Review/ Assessment of portfolios

Literature review

Introduction
As part of ongoing work in relation to Flying Start NHS®, NHS Education for Scotland (NES) wished to review the literature in relation to how portfolios are reviewed and to identify the key points and issues in the current context. This includes consideration of the uses of portfolios, the debates about whether personal reflective accounts should be assessed and the factors that contribute to the successful use of portfolios.

Background
Flying Start NHS® was first launched in 2006 to support Nurses, Midwives and Allied health professionals (NMAHPs) make the transition from student learner to Newly Qualified Practitioner (NQP). It introduces NQPs to life-long learning through continuing professional development by participation in a learner-led development programme. NQPs, with the support of a local mentor, work through ten web-based learning units and record their learning outcomes in either a paper or electronic portfolio.

Previous independent evaluations have highlighted inconsistencies in mentors’ and NQPs’ understanding of what defines completion and use of the portfolio. In addition, there appears to be a huge debate in the literature as to whether portfolios should or should not be assessed.

Purpose and methods
This literature review seeks to identify key points from current debate which will assist in developing criteria and guidance for completion for NQPs, mentors, line managers and NMAHP Directors.

Search question
The key question guiding this literature review was: Should records of learning such as portfolios, reflective personal accounts and reflective diaries be assessed?

To identify the relevant literature, support was provided by the Health Management Library and Information Service Literature Search Service who carried out searches base on this key question within the parameters outlined below. The information provided by the Health Management Library was supplemented by additional material provided by NES. A review of the information
provided was carried out and papers that focussed on the question and issues under investigation were reviewed.

Databases searched

- Health Management Library
- HMIC Health Management Information Consortium
- Medline CINAHL Cumulative Index to Nursing & Allied Health
- ASSIA Applied Social Sciences Indexes & Abstracts
- RCN Library catalogue

Date parameters

- 1998-2014 (Last 15 years)

Portfolios and their use

In general terms, a portfolio can be defined as a collection of evidence that learning has taken place (Challis 1999) or, as defined by (Andre 2011) as:

“a collection of resource: a repository and a means though which to develop skills in reflective analysis and communication, whether through written or computer-mediated formats.”

There are two major portfolio approaches (Barrett 2009; Andre 2011):

- process orientated or learning portfolios
- product orientated or achievement portfolio

However, the term portfolio is used in different ways and there are various kinds of portfolio. It is used to describe a plethora of learning tools that differ widely in content, usage and assessment requirements (Rees 2005a and b). For some, it is synonymous with a work-book and for others, it is a purposeful collection of a learner’s work that tells the story of their efforts, progress and achievements. Some systems will require little more than a written assignment, while others will ask for a true portfolio of materials; that is, a collection of evidence using a variety of media, which could include audiotape, video, flipchart sheets, letters, questionnaires and more.

In recent years, the use of portfolios as both a learning and assessment tool has become more widespread across the range of health professions. In nursing, portfolios were initially designed to ensure that the profession would display a range of evidence including skills, knowledge and attitudes (ENB 1991). It is through the development of a professional portfolio that every nurse and midwife on the Nursing and Midwifery Council (NMC) resister and every Allied Health Professional
(AHP) registered with the Health and Care Professions Council (HCPC) currently demonstrates that they have maintained and development their professional knowledge and competency.

Buckley et al (2009), in a systematic review of the educational effects of portfolios on undergraduate learning (medicine, nursing and AHPs), found that portfolios were used mainly in the clinical setting. Completion of the portfolio by the undergraduates was mostly compulsory, reflection mostly a required rather than voluntary activity and sharing of reflections with staff or other undergraduates the norm.

Portfolios were also developed for formal assessment processes, and were seen as one form of authentic assessment that was particularly suited to evaluating the application of theory in practice (Green et al 2014). Additionally, Snadden and Thomas (1998) argue that portfolios are excellent tools for assisting formative (formal) assessment and professional development.

