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Digital learner portfolio as a tool for innovating assessment in the European Higher Education Area

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Summary

The present article comes from a doctoral thesis that turns on digital learner portfolio, which is an innovating methodology from the perspective of European Higher Education Area. First, the educative concept of eportfolio is described in the sense of its procedure and its structure, by means of the technological support of a platform of virtual campus. Second, it is shown the pedagogical model of an eportfolio that adapts subjects with an instrumental character to one organization based on tasks and reflections. This design of virtual learning environment is based on a teaching-learning methodology sustained in the activity of the student, which tries to give support to the management of his or her own process of learning and assessment. Finally, the article illustrates the experience of implementation of the first digital learner portfolios in the University of Barcelona and the Autonomous University of Barcelona, with the objective of reflecting about the pedagogical consequences that this assessment model with technological support has in a traditional higher education institution.

Keywords

Digital learner portfolio; Higher Education; Methodology of Assessment; European Convergence.

INTRODUCTION

Portfolio, as an educative methodology, appears documented about the middle of last century in Anglo-Saxon countries. Nevertheless, it acquires relevance as an assessment system in the decade of the 80 in U.S.A. in the field of teacher portfolio, as an alternative tool of accreditation of the state teaching staff, as well as in specific scopes, being a support for lecto-writing, for teaching languages, etc. One decade later, in nineties, with the fast expansion of the Information and Communication Technologies (ICT), in the university scope it resurges as an assessment instrument centred in the academic profit of the students. It emerges as a new way to conceive the assessment that offers the opportunity to design a different system, with a new tool, which facilitates the acquisition and pursuit of learning, through the new rolls assigned for teachers and students. This innovating character has been mainly the one that has contributed to its recognition in the present educative context.

In Europe, its use in the scope of the higher education extends at beginnings of year 2000, through created home-grown applications working as a Virtual Learning Environments (VLE) that acted as a digital learner portfolio. The approach to this system is made of a specific way, which is centred in the production of students in a certain course. In the North American tradition, it is used an institutional online assessment systems to provide university digital portfolios, whereas in Europe, its application is usually less amassed, with home-grown or adapted platforms to the student and centred in the academic achievement. The objective, in any case, is to facilitate to the student the pursuit of his or her own learning, through the use of the portfolio as an instrument of measurement of his or her own progress, to include in his or her repertoire some didactic resources as a support to the learning process, as well as to follow his or her process of formative and summative assessment, in which the students must involve themselves and take responsibilities (premises of learning autonomy).

This conceptualization of assessment has motivated organizations of diverse character (academic, enterprise, political, etc.) to gather around groups such as the "European Institute for Elearning" ("EIFEL") in order to undertake the study of electronic portfolio or "ePortfolio" (as usually it is denominated at international level), as much as from the advance of its technology of support as well as from its possible applications to different scopes, among which is the educative one, our area of interest.

In our context, just a few years ago, the digital portfolio has begun to be used by universities. In our study it must be remarked two of the first universities that initiated experiences of this type: the University of Barcelona (UB), whose implementation arose from the Group of Research in Education and Virtual Learning (which acronym in Spanish is "GREAV") with the Moodle, an open source platform (2004) and the Autonomous University of Barcelona (UAB) with the prototype PRACTUAL (2003), based in its "Autónoma Interactiva", a home-grown platform. At Spanish state level, diverse universities, as an educational innovation, also initiated their first works to adapt eportfolios. In these proposals it is possible to observe: first, a clear bet by blended learning with ICT support and, second, the consideration that the eportfolio constitutes one of the new methodologies that can give answer to a assessment system set from the conception of the European convergence.

THE EPORTFOLIO WITHIN THE FRAMEWORK OF EHEA

This exposition of the assessment by eportfolios adapts to the European system of credits and qualifications of the European Higher Education Area (EHEA). In the new paradigm of the European university education, the credit corresponds to the unit of measurement of the student's work, in order to obtain the objectives programmed by the subjects of the curricula, integrated in an official title. This measurement can imply a new system of learning in which the student organizes and manages his or her academic activity, this aspect, according to diverse authors (Goñi Zabala, 2005; Garcia Suárez, 2006), constitutes the key piece of the new European university reform. It is considered that the assessment has to be oriented to the student, therefore it would have to happen through the reconstruction of the curriculum and it should go beyond the simple cognitive dominion of the discipline, including the acquisition of techniques, competencies and abilities of communication, creativity, critical analysis, independent thought, work in equipment in diverse contexts, etc. In other words, the assessment must be based on reorganization and the reflection about the curricular planning on the basis of: competencies, activities and assessment, to potentate the interrelation between the three axes of the EHEA: teaching-learning-assessment.

