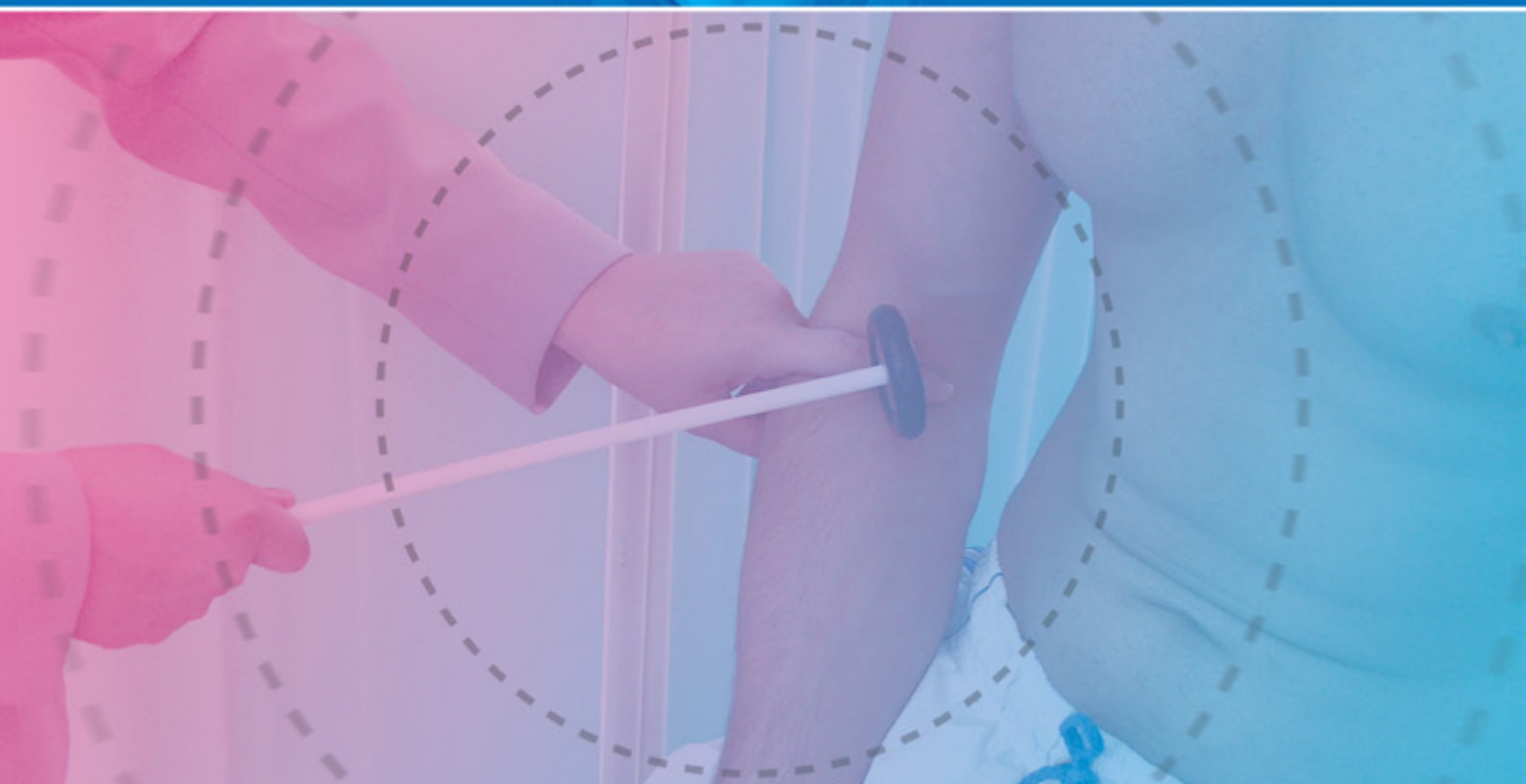




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A Peer Reviewed International Journal for the Advancement of Clinical Skills
- *'docendo ac discendo' - 'by teaching and learning'*



In this issue:

With proceedings from
The 8th International ePortfolio Conference



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Building a Learning Europe

Clinical Training Associates & Pelvic Examinations
WHO 'Five Moments for Hand Hygiene'
Holistic approach to resuscitation
Cranial nerve examination

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Congratulations to Mr Ronak Ved of Cardiff Medical School (UK) on successfully winning The IJOCs Award 2010 - presented for creativity and excellence in the field of Clinical Skills.

