Blogs as Eportfolio Platforms in Teacher Education: Affordances and Limitations Derived from Student Teachers' Perceptions and Performance on their Eportfolios

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Abstract

At the University of the Balearic Islands, in Ibiza local centre, an eportfolio project in Teacher Education has been implemented since the 2009-2010 school year. This article is based on the research of the two first school years (2009-2010 and 2010-11) of experimental implementation of blogs as electronic portfolios. The results reported are those related to student teachers' perceptions of blogs as eportfolios and the assessment of their performance. The project is aimed at fostering the construction of an electronic portfolio in order to build student teachers' networked selves as future Early Childhood Education teachers. Both the project and research are based on the principle that social media empower eportfolios. Data obtained allows us to observe some affordances of blogs as eportfolio platforms. However, data collected during the two-year period of research raises some unexpected issues of blogs as eportfolios.

Keywords

Electronic portfolios; Open eportfolios; Blogs; Web 2.0; Teacher Education

Blogs como plataformas de eportafolios en la formación docente inicial: posibilidades y limitaciones derivadas de las percepciones de los estudiantes y producciones de sus eportafolios

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Resumen

En la Universidad de las Islas Baleares, en la sede de Ibiza, se implementa un proyecto eportfolio en la formación docente inicial desde el curso escolar 2009-2010. Este artículo se basa en la investigación de los dos primeros cursos (2009-2010 y 2010-11) de aplicación experimental de blogs como portafolios electrónicos. Los resultados mostrados son los relacionados con las percepciones que tienen los futuros docentes así como el resultado de la evaluación de su producción. El proyecto está dirigido a fomentar la construcción de un portafolio electrónico con el fin de que el alumnado construya su yo en red como docentes de Educación Infantil. Tanto el proyecto como la investigación se basan en el principio de que la web social puede empoderar la construcción de eportafolios. Los datos obtenidos nos permiten observar algunas posibilidades de blogs como plataforma de portafolios. Sin embargo, los datos recogidos durante el período de dos años de investigación plantean algunos problemas inesperados en torno a los blogs como eportafolios.

Palabras clave

Portafolios electrónicos; Eportafolios abiertos; Blogs; Web 2.0; Formación docente inicial.

I. Introduction

There is an extensive debate on the influence of technology on eportfolio process with many authors arguing as to why such an influence exists. Zubizarreta (2009) does not see the influence of technology as he states that in spite of the new roles of social media, "the fundamental process of learning portfolio development remains steadfast" (Zubizarreta, 2009, p.64). There are other authors who argue that the main decision is not about the tool but the enhancement of student reflection (Batson, 2010) or the activity carried out with students on their eportfolios (Shada, Kelly, Cox & Mali, 2011). Oner and Adadan (2011) even argue that electronic-based portfolios do not have to be necessarily better than paper-based ones.

On the other hand, Cambridge (2010, p.188) argues that technology has a key role in the construction of eportfolios, even becoming "part of its content, and shape the way readers use it to create meaning". Other authors also consider the benign and key influence of technology on the construction of eportfolios (Tur & Urbina, 2012b). For instance, we have observed the possibility for complex organisation and text composition offered by hypertext to the construction of eportfolios (Yancey, 2004; Akçil & Arap, 2009; Tosun & Baris, 2011). Also, Lane (2009) argues that not all tools can be useful for all eportfolio purposes. From these words we can deduce that depending on our choice, we will enhance eportfolio:

> The particular tool employed at an institution has a significant influence on pedagogical options: It can be an aid, enhancing traditional practice; a limitation, presenting obstacles to some activities; or a driver of change, making new options possible (p.150).

Recently, it has been argued that technology can be important to provide scaffolding (Rubio & Galván, 2013) and feedback (Akçil & Arap, 2009).