Portfolios used for assessment can be defined as purposeful collections of evidence used by learners to document and reflect on learning outcomes, and van Tartwijk and Driessen (2009) suggest they are ideally suited to document and reflect on workplace-based learning experiences as they provide learners with opportunities to demonstrate competence. At the heart of every portfolio is information collected in evidence of the owner’s learning process and/or competence levels. In fact, portfolios have been successfully used to document evidence of achieving all the learning outcomes of an undergraduate medical programme (Davis et al 2009, demonstrating the diversity and potential of this learning and assessment tool.

Norman (2008) argues that the learning portfolio is not just another learning or assessment method, but is a ‘Jack of all trades’ appearing in multiple guises to do almost anything demanded of it for learners at any level from novice to expert. It is an opportunity for learners to report on work done, feedback received, progress made and plans for improving competence (Norman 2009).

**The benefits of portfolios**

Portfolios are seen as tools to increase learners’ self-awareness, to foster learners’ ability to learn independently and to encourage learners to reflect on their own performance (Challis 1999; Pitts 2007). More specifically, according to Andre (2011), portfolios help to demonstrate and support:

- individual reflective thinking, employment, education and professional and personal development
- performance based on analysis of previous and current practice
- performance based on analysis of previous and current knowledge, skills and experience
• learning based on knowledge acquisition and skill development
• setting future goals and career direction (based on consideration and analysis of the previous two points)

In a systematic review of the educational effects of portfolios on undergraduate student learning, Buckley et al (2009), the higher quality studies (those which met a minimum of seven of 11 quality indicators related to the appropriateness of the study design, conduct, results analysis and conclusions), suggest that portfolios:

• improve knowledge and understanding, especially the ability to integrate theory with practice
• lead to greater self-awareness and engagement with reflection
• improve tutor feedback to students and tutor awareness of student needs
• help students to cope with uncertain or emotionally demanding situations
• prepare students for the postgraduate setting and reflective practice

Portfolios are considered by some to be a portable mechanism for evaluating competencies that may otherwise be difficult to assess, such as practice-based improvements, use of scientific evidence in practice, professional behaviour and creative endeavours (Byrne et al 2009). The portfolio provides a means through which nurses can record and provide evidence of skills, achievements, experience, professional development and ongoing learning, not only for themselves, but for the information and scrutiny of registration boards, employers, managers and peers (Green et al 2014).

Snadden and Thomas (1998) believe that portfolios are excellent tools for assisting formative assessment and professional development. This was supported by the study of nursing students by Fakude and Bruce (2003) and Richardson and Maltby (1995). Tochel et al (2009) concluded from their literature review that there was good evidence that, if well implemented, portfolios are effective and practical in a number of ways including increasing personal responsibility for learning and supporting professional development.

But the real value of a portfolio is in the reflection and learning that is documented therein, not just in the collection of work (Snadden and Thomas 1998; Duque et al 2006; Davis and Ponnamperuma, 2009, Tochel et al 2009; Barrett 2009, Green et al 2014). Driessen et al (2005a) reported that, providing that particular conditions for success are in place for students, e.g. coaching; portfolio structure and guidelines, using a portfolio:

• may enhance their reflective abilities
• foster a critical attitude towards their own performance
• help them to manage their development

However some have questioned the quality of reflections documented in portfolios. In their study of the views of practice teachers, El-Ansari and Spence (2004) questioned the quality of the reflections found in student portfolios with higher level skills of critical enquiry and problem-solving only rarely apparent, and the issue of quality of reflection was also highlighted by Richardson and Maltby (1995), who found that reflective diaries completed by nursing students were weighted towards the lower levels of reflection such as discussion and description of experiences and awareness of feelings.

**Support in using portfolios**

Gibbs (1995) and Crandall (1998) agree that, for portfolios to be successful, students must be guided through their purpose, content and structure in an attempt to alleviate learners uncertainty, which Pitts et al (2001) suggest is one of the principal disadvantages of portfolios. The amount and nature of evidence to be included in a portfolio may cause anxiety (Mitchell 1994; Phillips and Bharj 1996) and, according to Grant and Dorman (2001), a sample portfolio may be a useful way to contextualise this.

Vance et al (2013), in a study involving medical students, found that many trainees view the portfolio negatively and suggest that ongoing support is needed for both trainees and supervisors in portfolio-building skills and in using the portfolio as an educational tool.

