Student perspectives of eportfolios: A longitudinal study of growth and development

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Electronic portfolios (eportfolios) offer different ways to support learning through their capacity to collect evidence and demonstrate development, especially over time. Their potential ability to support reflection and learning and to respond to assessment and evaluation settings across a range of settings suggests their value for formal study and lifelong learning contexts. This technology has come to prominence as one of the new Web 2.0 technologies and much of the literature to date provides accounts by teachers of the introduction of eportfolios, there being far less research which places students and their experiences at the centre of the investigation. This paper describes the establishment of a longitudinal study of student perspectives and discusses some early data.

Keywords eportfolios, e-portfolios, research, Mahara, Web 2, undergraduates

Introduction

Eportfolios are a new learning technology which is attracting significant interest from educators. Ravel refers to "effecting a quiet revolution in the world of learning" (2006, p.xxix) and Stefani, Mason and Pegler (2007) argue that there are now enough early adopters of eportfolios to indicate the potential of this technology which they describe as transformational (2007, p.20). Eportfolios are becoming part of national policy frameworks and international developments and their proliferation in universities means that they are increasingly a part of blended learning environments. Owing to the relative newness of eportfolios, evidence of their effectiveness is just starting to appear in the literature. However, student perspectives are not often featured in such reports. This paper describes the establishment of a three year longitudinal study of such perspectives and presents some early data.

Background: Eportfolios for learning

Eportfolios are a highly flexible technology which has a breadth of applications, including supporting learning in formal settings at all ages, promotion and career development, professional evaluation and registration and institutional review and accreditation. At its most basic level, an eportfolio is a digital container which is able to store a variety of digital files including text, video, images and sound, which can also be used to support a variety of pedagogical and evaluation purposes (Abrami and Barrett, 2005). The eportfolio can therefore act as an archive which learners can use as evidence of their development, as a basis for reflection on their learning, giving and receiving feedback, planning and setting goals, collaborating and presenting to an audience for various purposes, such as celebration, showcasing achievement, and employment (Joint Information Systems Committee, 2008, p.7).

However, eportfolios are both a technology and a pedagogy. They draw strongly on an existing portfolio pedagogy which has been developed extensively as a paper-based process, especially in teacher education. Darling (2001) discusses the differences between the portfolio as a process and a product and notes that, for students, the portfolio may be a challenging experience as they document their emergence as teachers through their professional portfolio narratives. The process/product distinction has been adopted by Barrett in her work (Barrett, 2005) and it now appears that there is a consensus that an eportfolio comprises both dimensions (Joint Information Systems Committee, 2008). Recognising the connection to an existing portfolio pedagogy and research base is important in considering eportfolio developments.

Eportfolios differ from learning management systems through their ability to offer a personalised learning environment and this and their ability to support social networking locates them within Web 2.0 technologies. They are learner controlled and this facet has prompted some writers to argue for their potential to support student-centred and constructivist approaches (Lin, 2008). Others have drawn attention to the ways in which eportfolios can support self-regulation and self efficacy (Abrami & Barrett, 2005) and their ability to connect real world contexts to graduate outcomes through such activities as the collection of artefacts, reflection, and feedback, this providing more authentic forms of learning and assessment for students (Emmet, Harper & Hauville, 2006). A recurrent theme in the literature is the way in which eportfolio pedagogy can facilitate reflection, which has now come to be recognised as significant in the learning process (Abrami & Barrett, 2005: Stefani, Mason and Pegler, 2007; Lin, 2008).

Apart from those published in the Jafari and Kaufman Handbook (2006), our search of the literature has indicated 18 reports of research studies of student perspectives. Most of them investigate undergraduates and 12 of them were situated in teacher education contexts. One of the earliest reported studies was that of Tosh, Light, Fleming and Haywood (2005) and was carried out with 544 undergraduates from two universities who were using eportfolios for the first time. Students had difficulties understanding the technology, too much time was required, support was insufficient and the workload was too high in relation to their assessment returns. Also, there were issues around motivation and 'buy-in', which were reflected in high levels of ambivalence about the value of an eportfolio. In contrast, Wetzel and Strudler's (2006) case study provides student perspectives from mature practice settings (used for two years or longer and programme wide) and is based on data gathered from 48 students and 13 graduates from six universities. The students described similar costs to those of Tosh et al (2005) and also identified benefits around the value of reflection, of learning new technology skills, and measuring their growth as learners. The researchers concluded that the costs from a student perspective were substantial and had to be considered and that what was important was understanding what made eportfolios meaningful and worthwhile for students (2006, p.26).

