Technical issues for e-portfolios

(Source: Becta, 'E-portfolios – Definitions and directions paper')

Connectivity

The model of e-portfolios … supports many aspects of learning and recording learning. Driving towards flexibility in learning and teaching (through 14–19 reform, personalisation, the extended schools initiative, and the e-strategy) suggests that access to the full functionality of e-portfolios should be equally flexible. It is now much more common for learners (particularly 14+) to learn in multiple locations – for example, in schools, colleges, work-based learning or travelling communities. Not all of these locations have equity of provision to technology, or connectivity. Connectivity should be available through the National Education Network and JANET to provide access to e-portfolios for all communities. The work-based learning environments are a particular issue that will need to be addressed. Otherwise, learners choosing vocational provision may be disadvantaged in their lack of access to a common learning system which their in-school peers enjoy.

Many of the potential uses of an e-portfolio process will require consistent broadband access. Uploading multimedia evidence is already common for those NVQs and Diploma qualifications which use course-based e-portfolios.

Hosting

The pressures placed on a central hosting service to support a lifelong learning portfolio relate mainly to storage space, and the ability to provide a scaleable solution for all learners (potentially all UK residents).

Offering local (institution based) or regional (LEA or RBC based) hosting for portfolios has its own issues. When learners move on to the next stage of their life, or to the next learning provider, does the portfolio remain, and how can the host guarantee access across a lifetime, when all connections with the learner are gone?

Or does the portfolio move with them, how and where? How can the e-portfolio

be supported and distributed once the learner moves out of the formal education system? Who will provide that support? If the portfolio remains with a host institution or education network, who will provide the funding to manage the portfolio? For example, after 10 years, an LEA could be managing tens of thousands of portfolios requiring considerable storage space every year. These are management issues that may compromise the ideal of a lifelong learning portfolio and that need to be seriously considered.

Authentication

The development of e-portfolios will create more pressure for a swift resolution on the unique learner ID in order to ensure transferability and continuity for a lifelong learning portfolio. Learners using an e-portfolio process will require a single sign-on to access every element of functionality. An alternative solution to the unique learner ID, which may be worthy of further exploration, is the potential of the Shibboleth or similar authentication solution. A single user sign-on would enable e-portfolios to be fully integrated into learning. This sign-on could incorporate a unique learner ID at a later date.

There are, however, some existing issues with the Shibboleth system. For example, access rights could not be dynamically allowed for supply teachers. Similarly, if a learner wished to give a potential employer access to parts of their portfolio, the current Shibboleth system would prevent them from doing so unless that employer was a member of the Shibboleth foundation.

Authentication is likely to be one area in which accessibility is key – if you can't authenticate, you can't access provision. As Shibboleth uses the institution's existing log-in system, if that system is not accessible, no services or applications using Shibboleth will be. Personal assistive technologies are regarded by industry as non standard and are susceptible to lock-out by security measures (the RM work on accessibility and e-assessment for QCA in respect of key stage 3 ICT assessment concluded that assistive technologies can only be facilitated by by-passing security procedures. Is that an acceptable risk?)

Browser-based authentication to date has tended to centre around fixed media/format entry/output and this is inflexible/inaccessible, e.g. online banking which requires use of the mouse to manipulate number scrollers, dynamic security code generation 'type in the number from the graphic above' – all have proved largely unsatisfactory for one or more groups of assistive technology users.

Accessibility

There is currently little guidance in relation to accessibility of e-media other than for content. This needs to be remedied before decisions are made to implement online learning spaces or e-portfolios or any other large scale initiative which changes the learning environment. Equity of access is key.

Technical standards and interoperability

We acknowledge that there are many systems currently in use in education that adequately offer elements of the e-portfolio process. We recommend that the

implementation of e-portfolios across education should incorporate these existing systems.

However, all elements of the system must be interoperable. Whatever their provenance, systems need to be able either to export directly in a common agreed format to required specifications, or to be able to provide a two-way 'translation' service (proprietary format into a common agreed format and vice versa).

Technical standards that will have an impact on elements of e-portfolio functionality are developing. UKLeaP and IMS e-portfolio are clearly important here. Other areas are worth exploration – for example, SIF (the US Schools Interoperability Framework) – middleware which defines standards for data exchange and rules for inter-application interaction, enabling for example, an MIS system and a VLE from different suppliers to interact.