Educational e-portfolios: uses and tools

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Abstract

E-portfolios have experienced growth and expansion due to importance of web technologies and the benefits that they have brought to teaching practices. In education, e-portfolios are mainly used to improve students’ learning processes and to support teachers’ assessment. In this sense and although there is a large number of tools that encourage the application of an educational e-portfolios, the use of these is relegated just to evaluation purposes. For this reason, this article aims to make a revision of points such as the foundations in which e-portfolios lay and the facilities that can make of them personalized tools with specific characteristics and focussed on different purposes.

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1. Introduction

An electronic portfolio provides a scalable and comprehensive way to document personal progress of an organization towards defined goals and objectives, to evaluate the effectiveness of business operations, overseeing projects, as support for learning, professional development, audit public companies and to participate in assessment matters. When an e-portfolio is fully developed, it provides many advantages since it is addressed to different types of users with different purposes (Buzzetto-More, 2010).

Portfolios have been widely used in industries such as graphic arts and design, in which an author creates a "dossier" with their best works in order to show them to the public. But in education, the portfolio takes on another dimension, not only a collection of works, but also includes a series of reflections that allows understanding the learning and teaching process, and also facilitating the evaluation (Prendes Espinosa & Sánchez Vera, 2008).

E-portfolios can be used for many purposes and for many different types of users and entities. Even so, we could classify e-portfolios into three groups according to their primary objectives of their uses/implementation (Buzzetto-More, 2010):

- Companies, businesses and organizations
- Public Administration
- Education

Generally, e-portfolios are used individually but sometimes they can be used by groups, which frequently represent any organization or entity aiming at promoting themselves or presenting to the public a set of artifacts that
they have developed or managed. In addition, e-portfolios can be private or public, the owner usually provides the access level for the contents of them.

In recent years (Buzzetto-More, 2010), the use of e-portfolios has improved the transparency in the government and the audit processes in administrations.

It is worthy of mention that individual e-portfolios select samples of work or evidence for achieving personal or professional goals which are organized and presented in a certain way. They have the function of promoting reflection on each educational and/or professional practice. Therefore, when a person makes an e-portfolio, this will always be subjected to a personal assessment and external degree of achievement of objectives, since it is the objective of it (Barberà, Bautista, Espasa, & Guasch, 2006).

2. Educational E-portfolios

From the student's perspective, the development of an academic e-portfolio allows students to learn managing themselves to be more autonomous in the learning process and to promote decisions making with the teacher’s guidance. E-portfolios will allow the regulation of their own learning process (Barberà et al., 2006) and to make students more active participants. It is generally used as an evaluation system integrated into the teaching and learning process.

About the evidences presented by the student, he/she necessarily undergoes a reflection and justification process establishing a relationship between what is shown and what is learned. This allows the student to take into account what and how he/she learns, allowing setting his/her own learning and working rhythm. This continuous reflection is what makes e-portfolios to be used as a tool for assessment and evaluation within the current continuous assessment, formative and summative systems.

As indicated at the beginning of this section, the student becomes the main focus of the teaching-learning and assessment process, assuming that the student will become aware of their own progress, and will identify what aspects masters and what aspects should improve. In this regard, we must keep in mind that e-portfolios are often used as assessment tools and undoubtedly the reflection process is usually passed over. Therefore, both uses of portfolios, assessment and reflective tool, should be exposed and used in order to improve the teachers and students’ work. This includes a selection of evidences or samples giving the student a period of time to respond to a specific goal (Barberà et al., 2006). These samples allow the student to demonstrate his learning while the teacher tracks the learning process.

When we speak of the aids that a student can receive from the teacher when developing its portfolio, two types are primarily identified depending on the information they provide: those conceptual contents and those that are procedural-strategic closely related to the own conception of e-portfolio. In addition, these aids can be simultaneously classified according to their appearance in the e-portfolio: contextual help, tutorials and/or preparation guides. Even, we must add that these aids can be classified according to the format in which they are presented: audio, video, documents, Web pages, etc.

