Does using an electronic professional portfolio cultivate the habits of reflection, connection and professionalism in beginning teachers?

Jo Trowsdale - report to IATL October 2013

The context for the research

Our question drew upon research which suggests that whilst e-portfolios are not new, their pedagogical role is under-developed, in HE and in relation to ITE. (Barrett 2011, Barrett 2005, Butler 2006, Crichton & Kopp 2008). The arguments made to date for e-portfolio developments in Higher Education, which inform our project, are varied as outlined below.

Zeichner and Wray (2001) identify 3 types of portfolio: the reflective being most prominent in ITE; the credential (competency evidencing/ matching) which seems to have featured most in HE (and FE) to date; and the showcase (for employability). Of course these pure versions can be blended (Zawacki-Richter, Hanft and Backer 2011) and e-portfolio designers and developers seek to address the needs for such blended models in ways which ‘attend to the educational content and …. pedagogy’ (Brown et al. 2007).

Researchers in medicine were amongst the first to profile blended types where case studies required training medical practitioners to develop reflective practice skills as part of their competency evidencing and professional development (Dornan, Carroll and Parbooshing 2002).

Some research into the effectiveness of e-portfolio to foster greater reflection points also towards personal growth in beginning teachers (Hughes 2010) which supports professional growth.

The increasing use of electronic planning, resource generation and use of hand held technologies in schools (Gray, Thomas and Lewis 2010; Evans Ochola et al 2011) also makes the practicality of collecting experiences through new technologies a more regular practice. The popularity of social media, through which self-representation is increasingly an established cultural practice for young people, suggests that the notion of crafting a professional self-representation through new media might be seen increasingly as a normal practice. However some research warns against assuming young people are all digitally literate and actively engaged in social media production (Facer and Selwyn 2010).

Additionally there is growing pressure, felt by the students, tutors and professions to connect university education more authentically both to employment and to coaching the professional identify of the learner (CBI and NUS 2011; CBI and UUK 2009).

The opportunity created by the introduction of new Teacher Standards in September 2013 (DfE 2012) is of great significance to this study as it proposes one set of
standards for all teachers, from trainee to experienced, which means that any self representation developed in training would use a framework which would continue to be used in professional life. The new Standards also offer less prescription of interpretation or about what constitutes evidence. This provides an opportunity for teacher’s individuality to be more fully represented and for interpretations to be locally and personally defined.

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**E-Portfolios: The Warwick context for choosing Mahara**

The Institute of Education has experimented with on-line portfolios. PGCE and GTP Secondary students have been using Warwick blogs for a number of years to help trainee teachers become reflective practitioners. Lessons learnt suggested that developing this habit needs support by staff and limitations of the blog, a kind of e-portfolio, which does not allow for any sharing of exemplar materials of practice development, was a further disincentive to use. For several years PGCE primary have been asked to complete their Professional Development Portfolio online using a whole series of MS word based templates. This online PDP forms a collection of artefacts but does not contain rich explanation or peer sharing. The motivator for completion is qualification and use has ended at point of qualification. Undergraduate online portfolios in site builder have also been trialled for two years but the value and appeal to students has not been persuasive enough to engage all students who have needed significant encouragement to complete and update.

Beyond Education at Warwick and beyond Warwick, other factors informed this pilot. Firstly, the pilots in Education at Warwick, JISC training, wider literature review and the research purpose suggested greater flexibility and value of a blended portfolio was necessary for our purposes: Mahara appeared stronger than other models in this respect. It is a blended tool allowing users to combine the features of a repository of selected artefacts, a journal, a personal skills / employment resume and social media tools which enable collaboration. Mahara is ‘an open source e-Portfolio and social networking web application (Wikipedia). [www.mahara.org](http://www.mahara.org)

The lead researcher had knowledge of the use of Mahara at Goldsmiths and Newman (other Initial Teacher Training delivering universities).

