THE IMPORTANCE OF ACKNOWLEDGING LEARNING PROCESSES IN ASSESSING THE IMPACT OF EPORTFOLIOS

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Abstract: A team of researchers from the Learning Sciences Research Institute at The University of Nottingham conducted a project commissioned by the British Educational Communications & Technology Agency (Becta) in 2006 to identify the impact of eportfolios on learning. The aim was to identify common themes across a range of eportfolio projects, and to establish dimensions and baselines that could be used for future planning and implementation. The research team chose to focus on selected learning processes related to eportfolio work, particularly recording and storing evidence, planning and organising, reflecting, giving and receiving feedback, collaborating, and presenting and publishing. The results of this study suggested that eportfolios benefit learning most effectively when considered as part of a loosely-coupled set of tools and spaces that support a connected teaching and learning approach, rather than as a discrete entity. This should include online repositories, planning and communication tools, and opportunities for both students and teachers to draw out and present eportfolios at particular times and for particular purposes. The study indicated that, from both the institutional and the user’s point of view, eportfolio development can be undertaken from the starting point of one or more of the learning processes, rather than taking on all processes at once. As a result of the study, an eportfolio maturity model was developed to enable individuals and institutions to identify their progress.

Keywords: formal education, learning processes, fieldwork

Introduction

In 2006 the British Educational Communications & Technology Agency (Becta), which provides policy advice to the Government, commissioned research to identify the impact of eportfolios on learning across all sectors of formal education. The aim of the project was to establish dimensions and baselines that could be used for future planning and implementation. Specifically, it aimed to provide advice on the potential of eportfolios for learning; which aspects of existing projects had an impact on learning; and whether these were transferable. A team of researchers from the Learning Sciences Research Institute at The University of Nottingham conducted the project over a period of six months. At the outset it became evident that while the use of the term eportfolio was not widespread, individuals and institutions used learning platforms and online spaces to support the processes that were the focus of the study.

Research Methods

The research used mixed methods including document analysis, surveys, site visits and interviews to achieve its aims. Eight case studies had been suggested by Becta, including primary and secondary schools, Further Education (FE) and Higher Education (HE) institutions, and junior doctors in the National Health Service (NHS). Each researcher took responsibility for researching and documenting at least one case. An online survey was developed for students and teachers, to gather data and responses to a set of statements on a 4 point Likert scale. These statements are found in the appendix to the full report (1). Several open-ended questions were also included, and 172 responses were received. The data from each case study, and the survey responses, were coded and analysed to identify material relating to the broad themes of the research, and other emerging themes. The report aimed to provide sufficient descriptive data to make judgements possible by policy-makers and other audiences, but argued that examples of good practice should be documented even if they existed in small pockets, to identify ‘what could be’, in addition to ‘what is’ (2).

In addition, the research team set out to develop a draft eportfolio maturity model, based on work done by Underwood and Dillon (3). A maturity model is a profile based on a set of text descriptors
that can be used to provide a snapshot of an organisation’s progress. The descriptor set is generally
developed in three stages, but given the time constraints, the team worked on the first stage only. The
researchers drew upon a bank of 67 descriptor sets for reporting on a wide set of policy and user
issues relating to the use of ICT in educational settings (3). Although most of the items in the existing
set were not included for the eportfolio model, since they related to contextual and background
factors, a few were retained.

At two half-day workshop meetings, research team members and project consultants worked together
discussing relevant thematic areas, and these discussions produced a number of draft descriptors. At
two subsequent workshop meetings involving research team members, these descriptors were revised
and new ones formulated to take account of emerging findings from two other sources: the project
team’s case study data, and the data from the online survey of eportfolio users (and some non-users).
Finally, the seventeen sets of descriptors that emerged from these rounds of development were shared
with Becta colleagues, and went through a final round of revisions to increase clarity, sharpness of
focus and comprehensiveness in relation to the project’s research goals. The model is found in the
final report (1).

Findings

The results are presented under the process headings used by the research team to analyse the data for
the final reports (1, 4).