In addition, Scholes et al (2004) found that assessors, rather than written information, were the preferred source of guidance for students and, despite extensive direction, nursing students did not feel confident about the portfolio until they had used it in practice and received feedback on it. Driessen et al (2007) concluded that for portfolios to be effective in supporting and assessing competence development, robust integration into the curriculum and tutor support are essential. Also, regular feedback from a mentor enhances the success in the use of portfolios (Tochel et al, 2009).

One recurring finding in research examining users' experiences of portfolios is that clearer guidance on expected content and structure is needed to reduce inclusion of unnecessary evidence and increase the quality of evidence of achievements (Baume and York 2002; Driessen et al, 2005; Rees et al, 2005; NMC 2005; McMullan 2006; GMC 2007; Fawns and McKenzie, 2010). The literature review by McCready (2007) highlights the importance of clear guidelines for portfolio construction.
and assessment, of tri-partite support during portfolio development and of guidelines for qualitative assessment.

As previously reported, Driessen et al (2005a) portfolios can be successful if particular conditions such as coaching; portfolio structure and guidelines are in place. Tosh et al (2005) suggest that from the outset, students and clinical supervisors should be clear about the learning objectives and benefits of using portfolios. According to Williams et al (2009), this helps to avoid inconsistencies in the way they are used. Users should be clear about the level of commitment they are expected to give with regard to contributing to their portfolios as this will keep any confusion and resistance to a minimum. Supervisors need to set clear timelines that inform students when they are expected to have contributed to their portfolios, and when their work will be reviewed. The supervisor should identify any gaps in students' knowledge to help support their personal development and to improve course planning. Davis and Ponnamperuma (2009) suggest paperwork should be kept within manageable limits and that a student induction process, that highlights the importance of providing evidence for achieving all learning outcomes and not just theoretical knowledge and skills, may be helpful in allaying student concern over portfolio building and assessment. It is also suggested that this process supports preparation for lifelong learning and reflective clinical practice.

Taylor et al (1999) recommend the availability of exemplars to prepare panels of assessors. Exemplars are an essential aid for learners as well, and can help them develop an image of what a portfolio looks like. Clarke et al (2011) tested new evidence-based guidelines they had created for medical students, and concluded that through using these guidelines, understanding of evidence and presentation requirements for clinical practice portfolios were improved.

**Assessing portfolios**

There are conflicting reports about whether the different purposes of portfolios can be combined without compromising the meaningfulness of the contents (Tochel et al 2009). A review by Buckley et al (2009) found that whilst the majority of included studies assessed their portfolios and approximately half used summative assessment (self-reflective), either alone or with formative (formal) assessment, reports of the effect of assessment on student learning are mixed. Reflection is at the heart of any evidence submitted in a portfolio and there is much debate as to whether reflection can or should be assessed.

It has been suggested that knowing the portfolio will be assessed is a motivating factor for student completion and several studies and review found that students often see keeping a portfolio as an
additional burden and are unlikely to engage in it voluntarily without the stimulus of assessment (Driessen et al. 2005; Grant et al., 2006; Vance et al., 2013).

A study by Strivens et al. (2009), which reviewed the role of the portfolio as an assessment tool, found that respondents, a number of whom had carried out formal evaluations, gave a range of benefits relating both to student education and improved efficiency. The evaluations from students were equally positive. This work suggests that portfolios can be used successfully for both formative and summative assessment. Batson (2002) also noted the advantages of portfolios in monitoring students’ learning. He suggested summative portfolios allow supervisors to have a more comprehensive, dynamic and regularly updated view of how well students are progressing, which can help in formative assessment.

Issenberg and McGaghie (2002) stressed the importance of ensuring that portfolios encourage growth, not just report or support it. They advised that the portfolio assessment should be constructive to promote students’ development and avoid them feeling pressured to skew artefacts, or limit reflection to experiences that present them in a positive light. Trainee-tailored feedback is needed to ensure that portfolio-based assessment promotes lifelong, self-directed and reflective (Vance et al., 2013).

