tool for learners to create self-feedback. Blogs allow learners to describe a learning activity, then, develop their own feedback about progress to date, their level of achievement and areas for development. The blog is a support vehicle which helps learners develop the ability to self-assess and critique and create self-feedback: positive and constructive – a skill which is too often overlooked in academia but essential for lifelong learning.
<i>Recording</i>	External providers will offer healthcare learners verbal feedback as and when required but it is too easy for such feedback to be forgotten in a busy clinical environment. ePortfolios especially when accessed through an iPhone app., allow quick access to a blog where external feedback dialogues can be recorded quickly by the learner. Alternatively mobile phones provide learners with audio recording tools where feedback can be quickly recorded by the learner and then uploaded to the blog at a later, more convenient, time. For example, after a day on a busy ward, learners may be provided with verbal ad-hoc feedback about progress. Students can record this on a mobile phone and then upload to the ePortfolio.
<i>Collection</i>	Healthcare learners amass an extensive range of feedback throughout their studies through external or internal dialogue. This feedback is frequently filed and then lost. The ePortfolio system provides a readily accessible tool in which all types of feedback (text, audio, images) can be collected. For example radiography students may have copies of radiographic imagery and with appropriate permissions may wish to upload to their secure ePortfolio for reflection.
<i>Collation</i>	Not only can learners upload and store feedback in the ePortfolio but also it can be organised, meta-tagged and easily categorised in the system.. This facilitates quick and easy access to feedback which helps learners to make links between feedback received from different learning environments and experiences. For example, learners can upload feedback received on placements, tag them and then check if these relate to other assets within their ePortfolio. This should help in linking theory to practice.
<i>Reflection</i>	The ePortfolio allows learners to generate internal reflective dialogues about feedback received, whenever, and wherever in their studies, helping them to make links between theory and practice. For example, the blog can provide structured guidance to support learners to reflect upon feedback, objectifying the feedback and considering with regard to protocols and standards.
<i>Planning</i>	Once learners have reflected on feedback they need to plan for future learning opportunities to test emerging skills and knowledge. The action plan tool in the ePortfolio asks student to describe future learning opportunities, the rationale for these, resources required, and prompts reflection. Healthcare learners can use this to help organise experiences.

Table 6: Tutor guidance for preliminary discussions about feedback, assessment and ePortfolio

Purpose	Focus of discussions	Materials	Example from practice
To support learners in healthcare education to develop a broader understanding of feedback and its complexity.	<p>What is feedback?</p> <p>What is the purpose of feedback?</p> <p>What are the different types of feedback?</p> <p>Who are the different providers of feedback?</p> <p>How does feedback convey ideas of quality work?</p>	<p>Tutors use Table 1 as a basis to demonstrate different roles of feedback provided during a module.</p> <p>Tutors use Table 2 as a basis to demonstrate different types of feedback which learners may encounter during a module.</p> <p>Learners discuss feedback provided for marked exemplars and discuss:</p> <ul style="list-style-type: none"> • Types of feedback; • The language of feedback; • Learner preferences for feedback. 	In radiography, learners are prepared for their first clinical placement through an exploration of the assessment documentation, the requirement for feedback (from the learner and the practice educator), the demands of the service and the needs of the patient.
To support learners to develop awareness of themselves as active agents in the feedback process.	<p>What are learners expected to do with feedback provided externally?</p> <p>How can learners generate feedback?</p>	Tutors use Table 4 as the basis for discussions about learner role in the feedback process.	Students who receive a great deal of feedback from individuals in the clinical environment need to organise and integrate it with other material in the ePortfolio as part of a holistic learning and feedback process.

<p>To support learners to develop a vision of the ePortfolio as tool for learning from feedback</p>	<p>How can an ePortfolio be used to support learning from feedback?</p>	<p>Tutor demonstrates using the ePortfolio:</p> <ul style="list-style-type: none"> • To store the wide range of feedback that students collect within the university and placement settings; • As a reflective tool for the development of an inner dialogue about feedback. Students can use tools such as the blog for recording of events, feedback received and then to develop an internal discussion about the event for current and future learning. 	<p>Students at level 1 can practice using the technology to record feedback and professional development by submitting a reflective ePortfolio at the end of a short, formative clinical placement. This process enables the student to become familiar with the process of reflective writing and to engage in a feedback conversation with the tutor – as opposed to just receiving information.</p>
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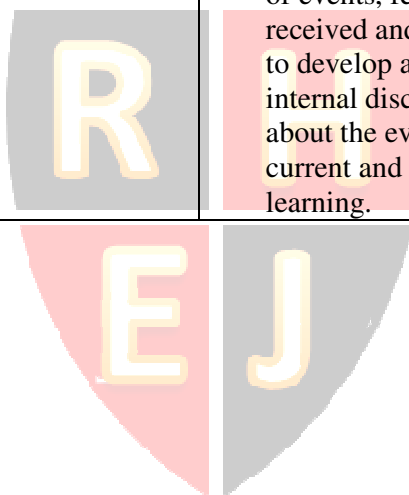