Engagement and motivation

Engagement can include physical attendance, social interactions with teachers and other learners, and
involvement in activities. It can be measured by observation, usage statistics and reports from
participants. In the case of eportfolio development, both engagement and motivation can be affected
by access to suitable technology. According to many teachers, the motivation to use the eportfolio
systems provided in each case was closely related with motivation to use ICT in general. There was a
range of engagement within each project, with school students appearing engaged in several
dimensions. Most institutions did not analyse the usage statistics to identify trends, and their
responses were generally in terms of perceived usage, attention to the task and interaction with other
people through the software.

In one FE college, a teacher reported that the visual aspects of working with ICT, as well as the
reassurance of a safe environment for eportfolio development, assisted some students to become
engaged in their work and motivated to produce new material. In contrast, doctors engaged with the
eportfolio process as it was a requirement of their programme: ‘…so it simply has to be done.’

Primary students were very enthusiastic about using the school website for storing, collaborating on
and presenting their work. Generally, they found it ‘fun’, and agreed that they became more interested
in their work. Among FE and secondary students, the survey results from students who ‘have created
an eportfolio’ (n = 66) were intriguing. Although fewer than half found it fun, or that it made them
more interested in their work, more than half indicated that they would like to use an eportfolio in
future. (Note that the use of the word ‘fun’ in the question is likely to appeal more to primary
students.) A small number of teachers, on the other hand, generally felt that working with eportfolios
had been fun for their students, as well as making students more interested, with 77 % agreeing or
strongly agreeing with these statements.

In general, then, it seems that teachers believed the students were enjoying this use of ICT, while
students were less enthusiastic. However, many students were quite pragmatic, realising that they
should use such tools for planning, storing and reflecting on their work. Where students see a
connection with their current and future lives, motivation will be relatively high. Where the activity is
mandatory and high-stakes, as in the case of the junior doctors, it is likely that it will be taken up
anyway.
Goal-setting and reflection

Goal-setting and reflection are intertwined processes that support learning, and were clearly part of the purpose of the eportfolio work in several secondary and FE settings. Setting goals requires self-knowledge as well as knowledge about the possibilities ahead, whether pertaining to curriculum, employment or personal growth. It also requires personal organisation to achieve the goals. The software tools provided in some cases, such as calendar, archiving and blog-type tools, facilitated this process.

A FE tutor explained:

‘We give students a model to reflect: to look at what happened to them, why did it happen, what could they do in the future. We encourage them to upload an action plan, to continually look at their development… maybe what they’ve already achieved, or by going on a course. Some students commented in the survey that they learnt how to set targets and keep track of their work, adding, however, that it took ‘ages’ to do. In another college, a reflective student saw the potential as a long-term tool and suggested ‘it would be good to look at your grandmother’s portfolio’.

According to one assistant head teacher the digital repository particularly assisted ‘fragile learners’ (such as disorganised or borderline students) to organise themselves, and to avoid losing the evidence of work they’ve done. Here too, support was provided for reflection, especially within the Certificate of Personal Effectiveness, which encouraged students to practise the skills associated with reflection. Tutors in the NHS project stressed that reflection is central to a doctor’s culture and that it should not be something that needs strong cultivation: it arises out of what they routinely do. However the NHS eportfolio project was relatively new, and a manager suggested that there had not been enough time to integrate a culture of recording reflection: ‘The doctors themselves are interested in ticking the competency boxes and when they are in the middle of the range they are not yet asking how they might progress.’

Survey data showed that eportfolios helped students think more about their own learning to a greater extent than using an online space only, although the distinction between the two terms was somewhat blurred. In spite of the large number of students using an integrated planning system, slightly less than half of all FE and secondary students valued the planning functions, perhaps hoping for more long-term planning help. As one student wrote:

‘I would like more help on how to be able to make plans on the website, to help with organising myself a little better with my work. I would also like more guidance in what I would like to do when I am older and what I want to achieve.’

All the teachers in the survey claimed that eportfolios helped them think more ‘about learning in general’, while most teachers claimed it helped their students be better organised.

Feedback and collaboration

One of the claims made for virtual learning environments and learning platforms is the capacity for both collaboration in social learning and feedback, an evaluative activity that can support assessment for learning. This can involve students, teachers, parents and experts within and across institutions. In many schools, pupils, teachers and experts used the forum capability of the learning platform. One teacher said: ‘The forum is good for assessing what the children know… everybody discusses as well, even the quiet ones.’ Another went further, describing how students worked with people outside the school through the learning platform, as a means of stimulating topics in the curriculum as well as being reflective of class activities.