However, Murie and Wakeling (2011), Tochel et al., 2009 and Barrett (2004) and suggest that assessment could be detrimental to the fundamental principle of reflective learning which promotes self-awareness and encourages the learner to be open and honest about their learning and development needs. Some researchers have questioned the value of using the portfolio as an assessment tool, and Joyce (2005) suggested students may be reluctant to engage in honest, reflective learning if they know their expressed limitations will form part of assessment criteria. This was supported by McMullan (2006) and Fawns and McKenzie (2010). McMullan (2006) believed using portfolios for both assessment and learning creates a conflict and Fawns and McKenzie (2010) who suggest that if the priority is to use portfolios to support reflection and encourage deep learning, they should not also be used for summative assessment or accreditation.

Students must feel comfortable displaying honest reflections and imperfect work if they are to have a true sense of their progress. El-Ansari and Spence (2004) and Richardson and Maltby (1995) highlighted the paradox where assessment may inhibit the development of reflection but that, without assessment, students may be unwilling to engage in reflective activity. There are issues of
concern about confidentiality of portfolios due to the kind of information which may be gathered for and kept in them (Redfern 1998; Gannon et al, 2001).

Snadden and Thomas (1998) highlight that there may be conflict where portfolios serve both the purposes of individual learning/assessment and large scale assessment. They raise the following questions:

- can portfolios be assessed if the work is not standardised?
- what criteria should be involved in making judgements about students’ attitudes, feelings and behaviours?
- how can the issues of privacy and confidentiality be accounted for as some portfolios contain highly personal material?

The dependence of the portfolio upon written evidence of learning and competence must also be considered. Driessen et al (2006) suggest that assessors may allow irrelevant qualities such as writing skills and portfolio structure to affect their summative judgement recognising that portfolio assessment of clinical training should represent the students’ fitness to practice rather than their literary skills. This issue surfaced regularly in student comments and is supported by the students’ agreement that the portfolio only measured their ability to write about their practice, and not their practice itself (Brennan and Lennie 2010).

Vance et al (2013), in a study of medical students, found that many of them viewed the portfolio negatively and suggested that continued support is needed for both trainees and supervisors in portfolio-building skills and in using the portfolio as an educational tool. They suggest that trainee-tailored feedback is needed to ensure that portfolio-based assessment promotes lifelong, self-directed and reflective practice.

Methods of assessment

Fulton and Jasper (2005) believe that whilst portfolios have increasingly been used to assess attainment and competence in nursing and other health care professions for over a decade, the assessment processes and criteria for assessing them have remained largely rudimentary and undeveloped. In fact, assessment often remains localised, impressionistic and dependent upon the interpretation and adaptation of criteria developed generically for work at this level within individual Higher Education Institutes and not tailored to the specific situation where the portfolio is being used. McMullan et al (2003) suggest that a variety of assessment methods are needed for assessment, and portfolios appear to have the potential to integrate these methods. Issues of
rigour in assessment of portfolios need to be addressed, but the assessor’s professional judgement will inevitably enter into this assessment (McMullan et al 2003, Fulton and Jasper 2005).

There appears to be general agreement on the value of portfolios for formative assessment, but little information on their use for summative assessment (Jasper 1995; Pitts et al 1999; Snadden 1999). If they are to be used for summative assessment, criteria for assessment need to be standardised to facilitate objectivity (Mitchell, 1994). Other issues such as confidentiality, validity and reliability are also said to be important (Snadden 1999; Driessen et al 2005).

Driessen et al (2005b) who devised an assessment procedure for portfolio assessment, report that the essential elements in the assessment process include:

• feedback cycles, incorporated into the mentoring process during the compilation of the portfolio
• maintaining a careful balance between the mentor’s roles of coach and assessor
• student involvement in the decision process to ensure commitment on the part of the student and allow the student to communicate a different point of view to that of the mentor

There have been various attempts to devise grading criteria for assessing portfolios in nurse education (Jasper, 1995; Mathers et al, 1999). Tochel et al (2009) state that reports of inter-rater reliability for summative assessments of portfolio data are varied and there is benefit to be gained from triangulating with other assessment methods.