Therefore, an e-portfolio is not an online course or a content management system, but a personal tool: it is user-centric, which is the owner of the e-portfolio. Users, logically, are not the only actors involved: there are institutions that host the tool and which are responsible for certifying the achievements of the users, and also tutors or teachers. But it is the owner who decides what level of interaction allows these two outsiders (Pitarch, Álvarez, & Monferrer, 2007).

E-portfolios have been proven to be effective at all levels of education, including really young students, even in preschool, where parents’ communication out of the classroom has improved the learning processes (Buzzetto-More, 2010).

In countries such as UK, EEUU and Australia, the use of these tools in education K-12 (primary school in Spain) has shown that learners using e-portfolios were more actively involved in the classroom, while teachers changed their role form a speaker to a collaborative trainer or instructor. University studies and Vocational Training support students’ assessment and state that the level of achievement of the skills developed is associated with their studies.
Moreover, in blended or distance lessons, the e-portfolio has become an innovative tool that has improved continuous monitoring of students through mentoring.

We can categorize the existing educational e-portfolios into two distinct types:

1. Allowing interaction between different agents and the degree of reflection. So, these tools are designed as an educational tool, teaching and assessment conducted and managed by the teacher/tutor.

2. According to the autonomy, these are self-management tools, owner of their own learning process.

In the first group we can include e-portfolios that put more emphasis on interaction with tutors/teachers and educational institutions, such as EPICS or ePortfolio, the latter having the ability to integrate with virtual learning systems.

In the second group, we have tools that focus on the autonomy of the portfolio’s owner. In this case, we have tools such as OSPI and ELGG (discussed in section "3. Tools"). The latter, focuses on a type of “social” e-portfolios, in which you can create a network of like-minded users, communities, blogs, etc.

At present, e-portfolios managers are learning tools covering the two aforementioned groups above, such as the work of (Pitarch et al., 2007), who has developed a specific manager portfolio to Portfolio European Language (PEL). The so-called PEL is located halfway between the two types mentioned in this section: fully focused on the owner, but allowing great interaction of other agents.

2.1. Using e-portfolio

Once you decide to implement the use of e-portfolio for students, you need to plan and organize portfolio’s work. In (Prendes Espinosa & Sánchez Vera, 2008) recommends six steps to implement them in education:

1. Giving info from the very beginning. It is important to communicate clearly to all students involved in the process, the purpose of the portfolio and specific criteria for production and evaluation.

2. Limiting the number of components.

3. Defining the evaluation criteria of portfolio.

4. Teaching and facilitating the processes of self-reflection and self-evaluation. This is an important step, because students usually do not know how to deal with them.

5. Indicating the appropriate time for the portfolio.

6. Providing advice and preparing students for the realization of portfolio.

The syllabus of the course or educational programming should be planned when establishing e-portfolios and the nature of the evidences, the type of versions, the timing, the evidence with regard to the teaching-learning activities, etc.

In educational institutions, it is very common to use the e-portfolio in conjunction with on-line or blended learning tools. In this case, e-portfolios focuses on enabling the monitoring of students’ work based on the progress they have developed throughout their studies (Barberà et al., 2006). So, this development is demonstrated through the publication of evidence of achievements that support the level of achievement of these same powers. Therefore, in this case using a single e-portfolio and sustained with the support of the teacher or teachers who constantly report/s a feedback to students, allowing them to direct their efforts towards achieving professional skills.

This type of e-portfolios is generally characterized by three complementary phases and not necessarily successive (Barberà et al., 2006):

- Presentation and index. In this first phase, it outlines students’ personal and academic records.
- Collection, selection, reflection and publication of evidence. This phase implies self-regulation of the learning process by providing evidence. In this phase, the key element is the reflection provided by the student of why he/she chose that evidence and their relation to learning.
- Rating. We proceed to the assessment by the teacher of the evidence presented by the student. The criteria should be known from the beginning of the teaching-learning process.
In relation to learning assessment, students should know their competence level. Besides, once provided the evaluation criteria and levels of achievement, they will have a better vision of measurable competencies. Therefore, one of the key points of electronic portfolios is the external feedback that student receives, if it has sufficient detail, communication can be automatized, what drives improvements that students must introduce immediately.