An ICT co-ordinator saw the value in crossing boundaries between home and school:

‘It’s a great way for children to share work and collaborate with children in other schools. The children are able to continue their learning and share work with their parents. It helps the parents to understand better what the children are doing in school and works to build greater home-school links. The children become more interested in the world around them and enjoy having a platform to share their work and show what they can do.’
Out of school, primary and secondary students collaborated with friends and others in and outside their schools using more open software such as instant messaging, social networking sites or email. Some FE students felt that blogs were easier to use than their institution’s software, but that they were social software and therefore not suitable for formal contexts. They had used these intermittently and were not regular users. They commented:

‘MySpace is more for your personal enjoyment than for professional use as an eportfolio would be. An eportfolio is more for applying for universities. A blog or MySpace is more for your friends to look at, where you put your photographs of your holiday and that sort of thing.’

The FE students generally did not collaborate in their institutional online spaces, whereas school students tended to work together on projects.

The survey data revealed some very positive responses in areas related to feedback and collaboration, with slightly more positive responses from students working in school and college websites (62% positive compared with 50% using eportfolios), indicating perhaps that eportfolios are often seen and used as individual spaces. Students tended not to see eportfolios, individual learning plans or progress files as ways to see what their friends were learning. This might also point to concerns about privacy and ownership, which are important issues in this area. Students would have to trust others with personal information, especially when they might be competing with their fellow students for jobs or university places.

The potential for eportfolios to support feedback is very high. Furthermore, the potential for collaboration between teachers and their students, between students and their peers and between parents and experts is provided through linked virtual learning environments, with the proviso that it should always be the learner who decides who may see particular material, sometimes in negotiation with teachers. What eportfolios add is a repository where the knowledge created through collaborations can be stored for later referral.

Storing and presenting evidence

Many of the purposes of eportfolios involve presentation of evidence to an audience, whether for celebration or assessment, or for applications to institutions and employers. The study found that the content of the web spaces, in most cases, was course or curriculum-related, although evidence of outside activities was clearly encouraged in some instances. In the primary settings, teachers tended to collect a great deal of visual evidence by using digital cameras. One teacher held conversations with individual 3-5-year-olds about the contents of their repositories, leading to diagnosis of strengths and weaknesses. Many students used personal equipment in addition to, or instead of, the school resources and, in some cases, have more experience than their teachers. One said:

‘I’ve got records of achievement, certificates and that for GCSEs and stuff, but my house was trashed and I lost all my certificates so I had to go back to AQA to get them. If the eportfolio is accessible and has the certificates, and this is accepted by universities, then brilliant! I don’t need to keep the proof.’

Eportfolios for presentation and publication can provide teachers with valuable information about their incoming students, as a means of supporting personalisation, among other things. A primary school teacher suggested:

‘We’ve used presentation software, and they will upload these eportfolios onto the school website, so hopefully for the transition from Year 6 to secondary, they will be able to show just what they can actually do. We find with any sort of changes within the key stages there tends to be a drop to begin with, because of the under-estimation of what they can do.’

This drop in achievement and engagement in connection with transition points has been noted previously, but might be overcome with increased communication between phases.

However, many students did not think of eportfolios in terms of presenting and displaying work to an audience, perhaps due to the specific purposes of the cases studied. Eportfolio audiences include current teachers, parents, future teachers, admissions officers and employers. Even where the notion of presenting to an audience was acknowledged, there was little discussion of who the eportfolio
audiences might be outside the current institution, or the possibility that there might be several different audiences with different interests.

**Attainment**

All institutions had been making efforts to improve the attainment levels of their students, but as one secondary teacher said: ‘How do you know which factor did that?’ A secondary college suggested that the eportfolio system assists attainment because it ‘removes some of the barriers to learning’, specifically some individual students’ inability to manage learning resources in hard copy form, or set and meet deadlines.

A sixth-former reported that since using the learning platform she had raised her grades in textiles significantly, while a Year 4 student claimed that using the school space had helped him to move from one of the bottom groups in Year 1 to one of the top groups in Year 4. For the doctors at the other end of the spectrum, the eportfolio was also used to formalise evidence of achievement, principally for their tutors, and in this regard was seen as a valuable device to meet their assessment requirements.