Yancey (2004) has argued an interesting point of view that considers eportfolios as complex texts, something which is empowered through electronic-based portfolios rather than paper-based ones. Yancey states that electronic portfolios allow the creation of multiple layers including a wide range of languages beyond written language such as the use of images and multimedia, which makes eportfolios "different in kind rather than degree" (Yancey, 2004, p.747). Hypertext is for this author a key process that helps in the construction of a "single, unified text through which various fragments, rational and intuitive, are related to each other, directly and associatively" (Yancey, 2004, p.751).

II. Eportfolio framework

There is a wide variety of conceptual interpretations of eportfolios (Shroff, Trent & Ng, 2013) but our eportfolio design is based on the learning portfolio (Zubizarreta, 2009) though electronically based. Zubizarreta (2009, p. 20) defines the learning portfolio as follows:

> The learning portfolio is a flexible, evidence-based tool that engages students in a process of continuous reflection and collaborative analysis of learning. As written text, electronic display, or other creative project, the portfolio captures the scope, richness, and relevance of students' intellectual development, critical judgment, and academic skills. The portfolio focuses on purposefully and collaboratively selected reflections and evidence for both improvement and assessment of students' learning.

Based on this conceptual basis, there are three fundamental eportfolio references from which we construct our own framework where openness is a basic condition. First of all, Cambridge (2009; 2010) has argued the construction of two selves on eportfolios to represent one's own authentic identity: the *networked self* and the *symphonic self*. The former is focused on networking, connecting artefacts and gadgets, quickly collecting evidence of learning and a brief reflection during the learner's daily life. The selection of tools for networking is in itself a process that communicates the learner's own identity. All these activities are integrated into everyday life, which means that this self is based on chronological documentation of learning. The *symphonic self* reorganizes all this daily and disparate activity into thematic topics so that learners can show authenticity and integrity in their identity, which is a challenging goal for eportfolio authors. This self needs time and calmness for deep reflection that can help to interconnect artefacts and evidence and give a global vision of the whole learning process. Therefore, Cambridge's selves need a selection of tools that can empower both eportfolio processes. We posit that blogs and social media tools can empower the construction of the *networked self.*

Secondly, Barrett's model (2009; 2010; 2011) consists of three steps in the construction of eportfolios: creation of artefacts, selection and collection of learning evidence based on a chronological basis, with a thematic basis. The first and second step have a lot to do with the construction of the *networked self* and the third, with the *symphonic self*, as has already been argued (Tur & Urbina, 2012b). It has also been affirmed that the construction of artefacts with social media is a way of empowering students' PLE or Personal Learning Environment (Tur & Urbina, 2012a), which is a process that would lack any sense if it were not open. Finally, we would not argue the same level of openness for the third step (Barrett, 2009; 2010; 2011) or the *symphonic self* (Cambridge, 2009; 2010) as we understand it as a more internal cognitive process, although more research would be needed to prove this final statement.

Thirdly, Zubizarreta's portfolio model (2009) includes the processes that have become a classic in eportfolio scientific literature: reflection, documentation and collaboration. Thus, we argue that blogs can empower each of these processes: documenting is empowered by the numerous tools offered by social media; collaboration and reflection can be especially empowered by the open characteristic of Web 2.0.

Eportfolios have been contemplated for diverse uses in education. Karsenti, Dumouchel and Collin (2014, pp.3487-3489) have summarised the use of e-portfolios as follows:
- The exposure function, which is aimed at demonstrating the development of professional skills
- The reflective function, very much related to the metaphor of learning as journey, which is based on the connection of past and future learning (Parkes & Kajder, 2010; Cheng & Chau, 2012; Parkes, Dredger & Hicks, 2013). Beyond reflection, eportfolios have been useful in learning activities designed for self-regulation aims (Alexioua & Paraskeva, 2010).
- The assessment function. Along with reflection, eportfolios have been very much argued as an alternative for authentic assessment of learning, especially, in order overcome test-based assessment (Kitchenham & Chasteauneuf, 2009; Genc & Tinmaz, 2010). Some research, however, has observed the resistance of students towards assessment through eportfolio (Üstünel & Duren, 2010).
- The social function, which was initially less attended by research and educational implementation (Garrett, Thoms, Alrushiedat & Ryan, 2009; Garrett, 2011) probably

because initial electronic platforms were not much aware of it; but which is currently being revisited since the affordances of social media have been claimed to enhance learning through collaboration.