Warwick University is introducing Moodle that in 2012-3 was being piloted in two departments. Neither department were using Mahara at this point so while there was interest there was also a lack of expertise. Because Mahara was not yet being piloted through central university IT services and the time scales of needing to start the pilot in 2012, we used a partner school to host the project. This meant that there was only disparate expertise. There was no direct user or instructor experience in an e-portfolio that was more than a tutor led repository structure or blog. However the Institute’s then e-learning officer had expertise in Moodle. Languages’ e-learning officer had expertise in Mahara. Both were supportive but had limited capacity to support something not recognised as part of their role.
The project design

A sample of 7 Teach First beginning teachers, training in 5 different subjects at one secondary school in the West Midlands were involved. Two students left the programme during the course of the year, so the data reflects the experiences of 5 students, across 5 subjects. The lead researcher knew the school, having worked as professional tutor for a year and built up a strong rapport with the professional mentor, subject mentors and the senior leadership team.

Several measures were used to gather data. Key was a simultaneous self-review and mentor review at three points in the year (late autumn, spring and summer). Triangulated researcher reviews were undertaken, by the lead researcher, Mahara expert and IT/e-learning officer, on the completed e-portfolios. Both the self review and external reviews used descriptors related to aspects identified as key issues by the research question and literature review. They related to:
- Frequency of use
- Confidence, competence to use new technologies / e-portfolio capacities
- Breadth of use new technologies / e-portfolio capacities
- Quality of reflective practice and professional growth
- Communication and sharing habits
- Engagement / ownership

An example of the self-review template is attached at the end of the paper (Appendix 1). At the end of the pilot, one to one interviews were conducted with all five teachers by the lead and support researcher. These sought to check and probe the findings from the self reviews and external analyses of evidence.

The research design involved consultation about key issues effecting measures and procedures, with fellow Moodle and Mahara experts. Our process began with a template for an e-portfolio, which included all requirements for qualification and scaffolded how this might be done, sometimes through guidance, sometimes through example. (see appendix 2 and 3). Research permissions and ethical approval was sought from Teach First, The Institute of Education, the school and all participating teachers and mentors.

There were four collaborative sessions with trainees. The first introduced the project: clarifying expectations, sharing views and feelings (as baseline comments). The second was concerned with each teacher setting up their own e-portfolio, using tutor and peer support, written ‘how to get started’ and online guidance to learn how to upload files, construct a page (write text and insert a file) and navigate a collection. The third session followed the first termly progress review at which some fortes had been identified and each teacher had been tasked to create a page of evidence of an aspect of practice they felt at least competent in. This session was a talk based supportive peer review of 7 first draft evidence pages. The aim was to explore different ways in which this might be done and signal approval for diverse
approaches. A further such session further on allowed teachers to share processes and evidence which included: video, slideshow, weblinks and collections within collections. Progress was significantly enabled by links to a series of YouTube films about how to do things in Mahara, some created by the Languages Mahara consultant specifically for this group, or previously created for Languages students or simply shared publicly by the Mahara community.

Ongoing support was given through 5 one to one progress meetings between each teacher and the lead tutor/researcher in which the e-portfolio featured to varying levels as well as through online page feedback. Occasionally Jing was used as a means of offering fuller feedback. A development session for mentors showing the pilot in process was conducted to encourage the use of eportfolio in weekly mentor meetings and termly reviews. In late Spring at the termly review meeting, teachers were invited to give a 10 minute introduction to the fortes of their practice, using standards evidence gathered on the e-portfolio. Forum and email prompts were used to remind teachers of next steps, share ideas and collaboratively solve problems.