While the capacity was not yet exploited, some eportfolio software tools can be linked with student management systems to log and store numerical and other attainment data that would assist students and teachers to track their progress.

Although one FE student commented in the survey: ‘To be honest I haven’t learnt anything from using the eportfolio that I didn’t already know’, the survey results tended towards a positive response to using eportfolios to assist learning.

The potential for eportfolios to support attainment is linked to the learning processes discussed above. It is also likely to be influenced by the connection of eportfolios to other ICT supports for learning. It seems that eportfolios make the evidence of attainment more obvious, in a range of media formats, to both teachers and students. This transparency can have the effect of giving the learner more control over their learning, and planning for future growth. A further benefit of eportfolio systems, little used in the cases studied, is in tracking attainment measures for the purpose of individual planning, and, for institutions, in addressing curriculum and pastoral issues among cohorts of learners.

**Progression and retention**

Progression and retention are key aims of the Widening Participation agenda in the UK (5), which seeks to increase the involvement of a wider range of students in Higher Education. Most of the cases reported here had been using eportfolio systems for a short time and did not provide data on progress and retention, and most tutors were reluctant to suggest that eportfolios alone were the cause of any improvement: However, in one local authority in the study, the overall pattern of participation in post-16 education was already beginning to show significant improvement, with participation in full-time courses rising from 69% to 77%, higher than the national increase. Within a lifelong learning framework, data from the earliest years would be useful in tracking progress, so the work being done in primary schools links with high-stakes work done in later years. A loosely-coupled system that includes planning and guidance tools, repositories of evidence and space for creativity is likely to be more successful in addressing a range of learning processes.

**Self-esteem**

The positive effect of eportfolios on the confidence and self-esteem of learners is often claimed, and students and teachers in this study reported instances of increased confidence in using the technology and in approaching their learning. Some FE students said: ‘It is nice to have an area you can put stuff that you can be proud of, like in MySpace’; ‘It makes me feel proud that I took my time to do that bit of work and now people can see what I can actually do’; and ‘I have learnt that everything is possible, all that’s needed is a little patience and some work.’

However, most secondary and FE students did not regard online spaces and eportfolios as areas for creativity. Furthermore, although students tended to ‘understand their work better’ and were ‘pleased with’ their progress, for students other than those in primary schools, using eportfolios and online
spaces did not, in the main, help them to be more confident. This could be due to the extent of feedback and reflection that they have engaged in: more constructive feedback and reflection is more likely to enhance confidence. This points to an important role for teachers and tutors in promoting the social, as well as the instrumental, outcomes of learning activity.

**Conclusions**

In terms of the impact on learning outcomes, the study found that eportfolio processes supported both pastoral or social needs and curriculum outcomes. In light of assessment for learning (formative assessment) eportfolios made progress and attainment more obvious to both teachers and students, because viewing and revisiting the repository of work revealed development, achievements, strengths and weaknesses. There was a tension between facilitating creativity and designing supportive structures for students to enter information.

The researchers concluded that the individual and group processes of capturing and storing evidence, reflecting and planning that many institutions currently encourage—even where they do not use the term eportfolio—have great potential to support future individual or group eportfolio development. There were some learners in all age ranges who found that software that includes structured processes and organisational tools (such as templates for planning, calendars and goal-setting exercises) scaffolded their learning until they were confident enough to progress to working independently. Some valued seeing e-portfolio exemplars before embarking on their own.

![Figure 1: Components of an eportfolio system](image)

While the study found software products that addressed various eportfolio processes, the team concluded that an eportfolio system should be a flexible arrangement, made up of related, but loosely-coupled components that serve the objectives of the learners at a particular time. Figure 1 illustrates the components of a system that includes the repository function, tools that support the processes outlined above, and the capacity to present customised eportfolios to various audiences. The repository for an individual could be distributed across several locations, linked by aggregating tools as required (6). Tools could be freely available, open source, institutional or otherwise, but must
support learners’ needs to engage in various processes that support learning at different times. Further, the study concluded that learners could start eportfolio development through embarking on any of the processes, depending on their current needs and purposes, gradually adding to their experiences. The impact on learning is likely to flow from the extent of engagement in these processes, making simple statements about the ‘impact of eportfolios on learning’ too superficial to be helpful.

References


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