The International Journal of Clinical Skills looks forward to contributing positively towards the training of all members of the healthcare profession.

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Foreword

We want raw ePortfolio data, and we want the data now

Patients trust that healthcare professionals will possess the clinical skills to provide safe and effective treatment. Serious failures of medical care, through the actions of individuals and the inaction of organisations, have shaken that trust and led to a re-examination of the process of registration. In many countries and disciplines, continued registration now depends on the documentation of continuing professional development. Some jurisdictions, such as the UK, have gone further and are planning more comprehensive evaluation of clinical performance for revalidation. In all cases, assessment is based on some form of ePortfolio.

"An e-portfolio is a purposeful aggregation of digital items – ideas, evidence, reflections, feedback etc, which 'presents' a selected audience with evidence of a person's learning and/or ability."
Sutherland and Powell (2007)

Presenters in the healthcare ePortfolio track at the 8th International ePortfolio Conference, London (July 2010) described a wide range of ePortfolios being used or being developed for allied health, dental surgeons, surgeons, physicians, nurses, medical education, foundation medical graduates. ePortfolios are used by students to evidence acquisition of clinical skills for initial registration, by new graduates to collect evidence of competence for credentialing and by trained staff for evidence of consistent expert performance. As Stuart Cable from the Royal College of Nursing (UK) explained:

"[the ePortfolio] enables nurses to demonstrate their competence in different areas of nursing practice. They are able to capture 'just-in-time' reflections on their practice or a learning experience and then re-present this evidence for different purposes, for example, personal development planning, competence demonstration and educational accreditation of prior learning." (Stuart Cable, Proceedings of the ePortfolio Conference, Maastricht, 2007)

The need for repurposing the same set of collected data across time was confirmed by many of the International ePortfolio Conference presenters: as their careers develop, healthcare professionals will be required to transition across several ePortfolio systems, from those used during initial training, continuing professional development, quality assurance procedures and, at regular intervals, to support reaccreditation processes.

To support evidence of informed and reflective practice, healthcare professionals collect evidence from a variety of sources and data systems, such as patient personal health records, laboratory test analysis, clinical diaries, feedback from peers and patients. Unfortunately, all these different pieces of information are usually stored in independent information silos, making the work of ePortfolio construction and assessment more difficult, notwithstanding that silos make data errors more likely to occur and less likely to be corrected. As most individual ePortfolios also create their own data silos, it reduces the ability to share relevant and critical information across a profession to advance professional practice.

While the initial idea of repurposing ePortfolio data rests on the editing work of an individual compiling a new document, there is an alternative and more radical way of exploiting ePortfolio data: data freedom, i.e. allowing a wide range of online services to exploit raw ePortfolio data.

Imagine a world in which all data created by a healthcare professional when interacting with patients, teachers, colleagues and organisations is securely stored in a Personal Data Store (PDS), creating a 'life log'. Imagine that patients in the healthcare ecosystem have their own personal data stores and can share

the contents, under their control, with the people and services they trust. Imagine a world where everyone would be able to choose any health ePortfolio services while being fully interoperable with those used by various institutions with which healthcare professionals interact.

Imagine a world where the performance of students at several medical schools could be confidentially mined to identify best practice for teaching clinical skills. Imagine a service collecting data from the personal data stores of all the staff of a hospital to conduct audit procedures. Imagine another service identifying the need for training and linking it to workshops on particular topics at a conference or a review in a journal. Imagine a service mining anonymous healthcare data collected in personal data stores by a patient's support group. What Amazon® and Google® can do with their global data stores to identify patterns and trends and target advertising, we can do, with personal data stores for the benefit of healthcare, professional education, patient safety and society in general.

Such a world is possible. It was presented by EIfEL at the launch of the Internet of Subjects (www.iosf.org) during the 8th International ePortfolio Conference. The Internet of Subjects supports the programme that Sir Tim Berners-Lee, the inventor of the Internet, called for: "we want the data raw, and we want the data now!" To achieve that goal, which is to facilitate reuse, repurposing and exchange of data, we need to achieve the separation of data from the applications and services producing and exploiting it; applications and online services must remain the servants, not the masters, of our personal data.