III. Blogs for the construction of eportfolios

The step from paper to electronic portfolios was firstly carried out through virtual environments such as Moodle or other home-grown platforms as has been documented in some of the pioneers educational experiences in Spain (López Fernández, 2008; López-Fernández & Rodríguez Illera, 2009; Guasch, Guàrdia & Barberà, 2009). However, since the initial steps, social software has changed the learning digital environment dramatically and thus, the eportfolio activity.

The affordances to overcome isolation and for collaboration among peers and teachers have been considered as one of the most powerful advantages of blogs for the construction of eportfolios in diverse levels of the educational system (Chuang, 2010; Or Kan, 2011; Karsenti, Dumouchel & Collin, 2014). It has been stated that blogs enhance the sense of community and interaction among its members (Halic, Lee, Paulus & Spence, 2010; Top, 2012; Aguaded, López Meneses & Alonso, 2010; Santoveña, 2011). Attwell (2012) has considered the new processes introduced by social media on eportfolios, such as networking. We have now been talking about social media for a long time. For instance, Tosh and Werdmuller (2004b) maintain that closing eportfolios on one isolated platform can lead us to miss the deep approach of social interaction facilitated by blogs and the Web 2.0, which can become the new "learning landscape" (Tosh & Werdmuller, 2004a, p.7). Ivanova (2008) argued that social media have already been a new driving force for eportfolios and Crichton and Kopp (2008) also predicted the deep impact of social media on eportfolios and the way in which students will address their portfolio task.

As for blogs, many authors have also stated the optimal conditions of this tool for the construction of key eportfolio processes, such as learning documentation and the related reflection. It has been argued that blogs enhance the collection of learning evidence and the reflection of its own evolution (Chuang, 2010; Deng & Yuen, 2010; Conole & Alevizou, 2010; Barrett, 2011; Cambridge, 2010). Also, it has been said that they improve written communicative competence and reflective writing (Arslan & Sahin-Kizil, 2010; Baturay & Daloglu, 2010). Apart from the cognitive impact, researchers have maintained the impact on students' motivation through blog-based eportfolio, as Chuang (2010) has demonstrated. As for the technical level, it is important to highlight that blogs have been observed as eportfolio platforms for their ease of use (Fonseca, 2009; González Sánchez & García Muiña, 2011; Cabero, López Meneses & Jaén, 2013; Karsenti, Dumouchel & Collin, 2014).

The tool also influences the representation of the eportfolio owner's identity, as some authors have stated. Berrill and Addison (2010) have stated that the owners' identity is not only represented by the eportfolio content but also by its layout and design: the use of italics, bold typography, tables, and photos, colour background and so on do indeed tell us a lot about the owner of the eportfolio. Young (2009) has also said that the mixture of written text and visuals help us to understand the reflection process beneath, as well as the evolution of the learner's identity. Finally, Parkes and Kajder (2010, p.224) argue that they changed the eportfolio platform of their own research from a LMS to a Wordpress blog so that students could "choose the look or design of their Wordpress Blog

to best represent themselves with a fuller teacher identity". Moreover, blogs have been used in learning activities aimed at the construction of teacher identity (Hanuscin, Cheng, Rebello, Sinha & Muslu, 2014). Nontheless, blogs are owned by students themselves, which can be engaging considering that some research has highlighted the importance of ownership (Buchem, 2012; Shroff, Trent & Ng, 2013; Buchem, Tur & Hölterhof, 2014a; 2014b).

