

Developing tools to support work based competence development: e-Portfolios and apprenticeship

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Summary: There is increasing interest in the development and implementation of e-Portfolios in education and training. This paper explains

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Introduction

There is increasing interest in the development and implementation of e-Portfolios in education and training. E-Portfolios are seen as offering significant pedagogic innovation, as providing a vehicle for authentic assessment and providing a record of life long learning. However, the major focus for e-Portfolio development and implementation has been in Higher Education and there appears to have been little take up in vocational education and training, still less in apprenticeship programmes.

This might be seen as surprising, given that apprentices have often traditionally produced a portfolio of their work. We can only speculate on why there has been such a slow take-up. It may be that funding for technology enhanced Learning has been focused on the higher education systems, that trainers are not confident in the use of computers for learning or that traditional pedagogic approaches in the vocational education and training sector have hindered innovation.

We have worked on developing an e-Portfolio application over the last year and are presently involved in two major trial implementations. We have also taken part in the European funded MOSEP project training teachers in the use of e-Portfolios and have co-edited a book on the subject (Attwell et al, 2007). This paper reflects our empirical research and development in the field. In our opinion e-Portfolios have probably more potential in vocational education and training – and particularly in apprenticeship – than in general education. The reason for this will be outlined in this paper. We also believe that e-Portfolios can act as a transformative tool for the modernisation of apprenticeships. However, before we examine these issues, we will provide a short introduction to e-Portfolios.

What are e-Portfolios?

There is no agreed single definition of an e-Portfolio. Helen Barrett says:

"A portfolio is often defined as a purposeful collection of student (or teacher) work that illustrates efforts, progress, and achievement in one or more areas over time. An electronic portfolio uses digital technologies, allowing the portfolio developer to collect and organize portfolio artifacts in many media types (audio, video, graphics, text). A standards-based portfolio uses a database or hypertext links to clearly show the relationship between standards or goals, artifacts, and reflections. The learner's reflections are the rationale that specific artifacts are evidence of achieving the stated standards or goals. An electronic portfolio is a reflective tool that demonstrates growth over time." (Helen Barrett, 2004; 2005).

Scott Wilson has added his definition:

An e-portfolio „is a repository of information about a particular learner provided by the learner and by other people and organisations, including products in a range of media that the learner has created or helped to create alongside formal documents from authoritative sources, such as transcripts of assessed achievement, which the learner has chosen to retain.” (Wilson, 2005).

The idea of portfolio based learning is not new. In many vocational and practical subjects there is a long tradition of producing and demonstrating artefacts developed through participation in a learning programme. It could then be said that the development of e-portfolios is merely the utilisation of digital technologies for the recording, storing and retrieval of such artefacts.

E-portfolios could be defined as a process, rather than just a product or a technological system.

In a video interview Roger Ellen (undated) sees e-portfolios as an "approach to students and an approach to learning – a way to involve students in their own learning, to give students the key, to give students the language of learning – what they learn and how they learn – it is an empowerment strategy."

Ellen refers to the "3Ps" of portfolios:

- Product
- Process
- Progression

To this we would add a fourth 'P'; that of pedagogy. E-portfolios may best be seen as a pedagogical process: as an approach to teaching and learning.

What could e-Portfolios bring to apprenticeship?

As we said in section 2 of this paper there are many different definitions of e-Portfolios. Our belief is that e-Portfolios represent primarily a transformative pedagogic approach. This section of the paper reflects that viewpoint.

Bringing together learning from different contexts

e-Portfolios have the potential to bring together learning from different contexts. This is particularly important for apprenticeships which in a dual system context have often suffered from a lack of co-ordination between school based provision and work based training. More important than administrative coordination is curriculum and pedagogic coherence. E-Portfolios have the potential to link the content of learning from different contexts. Thus they can bring together practice (work based) learning and theoretical (school based) teaching. Furthermore e-Portfolios can provide for the recording of and reflection on informal learning – not just as a stand alone item – but in the context of other forms of learning.

