

EPS in the

School of Education

University of Southampton

<http://www.pgce.soton.ac.uk/eps>

In 2001, before the term “e-portfolio” was common parlance there was a perceived need to enable teachers in training to save, store, present and archive their electronically-based work so that it could be assessed by tutors. A number of alternatives were considered but none met the criteria determined by the tutors and mentors at the time (Appendix A). A Teacher Training Agency (TTA) Grant was used to design and implement an online system for trainee teachers to save evidence of their activities. Initially, the system was to be used for those training to be ICT teachers but it was made open to all subject areas and teachers attending the Masters programme. Over the years, its use and value has changed and, through the support of the Teacher Development Agency for schools (TDA), the system will continue to develop.

“The Electronic Portfolio System, based upon technology used widely on the internet, provides our teacher trainees and students with easily accessible space to save work they wish to submit for examination. EPS enables tutors and mentors to access trainees' and students' work for review and assessment from any computer that is attached to the internet” (March 2001).

Principles

The principles underpinning the original and developing features of the system were established before the coding began but can be summarised in this single phrase:

protected, easy, open, secure, free access to locally stored folders

The features of the system have grown organically as a consequence of technology changes and by tutors and mentors identifying affordances. The principles remain intact and guide the development process.

To ensure **open** access from any computer it is important that the system is not based upon desktop or hard drive limited systems, local area networks or intranets. It needs to have internet accessibility. To ensure that it is **easy**, the shortest available URL was established: <http://www.pgce.soton.ac.uk/eps>. This gateway is common for all users (trainee teachers) and enables the trainees and their mentors access to the relevant areas and facilities.

Another aspect of **open** access is the vulnerability to firewalls. Many schools employ filtering systems at network, school and local authority levels to block file transfers (FTP), chat (IRC) or Samba ports. The system needs to use common port 80 HTTP access. A further aspect of openness relates to access

by mentors in schools. A system based upon a commercial VLE will probably have restrictions upon or costs associated with extra users, particularly users who are not students. For this reason we were forced to reject the University-based virtual learning environment (VLE) which could not provide a **free** service to our partnership schools.

In the principles phrase, the word **local** refers to the location of the data being stored. Because the data is associated with a person and because that data is being used for assessment purposes then the storage must comply with the Data Protection Act (OPSI, 1998). The policy and procedures ensure that the data is not excessive (Principle 3). Only information that the user chooses to submit is stored on the system. The name of the owner of the work is recorded alongside the files but no other personal or professional information is recorded on the server. The folder name is in the format forename.surname with no spaces. The data is kept up-to-date by the user (Principle 4) and the tutor cleanses all accounts on the system after University Senate has approved the award for the work (Principle 5). The data is stored on a **local** and **secure** server within the University of Southampton (Principle 7) with 24-7 internet access with that data being only accessible by authorised users. The implications of the Computer Misuse Act (OPSI, 1990) require that there is a **secure** subscription, username and password system being implemented so that we do not expose users to the possibility of carrying out unauthorised activities. The server and its data is physically **protected** because of its location within the University. The data is protected by a regime of scheduled backups and appropriate archives. The data is **protected** from unauthorised access by username and password protect at folder level on the server.

The word **open** also refers to the HCI (human computer interface) or users' experience when using the system. A pedagogic requirement is that it should demonstrate the principles of upload and presentation in the clearest format possible and therefore accommodating the least skilled user by keeping the core facilities **simple**. The enrol process is through a single access point providing an opportunity that is independent of University enrolment or membership. There is a **simple** upload process based upon the process of browse-select-submit. At the simplest level the user has a single online folder into which they place any resource of any file type. Those resources become instantly available across the internet to themselves and his/her tutors and mentors.

Financial considerations are important and the **free** element refers to the enrolment of individuals regardless of University or Partnership status. However, there is a cost implication for the development of the online service and its on-going maintenance and 24-7 availability. The underpinning software is open-source and therefore free to use. However, the skills and experience of the programmer have to be paid for. The HCI design and the specification of facilities are free - they arise from the professional responsibilities of the tutors and mentors - there is no consultancy expense associated with the development. The server is a basic computer attached

directly to the University network and located in the office of a member of the technical support team. There are cost-benefits because of the use of the existing University infrastructure.