THE EPORTFOLIO AT THE PRESENT TIME

Eportfolio is defined as a methodology of alternative assessment comparing with traditional one, which it is based on an online application that allows: the management, organization and distribution of the personal information related to the academic and/or professional activity of the student. The specialists in the theme (Cambridge, Kahn, Tompkins & Yancey, 2001; Kankaanranta, Barrett & Hartnell-Young, 2001; Barrett, 2003) considers that the information of the contents of eportfolio must be selected by the own student (owner of digital portfolio) to be able to show his or her educative achievement and reflections about his or her own learning, in such a way that it reflects to himself or herself and to the others (teachers or "peers"), the knowledge acquired in a certain period.

One of the main authors of this educative theme is Barrett, a North-American researcher that at the end of nineties spreads her work (that covers research, seminars, etc.) and participates in the main academic events (<http://electronicportfolios.com/portfolios.html>). At the same time, other authors like the mentioned ones previously, also have developed the theme in their contexts and have contributed to their spreading, like Cambridge from the North American Association of Higher Education, Hartnell-Young from the Institute of Research in Educational Sciences from University of Nottingham in United Kingdom, and Kankaanranta, from the Digital Portfolio Project of the Institute of Educative Research of the University of Jyväskylä in Finland. With this review, the origin of the work is framed, that has established the foundations of digital learner portfolio, since at the present time a publication proliferation exists, which centres their premises in the work of these authors. However, the investigations of empirical character are scarce, especially from the university scope and in relation to the European convergence.

PREVIOUS STUDIES TO THIS DOCTORAL RESEARCH

Before the implementation of eportfolio, a set of investigations was carried out on this theme, because at the beginning of 2000 almost did not exist published literature related to digital learner portfolio in the university.

First, on the basis of the state of the question, the pedagogical criteria for assessing university digital portfolios were created (Lopez-Fernandez, 2004), which allowed developing a pilot instrument for the analysis of eportfolios in universities, considering the point of view of three macro-criteria: the context, the contents (products and processes) and the agents (figure 1). This previous work was validated by university lecturers' specialist in this theme at international level. These criteria were used as a tool to analyze the university digital portfolios, published and used by universities of different countries, based on their objectives and characteristics. They were also used to know their structure and procedure with the objective to decide the characteristics to consider later in the implementation of our prototype.

In particular, the first macro-criteria, the context of the digital portfolios were based on its multimedia and instructional design. The second macro-criteria, the components of the digital portfolios, made reference to their products: tasks, reflections and learning objectives, as well as its processes: assessment, feedback and presentation of evidences. The third macro-criteria, the agents, contemplated the type of learning fomented from eportfolio, being this either individual, social or mixed of both possibilities.

Proposal of Pedagogical Criteria for Digital Portfolios in Higher Education

CONTEXT OF DIGITAL PORTFOLIOS

1. Multimedia Design: Navigation, User choice, Appropriate use of Multimedia, Appropriate use of text, Operational Fundamentals, Copyright Laws.
2. Instructional Design: Integration: Table of contents in the Product Learning Components, Organization of Academic Evidences, Audience and Purpose, Educational Philosophy, Virtual Learning Environment

COMPONENTS OF DIGITAL PORTFOLIOS

Product learning components

3. Artifacts: Organization of artefacts, Variety: typology and expertise, Appropriate content, Creativity of the artifacts
4. Reflection: Connection between reflections and artefacts, Meta-cognition, Level of reflection, Overall reflection of the e-Portfolio.
5. Standards: List of standards, Grade of understanding, Achievement of academic evidences, Process Learning Components

Process learning components

6. Assessment: Criteria for assessment, Opportunity in order to create his/her own assessment, Opportunity in order to participate in assess other peers, Instruments for assessing the PLC during the process
7. Feedback: Between the student and his/her teacher, Other participants, Communication tools, Validation of the learning evidences.
8. Presentation: Development of academic evidences, Learning goals, Portray of the owner, Culture of evidence, Final components.

AGENTS OF DIGITAL PORTFOLIOS

9. Individual learning: Originality, Autonomous learning, Personal values and philosophy

10. Social learning: Communication, Participation, Roles and Privacy

11. Individual and Social learning: Integrate autonomy with sociability, Member of a "community of learning", Member of a collaborative "network of learning"

Figure 1. Summary of the pedagogical criteria for digital portfolios in Higher Education

Secondly, a study was made to know how an educative portfolio was boarded in the initiated European proposals in 2001, in relation to the European Language Portfolio and ePortfolio 2010.