Lin's (2008) study of 38 undergraduate teacher education students reports positive student attitudes to eportfolios. Many benefits for learning were identified including the value of revisiting experiences through reflection, developing self assessment skills, discussion and feedback from peers and learning how to organise and synthesize. However, these results need to be considered in the light of the tradition in teacher education for reflective practice and the fact that the eportfolio sat at the centre of a course on ICT in Education. A recent study is that of Lopez-Fernandez & Rodriguez-Illera (2009) which was carried out with 88 undergraduates at two Spanish universities. Over the course of the semester, students developed more positive attitudes and confidence and identified the main advantage as having a private virtual leaning environment which was well organised and structured around their course. While this might represent an improvement in management of their learning and possibly more autonomous learning, overall, students perceived few learning advantages relating to the eportfolio itself.

The literature that we have discussed above illustrates that there is gap between visions about eportfolios and the reality of the student experience. At this stage, educators see eportfolios in terms of learning potential and students often see them in terms of challenges rather than benefits. More research is needed to understand student perspectives to improve practice and efficiency (Wetzel & Strudler, 2006) and to develop portfolio learning habits that students can use in lifelong learning contexts. Much of the existing literature is driven by institutional and teacher perspectives (Lin, 2007) and needs to be balanced by the addition of student voices. Lopez-Fernandez & Rodriguez-Illera (2009) characterised their work as pioneering empirical research in this area and called for research which would focus on the value of the eportfolio itself rather than having to also consider the impact of a technological innovation.

The research study

Aims and rationale

The aim of this research is to investigate student experiences of an eportfolio and the ways in which it helps or hinders them in their learning. The research outcomes will contribute to pedagogical knowledge in the area and have the potential to improve practice and policy regarding an emergent and complex technology and pedagogy. The research will also add to the technology change literature by providing student perspectives on this innovation. The research questions are:

1. How do students experience an eportfolio?
2. How does an eportfolio help students to learn?
3. What hindrances or challenges are there for students when they use an eportfolio in their learning?

Context

In 2009, the Faculty of Applied Humanities, supported by a Teaching and Learning grant, introduced eportfolios to three of its undergraduate programmes. This built on earlier work in 2007 when the School of Education had participated in a Tertiary Education Commission (TEC) funded implementation of the Mahara (Eduforge, 2007) eportfolio. Each programme has introduced the eportfolio to selected groups of students and its use is embedded within the work experience/ practicum component of the degrees and is assessed in only one of the programmes. Workshops were available for lecturers and covered both the concept of an eportfolio and the specific skills associated with the eportfolio software. Further assistance was also provided by the faculty's Flexible Learning Adviser. Each lecturer introduced the eportfolio to their students and included an introductory tutorial on using Mahara. A video on the Mahara website was also recommended to students and some lecturers created customized materials for their particular course and activities. This research project is situated within this faculty development.

Methodology

The project has been designed as a descriptive longitudinal study over three years. Such studies are useful to document practices, beliefs, activities and trends over time and are therefore valuable in examining innovations and their impacts (Cohen, Manion &Morrison, 2000). In this study, the perspectives of successive undergraduate student cohorts will be investigated over six semesters (three years), this enabling us to document student perspectives over time regarding the eportfolio technology and the associated psychological and pedagogical issues. Over successive semesters, teachers may act on the findings to refine their practice and the learning environment for students. As often happens with technology innovations, the passage of time will also mean that eportfolios are likely to become more embedded within the learning culture and with this maturity, it may be easier to focus on student perspectives of the learning value of eportfolios. A mixed methods approach will be used comprising a questionnaire, and complementary interviews, focus groups and content analyses to interrogate the research questions according to the findings and interests of the research team.