In the near future institutions will not have to select the ePortfolio platform for their students or professionals; it will be an individual choice. On the other hand, educational institutions, professional communities and public healthcare authorities will have the opportunity to develop a number of innovative services, based on the exploitation of the raw data contained in personal data stores. For example, with an Internet of Subjects, data collected by students and trainees for assessment of progress or by trained staff for revalidation could be used, with permission, for other useful purposes such as quality assurance, needs analysis and career planning.

By providing access to raw data in personal data stores (anonymised and under the full control of individuals) to the services of their choice, healthcare professionals and communities would have the foundations to support the development of lively learning communities, for the benefits of their members, patients and society at large. Data collected whilst compiling an ePortfolio is too rich to be limited to a unique usage. We want raw ePortfolio data, we want it now, to contribute amongst other things, to the improvement of the continuing education of healthcare professionals.



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‘Physician, know thyself’: a role for self-assessment in ePortfolios?

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Abstract

Self-assessment is being used in an ever-widening number of contexts across the health professions, despite the fact there is little evidence of its effectiveness. With the increasing use of ePortfolios, assessment data (self and external) is far more readily analysed than in previous paper format. This paper examines a year of Scottish (Foundation) trainee doctors' assessment data to determine if self-assessment patterns are replicated when delivered and recorded by a mandatory ePortfolio.

A total of 14,878 multi-source feedback (MSF) submissions were analysed. There were moderate parallels between the data and the patterns found in the wider literature. Discussion focuses on the implications of this and the wider potential for ePortfolios to serve as an analysis tool.

Introduction

Self-assessment is increasingly advocated across the health professions for a variety of purposes, including formative and summative assessment, identification of learning needs and quality assurance for education and training. Self-assessment processes continue to be implemented as core activities for maintaining professionalism and supporting life-long learning by numerous national regulatory bodies in Medicine and Nursing [1], and these are often facilitated by electronic portfolios. Despite the widespread and growing use, the effectiveness of self-assessment has not been well tested beyond the theoretical realm by using the real life situations and data that ePortfolios record.

A systematic review on self-assessment concluded in 2007 that there was no firm evidence that it could be used to identify learners' needs, influence their choice of learning activity, or change clinical practice or patient outcomes [2, 3]. While various interventions were seen to improve self-assessment, the evidence strongly suggested that the least able at a particular task were also the least able to accurately self-assess, and tended to significantly over-estimate their own abilities. Patterns of self-assessment scoring tended to fall into quartiles, and those with the highest and lowest abilities were least able to accurately judge their own abilities when compared to the middle 50% of the population [4]. Evidence indicated that clinical skills were more accurately self-assessed than non-clinical skills.

One complete year of assessment data from trainee doctors was examined to determine whether the pattern of self-assessment of clinical and non-clinical skills replicates the existing evidence when delivered and recorded by a mandatory ePortfolio.

NES ePortfolio

The NES (NHS Education for Scotland) ePortfolio [5] is a generic platform that encompasses over thirty different individual ePortfolios, supporting tens of thousands of healthcare workers in Scotland (Dentistry, Pharmacy and Nursing) and the United Kingdom (Medicine). NES ePortfolio grew from a

small (n = 400) pilot in 2005/2006 that was designed to deliver assessments (summative and formative) for doctors in their first year of postgraduate training. This pilot coincided with the implementation of the UK Foundation Programme, a new educational programme for doctors in training that required the regular submission of self and non-self structured assessments.

Data

The ePortfolio data are held in secure structured tables that were designed to produce various regular reports for professional groupings, deaneries and the regulatory bodies. It is designed to answer frequent one-off queries of the data and it was therefore straightforward to retrieve the information held within the system for all Scottish trainee doctors in both years of the 2007/2008 Foundation Programme.

The data did, however, contain inconsistencies that had to be identified and, where possible and appropriate, adjusted. These instances included submission periods without rigid definition, form errors, multiple submissions of the same form and raters who clearly inadvertently reversed the Likert scales (verified via comments fields).

Foundation programme assessments

The UK Foundation Programme [6] is based upon *Good Medical Practice* which was implemented in November 2006 by the UK General Medical Council (GMC) and became the national guidance for all doctors registered with the GMC. Underpinning the principles of the document is the notion of personal accountability where the practicing doctor “*must always be prepared to justify (their) decisions and actions*” and “*recognise and work with the limits of (their) competence*” – both concepts would be supported with effective self-assessment.