Figure 1: Diagrammatic representation of the conceptual approach to feedback using ePortfolio

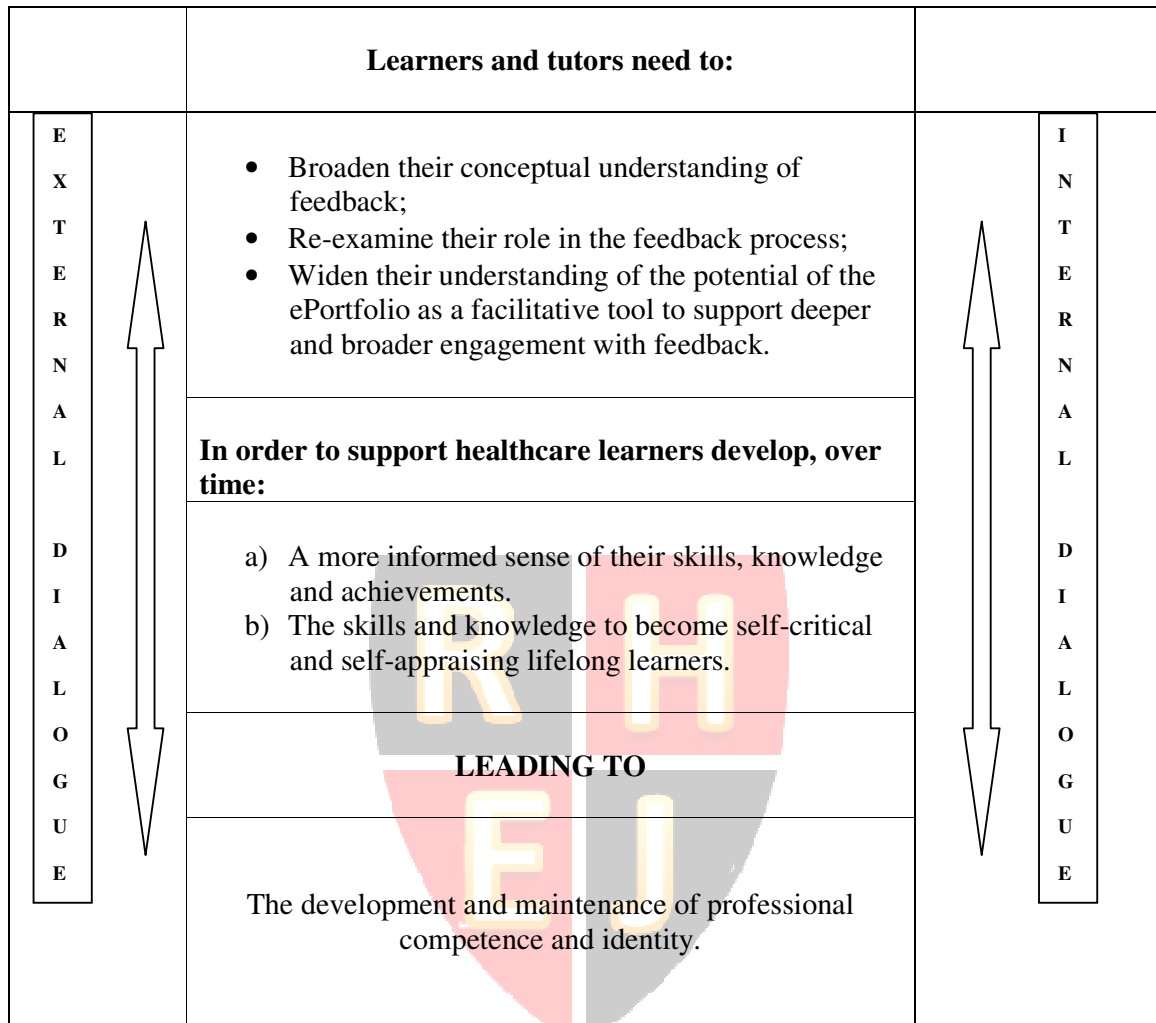
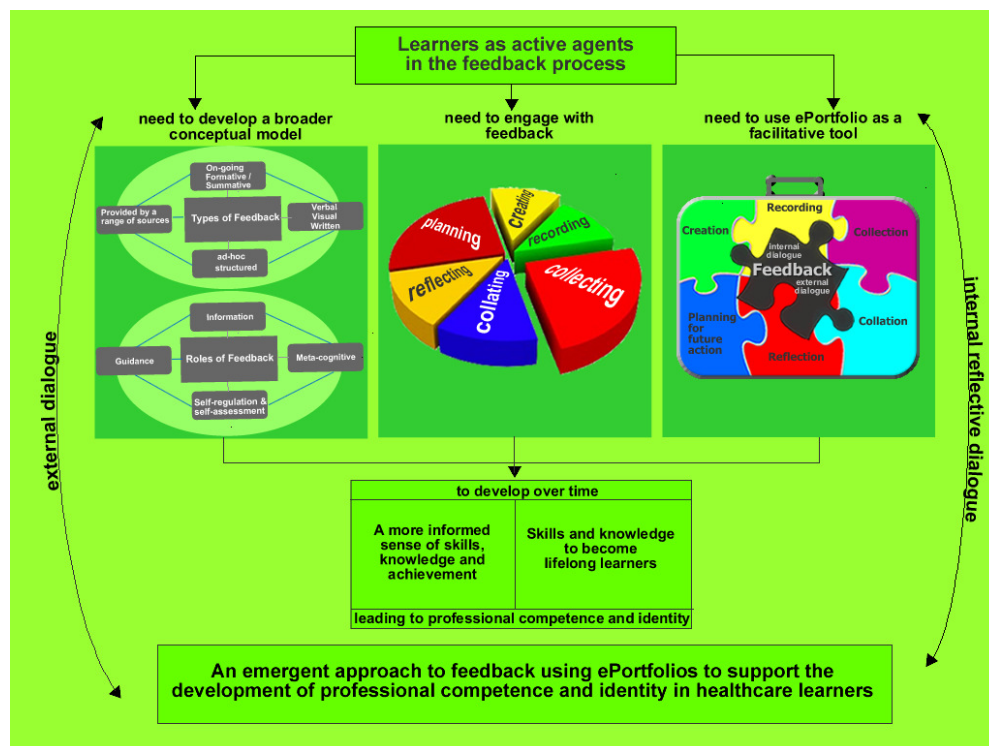