Processes

Trainees subscribe to the system providing their own username and password with an email address for correspondence. This is similar to many systems they will experience when working on the web and gives an opportunity to reinforce good habits with regard to security and password management. Trainees are given two URLs to access their portfolio. These are complex URLs because they uniquely identify the location of the portfolio on the internet. However, most users retain the email and simply click on the highlighted link.



One of the URLs enables management whilst the other reveals the contents in the same way as any resource on the web. For example,

http://www.geodata.soton.ac.uk/rgse/fmanage/Information_Technology/darren.smith enables Darren and his tutors to “see” his portfolio as if it was a website. For most users, this simply looks like a list of folders and files, but Darren is a member of the Information Technology group and has included an index.htm file. The URL reveals a conventional website “homepage”.

Darren Smith

My home page



[Sailing](#)
[At home](#)
[Teaching](#)
[Travelling](#)
[Contact me](#)

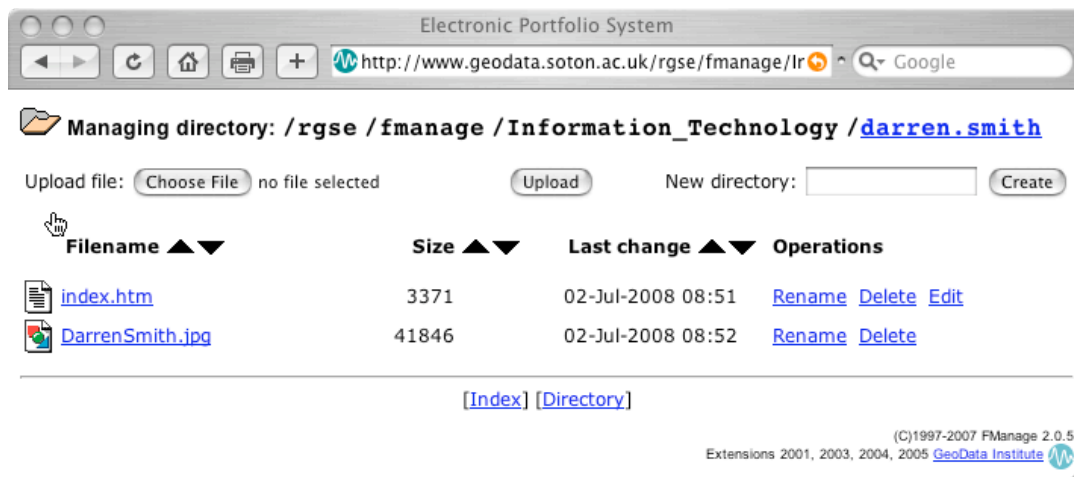
Index of /rgse/fmanage/Geography/andy.ne

Name	Last modified	Size	Description
Parent Directory		-	
Anonymised_Class_Record_Keeping.xls	03-Jun-2008 20:59	38K	
ICT_Tasks/	29-May-2008 15:05	-	
SBA/	16-Mar-2008 19:45	-	
SKA/	06-Jan-2008 13:22	-	
Schemes_of_work/	21-Apr-2008 20:14	-	

Apache/2.0.52 (Red Hat) Server at www.geodata.soton.ac.uk Port 80

An example of a website, Darren using an index.htm file and Andy’s portfolio without an index.htm file.

The other URL provided goes to the same user folder but presents the file management opportunities.



In summary, at the simplest level, trainees can create a set of files of any type. Trainees can create a folder structure with each folder and subfolder containing files of any type. A more advanced user can include in the folder an index.htm file. The folder and subfolders would then render as a conventional website - the system can be used to introduce trainees to website publishing.

In 2005, further facilities were introduced:

- trainees could create a website or e-portfolio off-line, zip to a single file, upload and it would be automatically expanded and displayed online;
- the single file size limit was increased;
- a form of RSS that notified the relevant tutor when a trainee had uploaded or changed their portfolio.

In 2008/9 a survey of trainees' and tutors' opinions will take place and guide developments funded by the TDA. The exact nature of the changes is yet to be determined but is likely to include better information (perhaps RSS) and facilities that are more efficient for tutors (for example, clearing of cohorts files).

Affordances

The most important question - what are the affordances of EPS identified by tutors using the system?