Foundation Year One is the transitional year where medical undergraduates enter the National Health Service (NHS), meet specific requirements set out by the General Medical Council, and if successful, obtain their full GMC registration (from the beginning of the year their registration is only provisional). Foundation Year Two emphasizes the care of the acutely ill, but also continues to build upon generic clinical skills from Year One, as well as softer skills such as time management, communication and working in teams. In all, there are 65 specialties (e.g. paediatrics, haematology, infectious diseases) each providing the opportunity to work towards recognised levels of demonstrable competence.

Central to Foundation training and documentation are regular assessments based in the workplace. The assessments are core to providing public accountability for GMC registration, as well as for the personal development of the trainee. Assessments are intended to determine trainees’ progress throughout both years and trainees are expected to perform below end of year competence, until the conclusion of the year.

There were three main types of assessment for Foundation in 2007/2008:

1. **‘Significant Event Analysis’** (‘Case-Based Discussion’ [CBD] outside of Scotland) reviews cases in a structured

format, where trainees discuss clinical reasoning and decision making in a supportive environment.

2. **‘Workplace Based Assessment’** (‘Direct Observation of Procedural Skills’ [DOPS] and ‘Mini Clinical Evaluation Exercise’ [Mini-CEX] outside of Scotland) where immediate feedback is given to the trainee on clinical encounters.
3. **‘Multi-Source Feedback’** (‘Team Assessment of Behaviour’ [TAB] or ‘Mini Peer Assessment Tool’ [mini-PAT] outside of Scotland) where trainees’ assessors include supervisors, as well as a variety of other assessors who may have clinical or non-clinical roles. Results are compiled, anonymised and returned to trainees for discussion with their supervisor. All multi-source feedback tools require submission of self-assessment ratings within the training.

These assessments (top three rows of Table 1) form part of the wider minimum requirements (bottom three rows) for clinical and non-clinical activity to evidence satisfactory completion of both the first and second Foundation years in 2007/2008. In both years, trainees rotate through a series of placements (‘posts’) most typically three posts, each of four months duration. The posts are structured to provide experience of different specialties and workplace locations.

Table 1: Summary of evidence required for satisfactory completion of Foundation Years 1 & 2

Assessment or record type	Content & purpose	Foundation Year 1 minimum requirement	Foundation Year 2 minimum requirement
Significant Event Analysis	Type of structured record in the ‘Educational Log’ - trainee-selected incident used to promote reflection and evidence of implementation of learning	1 shared & reviewed by Educational Supervisor during post 2	1 shared & reviewed by Educational Supervisor during posts 1 and 3
Workplace Assessments	Defined clinical assessments (e.g. initiate intravenous infusion, advanced life support skills)	15 assessments	6 assessments
Multi-Source Feedback	Structured assessment of 22 elements of professional & clinical skills by trainee-selected peers and self	1 self and 4 peer assessments during post 1 and 3	1 self and 4 peer assessments during post 2
Educational Log	Self-directed semi-structured record of learning events (e.g. lectures attended, procedures conducted)	Evidence of use throughout year	Evidence of use throughout year
Personal Development Plan (PDP)	Self-directed semi-structured record of plans for personal development and actions taken	Evidence of use throughout year	Evidence of use throughout year
Supervisors Report & Certificate of Performance	Formal structured record that appropriate level of competence was achieved during post	1 each per post	1 each per post

All assessments in Scottish Foundation training years (and elsewhere) are conducted through the NES ePortfolio. As it is based upon the generic UK Foundation Learning Portfolio, it also contains the Personal Development Plan (PDP) and educational log (allowing semi-structured reflection across a number of categories), the educational agreement, statements of health and probity, records of meetings of supervision, career planning and the Supervisor's Report.

Multi-Source Feedback

Self-assessment MSFs are required in post 1 and 3 (first year) and post 5 (second year) of Foundation training, though trainees can submit additional ones at any time. Non-self MSFs are also gathered in posts 1, 3 and 5. As the first and third posts mark the beginning and end to the first structured training year, these periods were chosen to examine the potential changes in scoring.

Each MSF recorded the rater's score for 22 areas of the trainee's professional competence and clinical skill category and one global rating. Raters have the option to indicate "not applicable" if they felt they did not have the opportunity to observe the particular skill(s). Each category could be scored between 1 (highly unsatisfactory) and 7 (highly satisfactory).