Up to this point we have focused on the pedagogical use of e-portfolios from the student's perspective or use. However, the use of e-portfolios in educational settings can also be used as a tool for teachers themselves.

In (Prendes Espinosa & Sánchez Vera, 2008), indicates that in the e-portfolio the teacher demonstrates professional competence of someone who deals with teaching. Such portfolios are created by teachers who work with students, including in it, these materials:

- Curriculum units.
- Course guide.
- Documentation for parents.
- Examples of activities to students.
- Photographs of teaching situations.
- Videos of classroom interactions.
- Letters of recommendation.
- Academic work and evaluations.

In spite of providing a public aspect to the teacher, e-portfolios also provide teachers with a critical reflection on their own teaching, promoting to share experiences with others and trying to help new teachers or aides in their teaching practice at early stages.

To summarize, the teacher’s e-portfolio can be used to:

- Train and evaluate the professional performance, reflection on the teaching work.
- Promote professional discussion about teaching procedures.
- Enhancing families to get actively involved in education (using the tool as a means of contact).

2.2. Electronic learning systems

Currently, the market for portfolios electronic systems has become unmanageable (Strivens, 2007). This is due to the rapid transformation of "on paper" portfolios compared to electronic portfolios which have been especially promoted by the rise of Web 2.0. Therefore, this rapid transition from one system to another has made e-portfolios systems get confused with other types of learning systems because it was not defined what they had to offer and what was really an electronic portfolio system.

According (Himpls & Baumgartner, 2010), the future of e-learning will be mainly the creation of a Personal Learning Environment (PLE). These environments are the result of new Internet-based applications, which are based on connecting a number of information and communication environments that people use every day in their daily lives (Barberá, Barujel, & Illera, 2009).

The e-portfolio as a personal tool documenting our evidence of learning and even our professional development becomes the central element that brings together all the systems that are used in learning, virtual or distance classroom. We talk about:

- LMS: Virtual classroom systems in formal education.
- PLE: Knowledge management system and long life learning.
- Web 2.0: Social networks and non-formal education or training.

Thus, e-portfolios should gather into a single system all the elements derived from the existing single mode and self-managed facilities (PLE and Web 2.0 services) and those provided by the potential institutions and users (LMS and CMS).
3. Tools

While all electronic portfolios are digital storage that require file uploads or form-based templates, there are four main characteristics that must be taken into account and that are defined by the purpose of the tool. These four types can be included in the same program, but some of them make more emphasis on others. These types are (Cheal, 2010):

1. Assessment and evaluation
2. Student Learning
3. Professional development
4. Accreditation

In addition to the four categories mentioned above, the tools presented can also be classified into other four main types of software systems:

- E-portfolios Management Systems. These products are designed and developed specifically for e-portfolios systems used in institutions. For example: Epsilen, Mahara, PebblePad and Taskstream.
- Learning Management Systems (LMS) or "Virtual Classroom". These capabilities provide e-portfolios or add them as modules. For example: Exabis, Moodle, Fronter and Sakai.
- Integrated systems. Content Management Systems (CMS) that can provide "indirect" e-portfolio functions. For example: Drupal ED, Factline and Movable Type.
- Other systems like Elgg and Wordpress cannot be classified into the above three types.

4. Conclusions

The use of e-portfolio in education offers a valuable tool for improving teaching practices, processes of teaching and student learning and assessment. It has been shown that it is suitable for any level of education, having clear goals and objectives and the entire educational and professional stage.

We have a range of tools with different purposes and different functionalities suitable for different environments, both free and commercial software. In this sense, the teacher and students’ possibilities are challenging since teachers could implement an e-portfolio and students could develop it during their lessons, improving their ability to reason their achievements, establishing communication, and obtaining the teachers’ feedback from assessments.

References