There were several limitations or constraints to the pilot. The delay in project approval and establishing partners for viability meant participants were not introduced to the e-portfolio within their June training. At this point the standard TeachFirst paper-based journal was introduced. This resulted in most participants being reluctant to initiate wholesale new journal reflection habits, when they had established habits which all their peers were also using. This challenged the receptivity to an online journal. Using the school hosted Mahara meant that teething problems were solved at the goodwill of the technician who whilst very supportive, was not experienced in Mahara so always had to defer to the host provider and often resulted in the default set-up shaping design. For example the plan to gather metrics data about regularity of usage by teachers was not possible as the school had not effectively set up this tracking facility in advance of the pilot start. Two of the 7 student teachers left the programme, which negated some rich data about alternative and additional ways they had been using the e-portfolio developmentally.

Findings

At the first collaborative meeting to introduce the pilot, student teachers collectively recognised a number of advantages of being able to evidence their practice digitally. They noted that it would be ‘easy to edit / change and re-order’ materials that ‘was already on my computer’ and that it would make it easy to use ‘pictures / videos and emails’ and avoid ‘pile of files packed with information you will never look at again’. However there were also concerns about ‘not knowing what to do’, ‘capacity’, ‘time’, ‘not being able to annotate stuff’, ‘losing track of what is /isn’t there’ or ‘not being able to visualise what I have holistically’ as well as the ‘risk of adding lots of rubbish to the folder’.
So the challenges identified in earlier research proved to be equally valid in our work: **confidence and effort in using new technologies and the immediate relevance, ownership and value** were evident as key issues for all participants from the outset. Indeed early on in the pilot, one student teacher almost withdrew from the pilot (and might have encouraged others to have done so too), due to her concerns about the time she might need to invest in learning new technologies and her poor view of the potential value of the form. For her the effort involved in gaining technological competence, her distrust of the medium and especially with a new pilot, the lack of precedent and the need to create anew were quite threatening. Nonetheless once overcome these initial challenges diminished and often even reversed. This student teacher has become the strongest advocate for e-portfolio.

Data analysis of self and mentor evaluations revealed an improving trend on all of the criteria below although to very different levels. Intensification in usage and associated confidence might be expected towards the end of the year as standards evidencing is required for qualified teacher status award and should be borne in mind when looking at this data.

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<td><strong>Confidence, competence to use new technologies / e-portfolio capacities</strong></td>
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<td><strong>Communication and sharing habits</strong></td>
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<td><strong>Engagement / ownership</strong></td>
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As the data reveals **significant and improvement occurred in confidence and competence as frequency increased**. Several participants commented on how Mahara was not intuitive or instinctive but that it did become more so ‘once you’ve done something once its really easy’ although you needed to use it with some regularity. Certainly the concept of collections of pages which can be navigated and of all types of files being artefacts which either need uploading and importing, pasting or hyperlinking from another source needs to be explained, but the process of importing and pasting to construct or reconfigure a page is done with relatively
familiar digital processes of drag and drop of icons, clicking / editing preferences from tabs. Most student teachers liked the freedom to work on it when it suited them and to make use of their preferred or personal digital literacy strengths.

All spoke about the power of the visual in representing their practice, making comments in interview such as ‘Because its more visual you can show the craft [of teaching] more’ and ‘I didn't realise the capacity it had for showing atmosphere’. This appeared to be significant in informing the habit of and quality of reflection which also improved as verified by the external researchers, mentors and subject tutors who were familiar with assessing evidence from student teachers. Several participants noted that the pilot increased innovative application of new technologies, particularly more visual resources into their classroom teaching. One commented that her use was ‘not necessarily new,’ but that she made new use of them: ‘I took photos so that I could reflect on practice’. Interviews revealed a common awareness that the process of selecting, sequencing and writing about such images fed a deeper level of reflection. Many students spoke of planning to complete a new entry with images and knowing why they were relevant to a given aspect of their professional skills but that the very process of focussing upon the evidence generated additional reflection: a ‘reflection on’ ‘reflection-in-action’ (Schon 1985) perhaps and often even a focus for next actions, so reflection became a creative and professionally valuable act. ‘As you edit .. you’re looking back and looking forward’, ‘As you’re writing about it you go deeper in and you’re creating from reflection’.