Methods

Trainees were assessed on both clinical and non-clinical skills. These skills were identical for self-assessments, as well as for non-self assessments (which could be conducted by a variety of healthcare professionals, including educational and clinical supervisors, nurses and so forth). Trainees ($n = 1604$) were required to submit a minimum of four non-self and one self MSF during two first year posts and one second year post. This requirement was met by 91% (1st year) and 90% (2nd year) for self MSFs and 85% (1st year) and 82% (2nd year) non-self.

As clinical scores are reported to be more accurately assessed, data on each of the six clinical skills were extracted and the distribution of scores examined. They were found to be positively skewed and therefore to sensitively identify quartiles of high and low self-assessors, the mean of all six clinical scores was calculated. This was done by grouping individual trainee's self MSFs submitted during each post. These mean clinical scores were more evenly distributed and therefore allowed assignment of trainees into quartile groups defined as low (bottom 25%), mid (central 50%) and high (top 25%) self-assessors. These assigned self-assessor categories form the basis of the rest of this paper, comparing categorisation in the early versus late post, and also looking at non-self assessments, non-clinical assessments and qualitative analysis of comments.

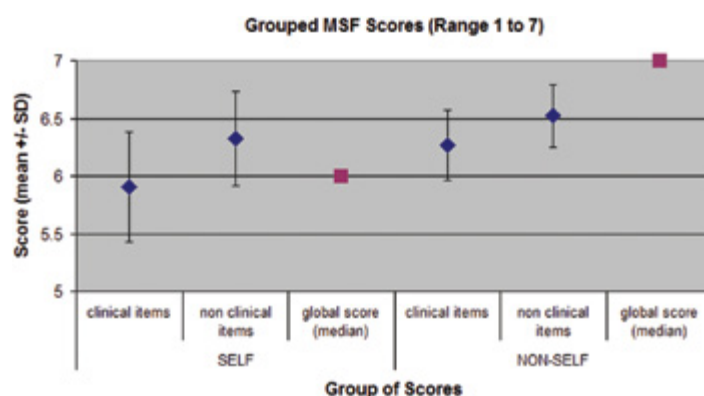
Results

A total of 14,878 MSF submissions were entered in the 2007/2008 training year, of which 3,172 were self assessments and 11,706 assessments were scored by non-self assessors (clinical or non-clinical). Both self and non-self (clinical and non-clinical) assessment scores were very high with medians of 6 or 7 in all competencies.

A slightly higher proportion of first year trainees completed both self and non-self MSFs in 2007/2008, though a sizeable minority did not; in subsequent years requirements came to be met by nearly 100%.

The range of mean scores in each type of MSF (self versus non-self, clinical versus non-clinical) are shown in Figure 1. The global self rating had a median of 6 and a mean of 6.12, whilst non-self had a median of 7 and mean of 6.51.

Figure 1: Scores in each type of MSF (self versus non-self, clinical versus non-clinical)



The mean clinical score below which low self-assessors fell, increased from 5.17 in post 1, to 5.83 in post 3 and 6.00 in post 5 which may depict the recalibration effect described in the literature.

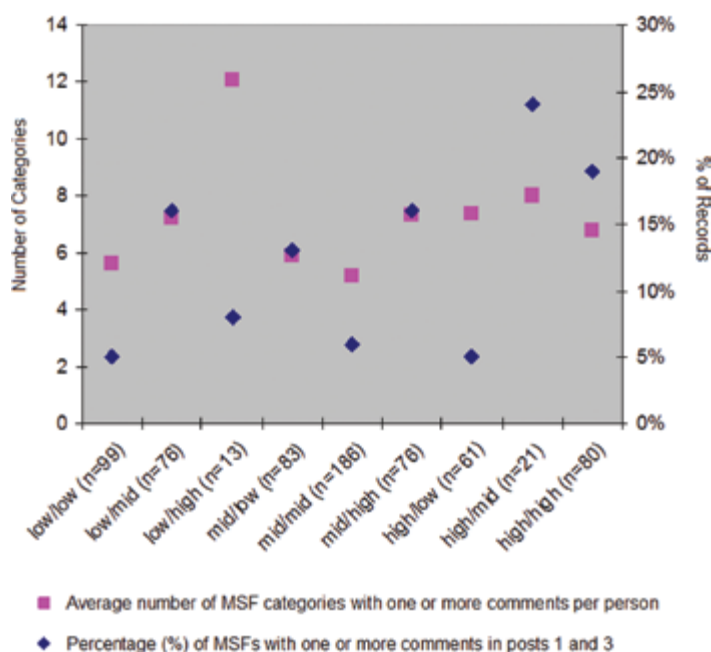
Self-assessment status change between posts 1 and 3

To examine how self-assessment changed within a training year, the scores from posts 1 and 3 (first and last post of the first year of Foundation training) were compared. 775 trainees had at least one self-assessment submission in these posts, totalling 1818 self-assessment records for the training year (a further 69 self-assessments were recorded in one post, but not the other).