Reflecting on learning

e-Portfolios can be a powerful tool for reflecting on learning. Jonassen, Peck and Wilson (1999) argue that ICT supported learning is only useful (effective and efficient) if learning is active, constructive, reflective, intentional, authentic (contextual and complex), conversational and interactive.

Active learning means that learners are actively manipulating their learning environment and observing the effects of what they have done. In this way, learners are responsible for the results of their learning.

Meaningful learning implies actions, but actions are not enough. Learners have to reflect on their actions and their observations. These reflections could or should lead to the integration of new experiences and ideas with existing knowledge or should at least leads to insight into what the learner has to learn (constructive learning). It is

this combination of active and constructive learning which makes learning meaningful. Learning is not a result of just practice; learners also have to elaborate their knowledge and skills and create or construct new insights.

The authenticity of the learning environment not only leads to a better understanding of cases or principles, but also results in a better transformation of learning outcomes to other cases and contexts.

To make a learning environment authentic, it should include complex and open tasks, as well as simple ones. Like in the 'real' world or job-related practice, people work together and interact in order to learn, and solve problems. Cooperation between learners (both collaboration and conversation) is seen as important as a goal of learning as well as a mean of learning other content.

Within apprenticeship e-Portfolios provide a tool for reflection on authentic work based practices.

Recording and assessing learning

e-Portfolios can be designed to support a wide range of multi media applications. This is important for a number of reasons. Firstly many vocational learners are not confident in the use of text as a means of recording and reflecting on learning. And, in this context, it is interesting to see the rapid development of Web2.0 tools for exchanging a wide range of different digital artefacts including audio, video and photographs. Secondly for apprentices competence is often reflected in the ability to make and do things. Such competence can best be captured or recorded through digital artefacts rather than through textual explanation. Furthermore the ability to access an e-portfolio from a mobile device, PDA, telephone, digital camera, means learning can be recorded where it happens, in the workplace, rather than relying on subsequent recall.

This will in turn allow the development of authentic assessment practices, rather than relying on simple written tests which provide little indication of an apprentices competence. It could also provide a basis for moving from assessment of learning to assessment for learning – to focusing on self and peer group assessment –and to formative assessment as part of the pedagogic process, rather than end testing as a summative procedure.

Lifelong Learning

There is a general understanding of the necessity of lifelong learning in order to deal with rapidly changing technologies and processes of production. E-Portfolios can provide the basis of a lifelong learning record. Furthermore data can be exported for use in different learning systems and learners can provide different views of their portfolio content for different purposes, including applications for jobs or for further education and training.

Once more, what is perhaps most significant is the process of learning, of on-going recording and reflection on activities and actions. This provides the basis for the much cited but rarely explicated lifelong learning competence. One of the major potential benefits of e-Portfolios is to increase motivation for learning.

Networking and communities of practice

E-portfolios allow learners to develop their own social networks and to share their work with peers. As such they can be utilised for group based and project based learning. At the same time the interconnectivity outside the classroom allows integration with wider dispersed communities of practice allowing apprentices to develop their identity as a skilled worker.

Knowledge sharing

E-portfolios can provide the basis of a collective organisational knowledge network, bringing together the practice based experiences and knowledge gained through the apprenticeship process for wider adoption and dissemination within the organisation.

The next steps

Space limitations prevent any lengthy consideration of the next steps in developing e-Portfolios for apprenticeship. In brief, we would advocate the launch of a number of pilot implementations of e-Portfolios in apprenticeship settings, along with accompanying research on the process of implementation. We should also add that since many e-Portfolio applications have been specifically designed for academic provision, the e-Portfolio infrastructure should be developed iteratively, including technologists, researchers, teachers and trainers and learners in the development process.

In such development, there should be an emphasis on improving the teaching and learning process and thus in modernising apprenticeship.

Literature

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