Thirdly, in the case of the University of Barcelona, the main VLE with an open code were analyzed in order to evaluate whether they could give us an optimal solution to our intention of implementing a digital learner portfolio. The only existing application in 2003 the "Open Source Portfolio Initiative" (OSPI, version 1,5) was chosen as an eportfolio. We studied its basic characteristics (to register, to reflect and to share) in order to adapt it to our model (Lopez, Rodriguez and Rubio, 2004), but finally it had to be discarded for technical reasons. Because of this it was continued the process to explore other alternatives and, once selected, Moodle was chosen by its advantages: flexibility, versatility, ease use, and adaptability to our model of digital learner portfolio. Parallel to the investigation made from UB, collaboration with the group of research SINTE, from the Autonomous University of Barcelona began, which had initiated their work with university digital portfolios (Monereo, Sanchez and Sanz, 2004).

Summing up, the objective pursuit was to create eportfolios as tools for alternative assessment, and that provided the development of a method of work, based on tasks and reflections about the own learning of the student in a blended strategy of teaching and learning in the University. We tried to promote a progressive acquisition of the autonomous learning, understood as the own capacity of the student to manage his or her learning. In both institutions, eportfolio was an innovation, reason why an adaptation of a platform to eportfolio of the student was made. This consisted of a process of induction to the innovation for the students. Furthermore, several contents of complementary support were designed: informative webs, online tutorials... as well as teaching aid with the eportfolio tutor (Lopez, 2005).

INVESTIGATION OF UNIVERSITY DIGITAL LEARNER PORTFOLIO

The main objective of the present investigation was the design and the implementation of digital learner portfolios as systems of assessment of the university leanings.

It was tried to obtain a greater understanding of the operation, achievement and consequences of this methodology in the students who attended subjects adapted to EHEA framework. These students characterized themselves to have a basic baggage in: the use ICT, the mediated communication with technology and the learning by tasks. The purpose of this proposal was to promote the self-management of the student's work, following the premises dictated by the European convergence and, at the same time, to be able to obtain an improvement of the academic yield.

In the UB three prototypes of digital learner portfolios were based on Castelló and Monereo's pedagogical model of virtual folders (2000), but they were developed with Moodle platform (figure 2).

Portafolio Digital de Multimedia Educativo (Comunicación Audiovisual)

Ud. está en el sistema como Admin Usuario. [Salir]

moodtest133 - MME CAV Activar edición

Personas

- Participantes
- Editar Información

Diagrama de temas

En este primer espacio, que lo utilizaremos durante la construcción del portafolio digital, tendremos un foro común de acceso general (profesor, tutora y todos los alumnos) como soporte, materiales de ayuda y otros recursos para facilitar vuestro aprendizaje.

Estas son opciones necesarias para tod@s:

- Material del Portafolio Digital
- FORO COMÚN sobre el Portafolio Digital
- Foro de Noticias

Estas son opciones optativas para tod@s:

- Glosario de un Portafolio Digital

1 Esta sección hace referencia a la INTRODUCCIÓN AL PORTAFOLIO consiste en un Currículum Vitae Breve.

- Breve Currículum Vitae

2 Esta sección hace referencia a la TAREA 1, que es OBLIGATORIA y requiere de la presentación final del trabajo y de su reflexión asociada.

- Trabajo de la tarea 1
- Reflexión de la tarea 1

3 Esta sección hace referencia a la TAREA 2, que es OBLIGATORIA y requiere de la presentación final del trabajo y de su reflexión asociada.

Novedades

Añadir un nuevo tema...

21 de Sep, 14:36 - Olanz López
Bienvenidos a vuestro portafolio digital más...

Calendario

<< November 2004 >>

Lun	Mar	Mié	Jue	Vie	Sáb	Dom
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

■ Eventos globales ■ Eventos de curso
■ Eventos de grupo ■ Eventos de usuario

Figure 2. Web of the Digital Portafolio of Educative Multimedia (UB) made with Moodle.

The digital portfolios consisted in a private VLE, where the student was the owner and acceded through a university username and password. It was structured by sections, where the main one (represented by the central column of figure 2) was a structure public to teachers and students, but the content was private for each student. In this first section (the one which is without a number) were stored the common resources for the group-class: the directory with the contents of classes, the online tutorial of portfolio of the subject (figure 3), the criteria of assessment among other didactic materials. The rest of sections were private (numbered sections of the central column of figure 2); their content depended on the work of the student organized for: a brief curriculum vitae, a set of evidences formed by tasks (described with: title, date of delivery for the assessment, objectives, materials of support) with associated reflections and, to conclude, a final synthesis.

