1: Digital portraits of trainee teacher's pedagogical decision making when using learning technologies in the primary classroom

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Background
All PGCE (Post Graduate Certificate in Education) Primary students complete a compulsory ICT e-portfolio over a 38 week period of study. The portfolio is self-, peer- and tutor-assessed at level 6 of the national framework for higher education qualifications and brings together individual and collaborative activities from both university study and tasks carried out during school placements. The aspects referred to below relate to the components where trainees present, deconstruct and reflect upon their use of ICTs to enhance learning and teaching in the primary classroom. Each cohort consists of approximately 120 students. The e-portfolios are created using PebblePad's webfolio tool. A template is created and 'shared' with trainees via group gateways of approximately 20 students each. Throughout the course students can access their peers' work through the group gateways. Further, each person self-selects two peer reviewers.

Intended outcome(s)
- To develop the capabilities of trainee teachers to create, publish and communicate in multiple digital media.
- To disseminate good practice through web-hosted peer-review activities.
- To foster transformative reflection on professional use of ICT on placement by creating a media rich deconstructed narrative account.

The challenge (including established practice)
Historically, a paper-based competency type portfolio was used to assess students against QTS (Qualified Teacher Status) standards for ICT (TDA 2008). Not only was the inability to include digital assets extremely problematic but, competency based systems used in isolation run the risk of obscuring the pedagogical decision making made by trainees 'in practice'. Indeed, many would argue that the goal of professional training is not to produce 'technological whizz kids' but teachers who are confident in using everyday technology in powerful ways in the classroom; for example, empowering a dyslexic child in a science lesson to record their findings with a digital voice recorder rather than transcribe.

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Teacher educator reflective prompts have evolved to encourage trainees to go beyond the 'what' and 'how' of technology implementation to consider the 'why', i.e. how the selected technologies can enhance learning and teaching, often leading to a transformation of pedagogical understanding. Zhi-Feng Liu et al (2001) suggest that 'learning should be evaluated according to the revelation of a learner's inner knowledge structures rather than measuring behavioural performance'. The situational nature of that learning and application is fundamental to professional reflection and realignment of future actions.

The e/blended-learning/ICT advantage
A paper-based portfolio would miss out on the rich activity in current primary classrooms where young learners regularly engage with a wide array of technologies of a multi-modal nature. The eportfolio affords the inclusion of multimedia artefacts, the capacity to dynamically hyperlink related aspects and rework these elements over time (Peters et al 2006, as cited in Jafari and Kaufman, 2006).

Subsequently, being able to comprehensively assemble digital case studies for peer web-based publishing allows a holistic portrayal of multi-dimensional (textual, visual and aural) primary classrooms. A more compelling connection is possible between a primary age child's learning, the trainee and fellow professionals, including the assessor. One example I recall, involved a video diary of a group of reception children recording how their experiment on the growth of a bean was going. Alongside the video extract, the teacher educator rationale on providing the children with the equipment established a compelling argument. From a trainer perspective the opportunity to have media rich content, dynamically hyperlinked with narrative and reflective commentary can perhaps bring a greater clarity of insight and understanding into emerging professionals' practice and in turn inform my own subsequent teaching (Fox et al, 2008).

Whilst peer review is widely agreed as effective in providing learners with formative feedback I believe the web-based nature also provides several benefits. Firstly, the flexibility in access in terms of time and place. When asked about using the PebblePad Gateways to carry out peer review; 96.4% of a group of 55 PGCE students affirmed that 'completing the review in their own time allowed them to think through their comments more fully' (40% strongly agreed and 56.4% agreed). Perhaps this is due to reviewers being able to work at their own pace? Surprisingly, 74.5% also felt they had 'responded more honestly online than they would have face to face'. A similar number, 76.4% of the group felt this was because they did not need to monitor the emotional reaction of the peers during feedback and possibly modify subsequent comments. Obviously, the statistics above are only crude indicators of factors involved with web-hosted peer review.

Further, familiarity with technology undoubtedly has a relationship with user confidence and subsequently planned action. Therefore, by prompting trainees to engage more frequently and widely with a range of technologies to complete the e-portfolio school-based tasks, a by-product will be increased familiarity with a growing range of technologies. There is acknowledgement that integrating e-portfolios into teacher education allows students to develop their technology skills (Peters et al 2006). Respondents in the 2007 ESCalate survey of Higher Education Institutions, "felt the use of e-portfolios in teacher education provided greater variety of the types of evidence students could include, while at the same time encouraging learners to develop IT capabilities and an appreciation of e-learning that could be carried forward into classroom practice" (Young and Lipczynski, 2007). As a trainer the aim is to 'constructively integrate technological knowledge with their pedagogical knowledge' (Katic, 2008). As a researcher, the "chronicling of trainee teachers' ideas and experiences creates a tangible record of how technology has shaped our educational culture" (Katic, 2008).

Key points for effective practice
With trainee teachers, as would be the case in nursing and other professions, often the subject matter under discussion is potentially vulnerable individuals, in this case children. A great deal of prior thought went into creating rigorous safeguarding protocols relating to digital capture, storing and sharing of any classroom based materials.

At the outset I challenged everyone to use at least two digital media on each page of their e-portfolio; for example, text, video, graphics, animation and/or audio. At first many students were very apprehensive, a few resistant, but the outcomes have been fantastic with many students feeding back how proud they are of their new communication tools and how useful these are going to be in engaging young learners in the 21st century primary classroom.

Conclusions and recommendations
An extract from our University of Worcester Primary PGCE External Examiner report in 2009 provides a useful summary:

"ICT's use of an electronic portfolio was particularly impressive. Use of multimedia data collection of children's learning in school not only provided examples of the impact of the students' teaching, but also exemplified how the students' own use of ICT software had developed […]The electronic portfolio framework provided sufficient structure without negating the freedom for students to construct their own personalized responses" (PGCE External Examiner 2008-2009).

Additional information:
Link to current instructions and guidance:
http://pebblepad.worc.ac.uk/viewasset.aspx?oid=73608&type=webfolio

References

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