Figure 2: Diagrammatic representation of the emergent approach to feedback using ePortfolios



AUTHOR BIOGRAPHIES

Dr Sue Murray received her PhD in Information Management from Queen Margaret University (QMU), Edinburgh, in 2007. For the past four years she has been working with the technology enhanced learning team based in the Centre for Academic Practice (CAP) at QMU, supporting the implementation of a range of learning technologies, including ePortfolios and online synchronous learning environments (Wimba and Adobe Connect). Recent research interests have focused on student and tutor experiences of learning technologies. With her co-researchers, Sue has presented at international conferences and published in peer-reviewed journals in relation to learner experiences of ePortfolios

Alison Scott is a Lecturer in Radiography at Queen Margaret University with primary responsibilities for academic modules in both undergraduate and pre-registration Masters programmes in Diagnostic Radiography. Previously responsible for clinical education, she championed the introduction and implementation of ePortfolio for undergraduate radiography students in partnership with the team from the Centre for Academic Practice and is an active supporter of and contributor to the Virtual Learning Environment. Having completed an MSc in Professional and Higher Education, her main interests are curriculum design and eLearning. Before joining the team at Queen Margaret University, she was Associate Directorate Manager for the Radiology Department of the Royal Hospital for Sick Children, Edinburgh.

Susi Peacock is a senior lecturer in e-learning at Queen Margaret University where she leads the implementation of technology enhanced learning. With her team, she is responsible for e-

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Further information available at:

<https://eportfolio.qmu.ac.uk/viewasset.aspx?oid=78945&type=webfolio>

Dr Kate Morss is an Educational Consultant and former Director of the Centre for Academic Practice at Queen Margaret University, Edinburgh. Her research interests and publications are in the area of professional practice and development, in particular curriculum design, assessment, flexible learning and reflective practice.