Such habits informed a growing awareness of their personal and professional fortes and identities and student teachers became more able to write and talk about their strengths and define areas for development, both within personal interpretations of particular dimensions of practice (Appendix 4) and in their portfolio introduction pages. (Appendix 5)

Less change seemed to occur in the breadth of use of new technologies and in the habit of sharing and communicating. It is clear that having a lead researcher and tutor without significant digital literacy there was a potential weakness of the project design which invited but did not explicitly model and promote digital innovation or sharing as much as it might have. It is possible also that there was a lack of clarity in the questions / statements in the research tool around digital innovation which created different interpretations and thus less reliable responses by student teachers. (The only discrepancy between the external analyses and the participant’s own was here). Additionally piloting e-portfolio in one school did not adequately test the habits of sharing as student teachers, student teachers and mentors often consulted each other face to face, seeing less need of sharing more widely. This limited the involvement that external tutors might have as mentors did not typically regularly communicate via the e-portfolio, despite a hugely enthusiastic response to a training session and expressed interest in being able to respond when they had a moment which busy school days sometimes prevented.

However the low development rate on these aspects also prompted a sharper review of our earlier assumptions that as young people learning in a more digital age
theses student teachers would be fairly digitally literate and active users of social media. These issues were probed within the interviews that took place, where it became apparent that student teachers’ collaborative or independent learning as well as social media habits were significantly different (echoing Facer and Selman 2010) and these appeared to correlate quite accurately with their individual habits through e-portfolio. Whilst all used Facebook, several were passive (voyeurs). These same student teachers had visited each other e-portfolios for ideas, without leaving comments and not shared any material beyond through face to face work with departmental colleagues. By contrast several students who were very comfortable with digital technologies and were active social media contributors, created links to other digital sites where they had already loaded data hungry material, such as videos or high quality resources and had shared material with other student teachers in other schools.

Interviews were an opportunity to check and discuss interpretations of such data more fully and allowed us to affirm some aspects of the pilot which were significant to affecting benefit. Firstly all student teachers found the process of gathering evidence, distilling and reflecting upon their practice a positive experience which they valued and owned as ‘something to celebrate me’. They all commented on how creating a multi-media self account provided a boost to their professional self esteem. ‘It makes you feel good’, ‘You think: “Look at all the good stuff I’ve been doing this year”’; ‘It gives you a sense of achievement’; ‘It made me feel really proud and like I just wanted to purr’. Such comments were closely allied with learning about themselves and growing professionally and so this seemed to be a driver or impetus, possibly a pre-condition for other aspects of professional growth and in times of challenge a buffer to aid resilience.

The value of multi-media even in the simple form of a slide show of connected still images were noted by several participants as very powerful in communicating experience, and generating a sense of the felt environment or climate for learning. As one said ‘I didn’t realise the capacity it [e-portfolio] had for showing an atmosphere’. Several valued being able to represent moments and aspects of their practice which tutors, mentors, colleagues, friends and family would otherwise never get an insight into. They saw it as an accessible but also a true, complex representation.

Reflection seemed to breed further reflection and was a spur further action. Several participants suggested that significance of the visual in this: ‘Because its more visual you can show the craft [of teaching] more.’ Images seem to have fostered more looking at their own practice, often prompting next steps and furthering the action-reflection cycle. ‘You plan to put something up and as you’re writing about it you go deeper in and you’re creating from reflection’

Although collaboration remained an underdeveloped aspect of the pilot, One participant, teachers saw its potential as a virtual collaboration tool which could enable sharing and collective reflection across distance as a virtual community of interest as a subject group might be whilst training, but also useful on an ongoing
basis. In fact the student teacher who almost withdrew, was passionate about its potential as a tool for collaboration and learning.

‘Reflective practice and sharing between staff members doesn’t really happen and I think that potentially if everyone had one of these ... where people uploaded a lesson say and got reflections back that could be an incredible tool... like co-coaches ...that could be an incredible way to encourage reflection beyond NQT – it's a tool for connection!’