A majority of trainees remained in the same category between post 1 and 3 ('low/low' $n = 99$, 'mid/mid' $n = 186$, 'high/high' $n = 80$). 76 trainees moved from low to mid and 13 from low to high. From the mid category, 83 trainees fell to low in post 3 whilst a similar number ($n = 76$) rose to high. 61 trainees dropped from high to mid with a much smaller number ($n = 21$) falling to low. The number of trainees in each movement category therefore broke down quite predictably, with the single greatest number remaining in mid/mid between posts and the smallest numbers migrating between high and low (or vice versa).

In order to gain a better understanding of the evolution of self-assessment between the beginning and end of their first training year, a group of trainees was identified who had at least one comment of self MSFs in both posts 1 and 3 – from here referred to as the "subset". There was no requirement to comment on MSF forms and a minority of trainees did so at least once in both posts (Figure 2).

Figure 2: Use of comments amongst self-assessors by category



The selection of such a group is likely to involve some unavoidable sampling bias as, by definition, it excludes trainees who were less inclined to add their reflections on their own performance consistently at the start and end of the year, and who therefore may have spent less time considering their self-assessment. However, it was done with the aim of fully exploring the practice of self assessment using all available data.

As shown in Figure 2, there is no obvious pattern among the number of comments submitted in relation to self-assessment category in this dataset

Analysis of comments in the subset

All comments for these trainees (i.e. who submitted self-assessment comments for posts one and three) were subjected to a detailed thematic analysis. Text was extracted into a spreadsheet and reviewed in detail, identifying all coherent issues expressed. Seventeen distinct themes were apparent and a matrix was constructed to map the nine categories of self-scoring against these themes.

Perceptions of improvement

Nearly all groups, but particularly those that began and ended their training year in the mid groups (mid/mid) commented on their own improvement, with only the high/high group not commenting on any self-improvement. *"I feel that my practical skills and clinical judgement have greatly improved over the past year"* was a typical comment from a mid/mid trainee.

Many commented that they felt they still needed to improve their skills. *"I'm still far from happy with my ability to formulate*

management plans independently, but I do feel this skill is developing with continuing experience", noted a low/low trainee. Again these comments were clustered within those who started in the low or mid groups, with only one comment from a high trainee who marked their self-rating as mid in the third post.

There were a number of comments about the ongoing need to "learn", rather than the more general "improve", though these shared characteristics with those above. Trainees citing their need to learn appeared more often in the low or medium groups initially, with the only high scoring post one trainee self-rating in the low category in post three. Interestingly, the majority of these comments fell in the clinical skills categories, in line with the literature that self-assessment of these skills was more accurate.

Self doubt

Comments in which the 'subset' trainees registered doubt in their own abilities were found across the nine self-assessment categories, but were most concentrated in those who rated themselves the lowest in both posts (low/low). *"I still sometimes struggle to explain things to patients particularly if I'm not sure of things myself"*, is a typical comment in that the trainee expresses self-doubt, but goes on to say *"I do, however, ask if patients/parents have any questions. If I can't answer or explain something satisfactorily then I involve a senior, who can"*.

There were also many comments that went beyond doubt expressing genuine fears about their work. *"I do sometimes panic in the acute setting"* relates a typical comment, though these stronger comments are always qualified with reassurance that help is available when required.

Numerous trainees commented they wanted further experience to feel more confident. Again, these self-comments came overwhelmingly in the clinical skills categories, with the only comment in the non-clinical skills being with a non-native English speaker wanting more language experience for patient encounters.

Amongst the low/low group in particular, there was doubt and concern about being *"not quick enough"* or *"too slow"* in terms of performance, with comments often linked to reported lack of confidence and/or knowledge. Amongst those who rated themselves in the high group initially there was a single comment relating how quickly a trainee thought they were able to carry out their duties; however, by the third post this trainee scored themselves as low, reported that they now *"try to make time for my patients"* and spoke of how much they had learned, and still had to learn.