EL PD DE MME (CAV) Page 9 of 13

6. ¿Cómo será evaluado este portafolio digital?

Todo el material educativo del PD del/de la alumno/a formará parte de la evaluación de la asignatura, por eso se ha incluido desde un principio los criterios de evaluación del PD del MME.

Estos criterios están disponibles desde el mismo entorno de PD, en concreto se encuentran en el directorio de la sección común, dentro de una subcarpeta denominada "Criterios_Evaluación".

En resumen, son los siguientes:

Calificación:	
1. Primera tarea (Artículo):	_____ (15%)
2. Segunda tarea (CD-Rom o web):	_____ (10%)
3. Tercera tarea (Proyecto):	_____ (55%)
4. Reflexiones de aprendizaje:	_____ (10%)
5. Uso del PD y Evaluación Cont.:	_____ (10%)
NOTA TOTAL:	_____ (100%)

El criterio 3 (Proyecto) es excluyente: debe de ser aprobado obligatoriamente para que el resto de puntuaciones sumen. En caso de que la evaluación del Proyecto resulte insuficiente, los otros porcentajes serán reservados hasta que ese criterio sea superado.

Figure 3. Webpage related with assessment criteria of MME digital portfolio (MME DP), as a part of the students' online tutorial made with *Note Taker*.

The UB eportfolios fulfilled established requirements for the investigation. The teachers must have experience in the use of portfolios, use of ICT for their teaching, and use of European convergence credits. The students would have experience in the use of the ICT. These conditions also occurred in the case of UAB eportfolio, denominated "virtual folder Practual", whose model was very similar (figure 4).

These models of digital learner portfolios located under the constructivist learning perspective, established phases of development that constituted periods of work for the students to manage their activities and assessment. In both cases (UB and UAB) the calendars were scheduled for allowing learner-centred formative assessment, by means of a feedback established for each task displayed to the teacher during a semester.

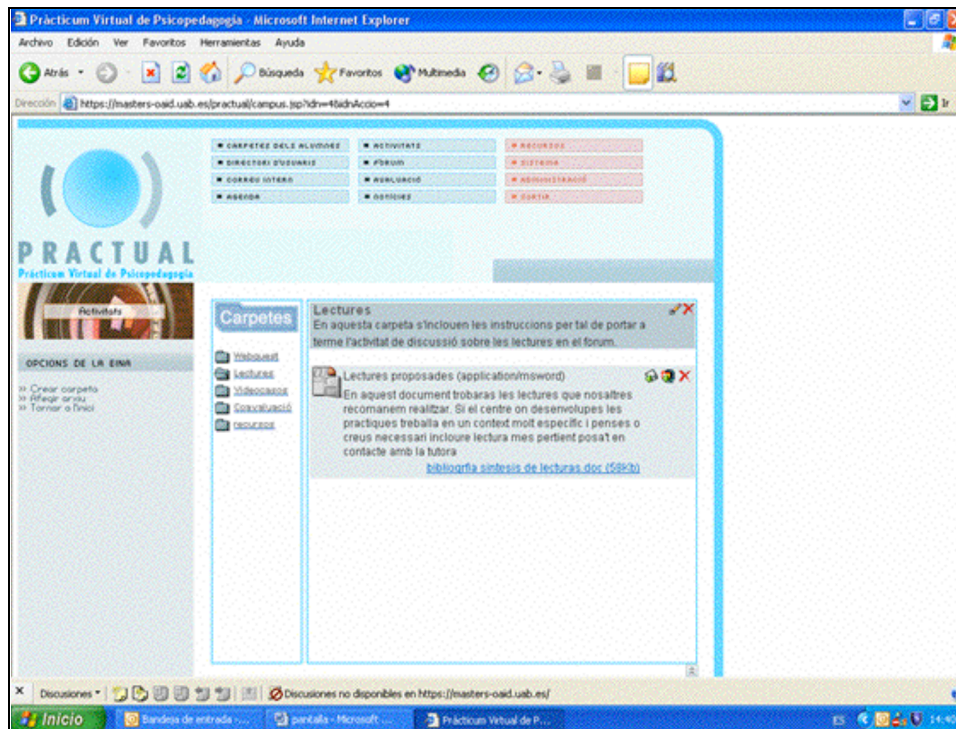


Figure 4. Web of the virtual folder of Practical made with the *Autònoma Interactiva*.