Recommendations

There are limitations to this study: its scale most significantly but possibly also weaknesses in the effectiveness of tools which became apparent in process. Both technical and possibly more significantly pedagogical expertise are required working dialogically to effect the kinds of benefits recorded here on a larger scale and to develop the collaborative communities of practice the pilot outline aspired too.

Points below are recorded as apparently easy recommendations for effective implementation, but each in turn warrants significant pedagogical clarity, partnership working, technical support and readiness to adapt / weave existing ways of working.

- Engage all pedagogic and technical partners at the earliest possibility in exploring the pedagogic model: how this might stimulate and aid as well as conflict with existing pedagogy and practices
- Communicate clearly what the course requires in terms of un-negotiable structure of the portfolio and what is open to interpretation
- Require early hands on sessions to set up portfolios, overcome technical nervousness and problem solve; offer subsequent sessions;
- Scaffold - use models and examples to inspire; especially celebrate difference in interpretation
- Keep offering support (videos / peer mentors / online consultant)
- Develop peer support between students; enable early innovators.
- Weave assessment and review processes through it, so the e-portfolio feeds and requires professional review conversations and assessments as becomes a tool / agency for such regular processes
- All professional / assessing / collegiate partners to engage with the portfolio (page feedback, mentor meetings and reviews, JING...)
- Consider the relative advantages or disadvantages of suggesting privacy or sharing as personal choice / advised / required
- Explore how structured tutor intervention and / or peer learning activities might stimulate reflective habits and create opportunities for communities of practice to grow (Wenger 1998).
- Consider whether the coaching or teaching of reflection might be needed to support students (Riedinger 2006).
Further research would benefit from baselining the collaborative and social media habits of students, for example using Appendix 6. It should also refine the research criteria to

- Consider whether sense of audience for e-portfolio should shape criteria
- Clarify what role ‘breadth of use new technologies’ has in digital innovation or how this might be better signalled without closing possibilities
- Provide greater detail on the qualitative nature of reflection and professionalism: establishing agreement about what progress looks like

**Reflections on the lived pedagogy of e-portfolio development**

As the recommendations above suggest, the potential e-portfolio use can offer is significantly valuable. But it also demands significantly of all stakeholders.

The guiding principle for success relates to what Laurillard (2012) calls ‘design science’: where technology serves the pedagogy with ‘a clear and continually renewed understanding of what education requires of [digital technologies]’. Here she advances constructivist pedagogies which empower learners to develop their capacities: to use technology to direct, investigate and harness learning. Certainly it requires a coherent, developmental and enabling pedagogical underpinning any course of programme to make good use of e-portfolio.

There is also a need to recognise the human dimensions of innovation and change: time is needed to support such innovations: planned structures as well as flexible response to the lived responses, offering challenge and encouragement. Mahara has been a relatively helpful agent in giving the user ownership: flexibility to construct, use, import, navigate, re-use, connect. But equally important has been the human modelling and repeated permission and encouragement to interpret, set one’s own challenges and personalise learning.

In our experience it has been the interplay of face to face and virtual which has been vital as pre-conditions to lived engagement with the e-portfolio platform, frameworks and guidance. Virtual and live communication have fed the appetite to engage, commit and develop virtual representations and together have enabled more focussed, fiercer and deeper conversation about practice when face to face, aiding the speed of improvement. All student teachers achieved recognition as ‘outstanding’ beginning teachers and whilst it is not possible to evidence this and even if true it is a small claim in research terms, my experience leads me to suggest that the process and medium of the e-portfolio usage allowed us collectively to recognise, challenge and develop these five teachers more than the traditional paper based equivalent processes might have.
The lived and felt pedagogy underpinning the use of e-portfolios appears to be a vital pre-condition to grow reflective, connected self-driven professional behaviour and mobilise the possibilities of the medium.

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