Awareness of self

Although the comments registered on the ePortfolio were usually brief (mostly less than thirty words) there was still sufficient detail to identify where trainees expressed self-ratings with awareness of the skill levels of their peers. These comments appeared in the low/low, low/mid, mid/low and high/low categories. *"I believe my knowledge is at a similar level to that of my colleagues, but I still feel this is one of my main areas to work on"*, commented one low/low trainee, a sentiment that was

echoed in all four categories. Similarly representative, is the mid/low comment that *"I feel that it is essential that I know my own limitations"* in that these trainees' comments state or allude to awareness of self in relation to others.

It is notable that the only high (first post) self-raters recalibrated themselves downwards, suggesting they were able to do so in with insight of where their abilities fit in relation to their peers. These trainees most often commented on the clinical skills areas as well, for example, *"my Foundation Year 1 colleagues have commented on the neatness and conciseness of my clinical note-taking"* again suggesting these skills are more objectively self-assessed. They also were very specific in their comments. Whilst most comments spoke generally and sometimes even repeated the subject area (such as management of acute conditions) verbatim, these self-observations detailed skills such as *"intravenous fluid administration"* rather than just say *"I improved my acute management skills"*.

Relationship to others

There were a large number of comments on the theme of seeking help. These were found across the categories, with slightly more in two improving groups (low/mid, mid/high). Again, there is no strong link, but it is a reasonable presumption that assistance and feedback during requests for help better enable trainees to assess their own abilities. *"I am confident that I know when to call for help and feel that I am gaining experience in this area by observing my senior colleagues"* observed one first post trainee commenting on their acute assessment skills, who in the third post demonstrated more confidence: *"through experience I no longer need to ask for help with everything, but can still recognise when I need input from my seniors"*.

Another frequently commented theme was appreciation of the wider clinical team, though these comments were more pronounced in trainees whose self-assessments dropped (or remained low/low) between posts one and three. Remarks such as *"I greatly appreciate the guidance seniors in the team give"*, *"not only doctors and nurses but occupational therapists, physiotherapists and dieticians as well - they bring a whole new dimension to patient care"* and *"every member of the team has a crucial role to play and I aim to work closely alongside all of them to best treat patients"* illustrate the positive response trainees had for the other health professionals. Again, there is a reasonable link between the less confident, and perhaps more accurately self-assessing trainee, and this theme.

Expressions of confidence

Every subset category had trainees that reported unqualified positive assessments of their own ability. Very common were comments that reiterated the subject area they were reporting on, for example, *"the doctor is polite to patients"* a typical response was *"I always do my best to be polite and courteous to patients - there is never a situation where one shouldn't be, no matter how angry or upset they make you"*. It is not difficult to imagine new trainees using an unfamiliar electronic system wanting to portray their reported ability in a good light, but it is striking that although all categories have trainees who self-comment in this way, the number of trainees and comments of this nature disproportionately fell in the high/medium and high/high categories.

One theme, the use of absolute descriptors when trainees assess their own skills, is striking in the way it is distributed. The use, in particular, of terms such as *"always"* when describing a positive behaviour falls overwhelmingly in the high/high and high/medium categories. This supports the notion that those who rate themselves the highest may be doing so in an unqualified manner. Comments from high/high and low/low (or others that fell between posts) are nearly universally distinguishable, with the latter nearly always avoiding absolute descriptors and qualifying positive evaluations of one's own behaviour.

The high/high (as well as mid/mid) categories also solely exhibited one theme of noting improvement within post one. While all categories had trainees reporting on improvements between the posts, those already noting they were getting better in their first medical rotation, fell only within the categories above.

Discussion

Despite the narrowly demarcated scores in MSFs generally, there is tentative evidence that self-assessment of clinical skills in these medical trainees' ePortfolios replicated patterns in other studies. Future research will extend this work, concentrating on comparing self-assessment scores with the scores and activities in other parts of the ePortfolio: workplace based assessment, educational log, personal development plan, supervisors' report and certificate of completion.

The medium of ePortfolio has enormous potential to improve the accuracy and value of self-assessment as it could be used to instantly triangulate results with other assessments, improve the awareness of standards to the learner and provide timely and rich feedback.