The affordances are summarised with this phrase:

learn about and experience the secure, monitored, flexible and efficient building and sharing of electronic resources

A most important aspect of the use of e-portfolios in teacher training programmes is that they **learn about** the functionality and affordances of e-[portfolio systems]. It is impossible to expose all trainees to all forms of portfolio system because of the curriculum time limits and the financial implications. It is important therefore that the exposure they receive demonstrates the generic features of e-portfolios. Those features are:

- a container for the resources;

- a location for the container;
- a means of seeing the contents;
- a means of adding contents;
- a means of changing or even deleting contents;
- a method of registration;
- a method of protection (username and password);
- a method of securing (backup);

The trainees should be aware of the tutors' facilities for monitoring the portfolios, in the same way as they will be responsible for monitoring the contents of their pupils' portfolios. In the EPS system, all functionality is exposed and unadorned.

The system gives the tutors an opportunity to talk about the selection of usernames and passwords when registering for online facilities in general. The trainees can **learn** how and why they should have different passwords for different logins to ensure that they work in a **secure** manner.

Portfolios are named after their owner, for example, joe.bloggs. A very important e-portfolio on the system is called write.access. That portfolio is open so all trainees can write to it. It enables the **sharing** of resources and is widely used by trainees. It is important that trainees **experience** sharing opportunities when working online. Often, the pupils they are working with will be logged into a computer and can only read the teacher's folder and only write to their own folder. This does not facilitate **collaborative** work.

One portfolio is named read.access. This portfolio can be read by all trainees. However, it can only be written to by a tutor. It facilitates the provision of exemplar portfolio resources or the **sharing** of authorised documents in a private environment (helping with some copyright/security issues where public publishing would not be appropriate).

The notification by email of student activity makes **monitoring** of the portfolios by tutors more efficient. This is equivalent to a RSS notification and in not too an invasive way helps tutors to keep an informal view of the usage and can be used as a formal record of engagement by individuals and groups in the e-portfolio process.

There is **flexible submission** of work, for example, trainees can be expected to submit work whilst in the middle of school placements without the necessity to physically send documents or for the tutor to receive them through emails.

The portfolio system enables trainees to **build websites** by simply including a HTML files in each folder called index.htm. Unlike conventional website production (facilitated by the University) the tutors can examine "behind the scenes" through the conventional fmanage view. They can better **learn** the concept of a website and the absolute and relative positioning of electronic resources. Website construction around a portfolio supports and exemplifies constructionist approaches to learning. The structuring of the portfolio into

folders can reinforce good practice in structuring the MyDocuments folders on the trainees' own computers. The use of overarching files that describe the content of the sub-folders can reinforce patchwork portfolio principles.

Summary

EPS is a bespoke, organic, open-source system enabling trainees to present evidence in any electronic format in a universally accessible environment giving all tutors and mentors access to that evidence. There is the facility for trainees to share documents with each other and tutors/mentors can share resources with all trainees. Trainees can learn the principles of website management. The future activities and developments will be confirmed after the TDA funded review being undertaken during the summer of 2008.

Dr John Woollard
July 2008

References

OPSI (1998) *Data Protection Act 1998* London, UK: Office of Public Sector Information http://www.opsi.gov.uk/Acts/Acts1998/ukpga_19980029_en_1

OPSI (1990) *Computer Misuse Act 1990* London, UK: Office of Public Sector Information http://www.opsi.gov.uk/Acts/Acts1990/ukpga_19900018_en_1

Appendix A

Survey of alternatives (2000 onward)

<http://www.pgce.soton.ac.uk/eps/survey>

Appendix B

The principles of the original development:

- accessible from any computer on the internet
<http://www.pgce.soton.ac.uk/eps>;
- data being stored on a "local", secure and controlled server within the University of Southampton (Data Protection Act issues) with 24-7 access;
- data being only accessible by authorised users (Computer Misuse Act issues) - a secure subscription, username and password system being implemented;
- access not being vulnerable to firewalls in schools (by using port 80 HTTP and avoiding likely blocked FTP, IRC or Samba ports);
- being "freely" accessible by mentors in schools (for this reason we were forced to reject WebCT and subsequently Blackboard);
- demonstrating the principles of upload and presentation in the most simple format possible and therefore accommodating the least skilled trainee by keeping the core facilities simple (enrol, being given a single access point and a simple upload option);

- being inexpensive (based upon open-source software, stable system with a lo-cost server provided within the University infrastructure);
- access/monitoring of all trainees' portfolios by all tutors and all mentors; and
- developments and modifications being under the control of ICT-aware PGCE tutors.