In relation to our proposal of pedagogical criteria for digital portfolios in higher education, both prototypes of eportfolios had an optimal level as far as the three described macro-criteria.

As far as multimedia design is concerned, both eportfolios (UB and UAB) fulfilled the most basic aspects:

- they allowed a fast navigation, although barely intuitive for some students, due to the complexity of the platforms structure (because both eportfolios were adapted from virtual campuses platforms)
- the election was something limited, since the students could not modify the structure of his or her eportfolio, which responded to the instructive and assessment needs of the subject (although they could make the essential: to publish their works in private spaces and to communicate privately or in a group mode)
- the use of the multimedia was the suitable one, both allowed to publish evidences in diverse electronic formats and with great capacity (50 Mb)
- the text use was appropriate (both contained text processors)

As far as the instructive design is concerned, both eportfolios were designed on the basis of their subjects:

- in both eportfolios, students were informed with an introductory text; in Practual (UAB) through the first access to the Web, and in DP prototype (UB) with an online tutorial included in the eportfolio (figure 3)
- the structure of the eportfolio components (contents and processes) were clear from the introductory text of Practual (UAB) and in the main page of DP prototype UB (figure 2)
- the audience and the intention also were clear from the beginning, because both eportfolios were introduced in the presentation of the subject by the teachers team and, later, sessions were dedicated to introduce this innovation

The products of both eportfolios contained the essential elements:

- they based its organization on the tasks (in greater measurement the design of the UB) with a progressive level of complexity, adapted to the content of the subject, so allowing certain degree of creativity
- the reflections to the connected tasks, also had a progressive level of complexity that finalized, in the case of the design of the UB, with a general synthesis of eportfolio
- they content a list of objectives in relation to the academic evidences (with greater visibility in design of UAB, because the information was contained from the beginning of the application; whereas in UB, the information was stored inside each task)

Also, in relation to the processes both eportfolios were similar:

- they contained as a purpose the subject assessment, structured by phases throughout the learning process (formative assessment) and, at the end, with the final product (summative assessment)
- they had a tutor to give support to this process: to answer the commentaries of each student, to value their evidences, to manage the group communication through forums, etc. It worked in a teacher team (formed by a senior teacher of the subject and an eportfolio tutor)
- they based the presentation of learning products (tasks and reflections) on a progressive sequence, starting from some simpler components to others more complexes

Finally, in relation to the eportfolios agents:

- both eportfolios were individual, which promoted the students' autonomy
- although eportfolios were individual, they also provided opportunities for the collaborative learning, specially Practual, which had as objective create a community of learning

In summary, both prototypes studied during the academic course 2004-2005 contained the main components of the academic eportfolios for assessing university students. On the one hand, they had its advantages derived from the instructive properties of the design as well as of the teaching support. On the other hand, we must emphasize the difficulties derived from the adaptation of virtual campuses platforms and the novelty of the teaching-learning-assessment process.

CONCLUSION

The experience of implementing digital learner portfolios, created by the own university teacher team, on the basis of the premises of the European convergence and to the new educative models, inspired this work from their origin. It was tried to aboard thoroughly, a method that conjugated the pedagogical, technological and psychological dimension, to centre the study of this doctoral thesis in the obtaining of knowledge about the future forms and instruments of teaching and learning at the University. For that reason, it was tried to restore in practice an educative methodology that, in one hand, was an innovation that affected to teachers and students, and that on the other hand, implied all the educative process, reason why the assessment was selected, as focus of the university educative action.

In conclusion, it has been described in a detailed and summarized way, the concept of eportfolio and an initial model for its implementation in higher education, as an example of learner-centred assessment. The "good practice" of this methodology has facilitated new processes of teaching-learning-assessment and new roles, for both, teachers and learners. At the same time, it has been tried to foment in undergraduate students the necessary training to exert professionally in a society characterized by: the management of information and knowledge, being at the moment more global and intercultural as well as complex. Thus, other elements arise from reflection about the implication of this type of processes addressed to these students and the own institution. The possible future lines for investigating the impact of this innovation are addressed to different types of subjects, students, teachers, universities, platforms, etc. One hopes that this one and other works, in the line of educative innovations, contribute to the development of empirical studies that foment the advantages of these practices and minimize, as well, their disadvantages, to accomplish with a scientific base, the challenges raised by the new century for the Higher Education.

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