However, data collected in portfolios are usually descriptive (reflective accounts, statements of evidence to support claims for skill achievement, etc.) and judgements made on competence and learning are at best at the ordinal level, such as pass/refer/fail, has led some general practitioner educators suggest that these may not be the appropriate criteria because the nature of the evidence in portfolios is descriptive and judgement-based rather than quantifiable (Webb et al 2003).

Portfolios are by their very nature very individual and not amenable to standardisation and their assessment is often subjective. However, as Jasper (1995; p602) states, “the value of the portfolio lies in the nature of the process, rather than the end product per se. The portfolio itself merely documents the process, rather than supplying any measure of quality.”

Snadden (1999) considers that educators using portfolios for assessment need robust methods, but questions whether efforts to use the concepts of validity and reliability constitute an attempt to measure the unmeasurable. Any assessment method is only ever a compromise. Pitts et al (1999;
p428) believe “there may be a danger in trying to force portfolios into a technical-rational world as a political expedient, when changing the culture to one where professionals are encouraged to learn, develop and change themselves should be the aim.”

Driessen et al (2005b) suggest there is a common misconception that subjectivity equals unreliability and that objectivity equals reliability and that this is not universally true. However in any formal assessment procedure a fair decision must optimally reflect the demonstrated competence. This implies that assessments must be comparable across candidates, with minimisation of bias and error.

Webb, et al (2003) believe that criteria developed to evaluate qualitative research may be more appropriate for evaluating portfolio assessment processes student attainments, strengths and weaknesses.

Byrne et al, 2009 suggest that assessment of the portfolio needs to be guided by the purpose of compiling it. For example, to assess competency in clinical, educational, research, or other contextual spheres. The portfolio scoring or validation method then must be determined. The final consideration is to keep the portfolio process simple! Using a simple method for guiding completion and evaluation of the portfolio will keep the process manageable and viable.

**Examples of assessment**

A small number of examples of assessment criteria were found in the literature reviewed.

Dannefer and Henson (2007) describe how the portfolio was developed to provide both formative and summative assessment of medical student achievement in relation to their programme’s nine competencies and based on the following considerations:

1. If reflective practice is a goal, setting aside time and providing mentors is critical to helping students reflect on evidence of their learning and professional development

2. Distinctly separate processes and reviewers for formative portfolio and summative portfolio assessments can ensure that confidentiality of reflections of a personal nature is not compromised by the rigor and judgments required for making promotion decisions.

3. Student responsibility for selecting evidence and analysis of their learning is critical to maintaining student engagement in assessing progress
4. Requiring essays aimed at integrating the competencies needed for the practice of medicine, such as asking students to reflect on the various roles of the doctor, can facilitate reflection on learning.

5. Rigorous measurement standards are necessary if portfolios are to be used for summative purposes: fairness (clear instructions, equal assistance, and due process), validity (appropriate standards, evaluators capable of making sound judgments, and quality authentic evidence), and reliability (trained evaluators and adequate curricular experiences providing multiple sources of assessment.

Byrne et al (2009) propose the use of an evaluation tool to support these processes and have developed a tool for this purpose (see table 1 below).

<table>
<thead>
<tr>
<th>Table 1: Sample Portfolio Evaluation Tool (Byrne et al 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following minimum criteria must be met for initial acceptance:</td>
</tr>
<tr>
<td>Professional resume. Assure that the resume reflects perioperative experience in the last 2 years.</td>
</tr>
<tr>
<td>Four professional activities have been chosen. Activity must have occurred within the last 5 years.</td>
</tr>
<tr>
<td>There is a reflection form for each activity.</td>
</tr>
<tr>
<td>Evidence has been submitted for each activity.</td>
</tr>
<tr>
<td>These questions may assist you in evaluating your portfolio application:</td>
</tr>
<tr>
<td>Is the evidence credible? Is there written evidence of experience/achievement?</td>
</tr>
<tr>
<td>Is the evidence adequate/appropriate? To what extent does the evidence reflect the analysis of strengths/progress outlined in the narrative?</td>
</tr>
<tr>
<td>Is the narrative comprehensive? Does documentation allow reconstruction of the event?</td>
</tr>
<tr>
<td>Professional activity #________ Yes No Comments</td>
</tr>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
</tr>
<tr>
<td>Resume</td>
</tr>
<tr>
<td>SUMMARY OF COMMENTS FOR RE-SUBMISSION (IF NEEDED)</td>
</tr>
<tr>
<td>I would like to recommend professional activity #________ for submission on the Competency &amp; Credentialing Institute portfolio website as an example for review by others.</td>
</tr>
</tbody>
</table>
Driessen et al. (2005b) used a qualitative research criteria as opposed to reliability in the evaluation of portfolio assessment. Five qualitative research strategies were used to achieve credibility and dependability of assessment.