The foundational component of the longitudinal study is a survey of students every semester to build a picture of student perspectives over three years. The survey will begin by providing a baseline regarding student perspectives from which we can then chart developments. We have adapted the questionnaire used in the Australian eportfolio Project (Hallam, Harper, McGowan, Hauville, McAlister and Creagh, 2008). We regarded this as advantageous because it had been developed in a reasonably similar context, in a rigorous process and tested as an instrument in the Project. It also offers opportunities for comparison between the two studies. The questionnaire comprises a mix of six entirely closed questions, one entirely open question and seven closed questions with optional space for further comments. Because two of the researchers were teaching the students, the questionnaire was anonymous and recruitment was carried out by a person who was not their teacher to ensure that student participation was voluntary and not influenced by any perceived advantage or disadvantage. The research has also received ethical review and approval.

Some initial findings

At the time of writing, we have begun to analyse the first cycle of questionnaire data. Ninety-eight students (56% of enrolled students) completed the questionnaire; 48 (45%) were enrolled in Education, 29 (30%) Hospitality & Tourism and 21 (21%) Languages. The students were predominantly female (n=84). For 67% of the students, this was the first time they had used an eportfolio and 87% of them had a web presence through Facebook or a similar social networking site.

In this limited space, we present two findings:

- the greatest challenge was being able to use the technology. This question was open-ended and was answered by 80 students (83%). Thematic categorization of the students' responses indicated that the main difficulties referred to understanding what the software did, navigating it, creating views, and the time involved in using it.
- few students recognized the learning value of the eportfolio. Table 1 below shows students responses to a question about the value of the eportfolio.

The most positive response (at 66%) related to storing examples of coursework, that is as a file repository. The statements that indicated the most negative response (at 36% and 33%) related to accessing coursework and assessment items, becoming an independent learner and preparing for future

Table 1: Student responses regrading value of the portfolio

Question: To what extent do you think the eportfolio has helped you with your current courses?"	Strongly Agree + Agree	Neither A nor D	Strongly Disagree + Disagree	Skipped Question
Provided a place to store examples of coursework	66%	19%	13%	2%
Allowed me to evaluate and reflect on my learning processes	40%	33%	26%	1%
Allowed me to keep track of learning experiences and be able to reflect on any weak areas	33%	34%	29%	3%
Allowed access to all my coursework and assessment items	28%	34%	36%	2%
Allowed me to store examples of my extra-curricular activities relevant to my future career	24%	38%	32%	6%
Helped me become a more effective and independent learner	26%	38%	33%	3%
Helped me organise my work to prepare for future employment	29%	36%	33%	2%

employment. There was little recognition of the role of the eportfolio in learning regarding reflection, keeping track of learning experiences and becoming a more independent learner (at 40%, 33% and 26% strongly agreed/agreed respectively). While in all of these three categories, there were fewer students who strongly disagreed or disagreed with the statements (at 26%, 29% and 23% respectively), the number of undecided students was high at 32 – 38%.

These early findings are well supported by the literature, especially that regarding adaption to new technologies. Brown (2000, p.26)'s description of this process as time triangles is useful here. The triangle depicts the use of time by new students across activities such as becoming familiar with the technology, pedagogy, content and engaging in community building. Initially, the triangle depicts students spending most of their time becoming proficient with the technology so that there is only a small space for other aspects of the course. In time the triangle inverts, with veteran students spending only a small amount of time with the technology and most of their time on the other three aspects of the course. The data so far illustrates this and indicates the difficulty (now) of researching the value of the eportfolio away from its impact as a technological innovation as Lopez-Fernandez & Rodriguez-Illera (2009) discuss.

The technology challenges also reflect those identified by Tosh et al (2005) and Wetzel & Strudler (2006). The emphasis on the pragmatic aspects of eportfolio (eg as a file repository) rather than value for learning mirrors the findings of Lopez-Fernandez & Rodriguez-Illera (2009) and provides important information for teachers with regard to future work with students. The high number of undecided responses confirms the ambivalence found by Tosh et al (2005) and may indicate that more attention is needed to ensure that students understand the purpose of eportfolios (Stefani, Mason & Pegler, 2007) and their need for further learning support.

The research studies of Wetzel & Strudler (2006) and Lin (2008) indicate that over time, students can recognise the learning potential of eportfolios. However, it appears that initially becoming confident with the technology is the main challenge and only when this is addressed can attention be given to supporting students in their development of new habits of learning based on portfolio use. More longitudinal research is needed to better help students to begin to integrate eportfolios into their learning landscape.

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