Beyond self-assessment, the ability of electronic portfolios to synthesise or compare diverse types of information (summative assessments, reflections, professional planning, records of achievement and learning) remains one of their greatest strengths [7 – 11]

Mentoring is widely seen to assist self-assessment and ePortfolios are ideally situated to support this through the creation of such a system role. Additionally, with the increasing evidence that reflection can improve learning in clinical practice, ePortfolios are in a strong position to support structured or unstructured reflection. As always, it is critical that the level of structure within the portfolio meets the nature and needs of the users, rather than stifling through too much structure or not supporting them through too little [12].

NHS Education for Scotland now has extensive experience in achieving this critical balance of structure versus stifling after launching and maintaining over thirty ePortfolio versions. This has highlighted a number of key areas for the implementation of ePortfolios:

- **Planning:** detailed and precise specifications, realistic timings, embedding training, identifying and accommodating dependencies, sourcing adequate resource and preparation for the unexpected
- **Development:** creation of content, implementation of all process flows, determining access rights for all system

roles, accommodating inevitable modifications during development, ensuring linkage and data exchange with any other core e-systems

- **Communication:** ensuring the purposes are made clear to all user groups, utilising training as a medium, responding to feedback, ensuring expectations and any problems are addressed
- **Pilots:** identifying a representative pilot group, ensuring purpose and scope are clearly identified, setting a realistic time frame for pilot, managing feedback and using it to inform the roll-out
- **Roll-out:** identifying differences from the pilot, assuring timings are realistic, supporting with comprehensive and targeted training, managing feedback
- **Champions:** local champions can have an enormous positive influence for user buy-in, leadership, communication and feeding into the decision making process

The evidence for the increasing reliance on self-assessment for a variety of formative and summative processes remains meagre; however, an electronic portfolio provides an ideal medium to collect and collate this evidence to inform future best practice. There is the natural expectation that once registered, professionals are, and will remain, competent. ePortfolios are similarly ideally placed to serve the analysis of longitudinal assessment data from postgraduate training through revalidation and recertification.

References

1. General Medical Council. (2006). Good Medical Practice. London, General Medical Council (GMC).
2. Colthart I, Bagnall G, Evans A, Allbutt H, Haig A, Illing J, McKinstry B. (2008) The effectiveness of self-assessment on the identification of learner needs, learner activity, and impact on clinical practice. *Medical Teacher*. **30**(2):124-145.
3. Davis D A, Mazmanian P E, Fordis M, Van Harrison R, Thorpe K E, Perrier L. (2006). Accuracy of physician self-assessment compared with observed measures of competence: A systematic review. *Journal of the American Medical Association*. **296**(9):1094-1102.
4. Kruger J, Dunning D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self assessments. *Journal of Personality and Social Psychology*. **77**(6):1121-1134.
5. NHS ePortfolio (Homepage on the Internet). Edinburgh, NHS Education for Scotland. [Accessed August 2010]. Available at <https://www.nhseportfolios.org>
6. UKFPO. The Foundation Programme. Cardiff, UK Foundation Programme Office (UKFPO). [Accessed August 2010]. Available at <http://www.foundationprogramme.nhs.uk/pages/home>
7. Duque G, Finkelstein A, Roberts A, Tabatabai D, Gold S L, Winer L R, Members of the Division of Geriatric Medicine, McGill University. (2006). Learning while evaluating: The use of an electronic evaluation portfolio in a geriatric medicine clerkship. *BMC Medical Education*. **6**(4):1-7.
8. Driessen E W, Muijtjens A M, van Tartwijk J, van der Vleuten C P. (2007). Web- or paper-based portfolios: is there a difference? *Medical Education*. **41**(11):1067-1073.
9. Kjaer N K, Maagaard R, Wied S. (2006). Using an online portfolio in postgraduate training. *Medical Teacher*. **28**(8):708-712.
10. Tochel C, Haig A, Hesketh A, Cadzow A, Beggs K, Colthart I, Peacock H. (2009). The effectiveness of portfolios for post-graduate assessment and education. *Medical Teacher*. **31**(4):299-318.
11. Webb T P, Aprahamian C, Weigelt J A, Brasel K J. (2006). The surgical learning and instructional portfolio (SLIP) as a self-assessment educational tool demonstrating practice-based learning. *Current Surgery*. **63**(6):444-447.
12. Hrisos S, Illing J C, Burford B C. (2008). Portfolio learning for foundation doctors: Early feedback on its use in the clinical workplace. *Medical Education*. **42**(2):214-223.

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