- mentors read portfolios at least twice during the year, providing feedback and guidance (prolonged engagement).
- their recommendation for the end-of-year grade was discussed with the student (member checking) and submitted to a member of the portfolio committee.
- information from different sources was combined (triangulation).
- portfolios causing persistent disagreement were submitted to the full portfolio assessment committee.
- quality assurance procedures with external auditor s were used (dependability audit)
- the assessment process was thoroughly documented (audit trail).

Portfolios were judged at the end of the academic year and given a grade of fail, pass or distinction. The following, rather global, criteria were used to assess the quality of the portfolios:

- the quality of the analyses of strengths and weaknesses
- the quality of the evidence
- the extent to which the evidence reflected the analyses of strengths and weaknesses
- the clarity and feasibility of the learning objectives
- the extent to which the learning objectives were achieved

Summary
This literature review has considered current evidence about the use of portfolios and their assessment, and a summary of the key points is provided below.

Definition and purpose
The term portfolio can be defined as a collection of evidence (in a range of formats appropriate to the circumstances) that shows that learning has taken place. The type of evidence collected in a portfolio can vary widely, as can the breadth and depth of this evidence. Two major portfolio approaches were identified (Barrett 2009; Andre 2011):

- process orientated or learning portfolios
- product orientated or achievement portfolio
In the literature reviewed, there were conflicting reports about whether the different purposes of portfolios can be combined without compromising the meaningfulness of the contents. However, portfolios should encourage growth, and not just to report or support it.

Reflection is at the heart of any evidence that is part of the portfolio, but there is much debate as to whether reflection can or should be assessed.

**Uses of portfolios**

Portfolios are seen as tools to increase students’ self-awareness, to foster students’ ability to learn independently and to encourage students to reflect on their own performance. From this perspective, the real value of a portfolio is in the reflection and learning that is documented therein, not just in the collection of work. However, some have questioned the quality of reflections documented in portfolios and of individuals being required to share their reflections.

A recurrent finding in the literature was that, for portfolios to be successful, students and clinical supervisors should be clear about the learning objectives and benefits of using portfolios. This includes clear guidance e.g. purpose, content and structure.

Provision of this guidance can help to help alleviate uncertainty about the process and aims of the portfolio and reduce the inclusion of unnecessary evidence and increase the quality of evidence of achievements. Using a simple method for guiding completion and evaluation of the portfolio will keep the process manageable and viable, support participation in the processes and benefit those participating in the process.

**Assessment**

Knowing the portfolio will be assessed is a motivating factor for student completion although several studies and reviews found that students often see keeping a portfolio as an additional burden. But they are unlikely to engage in developing a portfolio voluntarily without the stimulus of assessment.

However, the literature suggests that assessment could be detrimental to the fundamental principle of reflective learning which promotes self-awareness and encourages the learner to be open and honest about their learning and development needs.

Using portfolios for both assessment and learning creates a conflict and it has been suggested that the assessment process can be detrimental; to the principle of reflective learning. Students must
feel comfortable displaying honest reflections and imperfect work if they are to have a true sense of their progress.

Crucially, assessment of the portfolio needs to be guided by the purpose of compiling it and learner-tailored feedback is needed. This feedback on portfolio-based assessment promotes lifelong, self-directed and reflective practice.

**Conclusion**

There are ongoing debates in the literature about the use of portfolios and whether they can or should be assessed. However, their use as evidence of learning inherently involves some type of judgement or assessment, and assessment has been identified as a motivator for completion.

Where portfolios are successful, contributing factors to this success are the provision of:

- clear and simple guidance about the purpose, content and structure
- learner tailored feedback
- assessment/ review guided by the purpose of the portfolio
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