Finally, there is a large amount of research on students' perceptions on the construction of their learning eportfolios on blogs and, positive perceptions are the most common conclusions. For instance, there are studies that conclude student perceptions on their development of digital skills (Goktas & Demirel, 2012) and on the learning impact (Halic et al. 2010; Top, 2012). It is important to highlight that there is an interesting line of research that explores eporfolios in teacher education in diverse ways, such as the positive perceptions by student teachers (Deng & Yuen 2010; 2012) and, the importance of eportfolios in the enhancement of their reflective skills (Almeida & Teixeira, 2012).

Blogs have been widely used as eportfolio platforms for a long period of time and numerous educational experiences have been reported. However, based on student teacher perception and performance, this paper explores and attempts to summarise affordances and limitations in the construction of eportfolios in the social media environment.

IV. The eportfolio implementation

At the local branch in Ibiza of the University of the Balearic Islands, an eportfolio project has been implemented since the 2009-2010 school year. The implementation of electronic portfolios has two main aims: documenting the construction of student teacher identity during their time at University and introducing ICT into our global Teacher Education programme.

The eportfolio platform is based on blogs for the many affordances that were theoretically observed, as previously stated. Students' are asked to document their learning throughout their four-year-programme of Early Childhood Education. Lecturers who join the project ask students to document their learning through their eportfolio. At the end of the programme, student teachers have the possibility to submit a final presentation eportfolio for their capstone evaluation. Thus, while constructing their eportfolio during the process of becoming a teacher –the networked self- they also focus on reflective skills, which is less important than the final eporfolio –the symphonic self- as argued by Almeida and Teixeira (2012). Every graduation class is provided with an open environment in which to share their eportfolios in order to foster peer support and co-assessment, based on the concept of netfolio by Barbera (2009). The netfolio created for this first graduation class implementing the eportfolio can be found on a Netvibes site.[1]

a. Study approach
The study carried out is presented from a qualitative methodological perspective. The strategy used has been the case study, with the aim of understanding and interpreting both the use and the perceptions of participants about their eportfolios.

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[1] URL: http://www.netvibes.com/eportafoliodestudis#Eivissa%2C_A-_Gal

The main research questions are related from the affordances derived of the technical characteristics of blogs as eportfolio platforms. Thus, this case study explores some aspects highlighted in the scientific literature review such as, if blogs used as eportfolios enhance technical learning, openness and the construction of identity.

b. The group of participants

The group of participants consists of 31 student teachers, two male and 29 female. Only 8 students were born before the 80s and the remaining 23 afterwards. Students had never heard of eportfolio and neither had had they ever a blog.

c. Approach and instruments for the collection and data analysis

Three instruments are developed for this two-year research on the perceptions of student teachers towards blog-based eportfolios. Firstly, a rubric is built to assess student performance on eportfolios. The rubric has seven items divided into three topics: eportfolio structure with three items, which are presentation, conclusion and the development; eportfolio evidence with two items: reflection and artefacts; and transversal issues such as the use of language and the use of technology on the eportfolio (Tur, 2013). Each item has four levels of performance, which receive points from nought to three: poor (0 points), adequate (1 point), good (2 points) and very good (3 points). The description of each level of the rubric was made after an in-depth scientific literature review, briefly introduced in the theoretical framework of the article. Therefore, the highest level of items of eportfolio structure are related to concepts such as authentic learning and identity as Cambridge describes it (2009; 2010); the level with higher quality about reflection contemplates students' skills for self-regulated learning (Alexioua & Paraskeva, 2010). Technology is integrated in more than one item of the rubric: in the content development item, the creation of artefacts, contemplates the use of open licenses and respect of authorship in levels 2 and 3; and the technology item in itself, where we observe if the eportfolio design is used to represent learning. The use of hypertext technology is observed in the creation of complex text, which can be seen in level 3 of the communicative competence item of the rubric.

Group discussion was also carried out to collect students' perceptions. Afterwards, a system of categories is also developed to analyse their answers and opinions. The system of categories built from analysing group discussion and from previous study of scientific literature, consists of four families of categories, with between ten and fifteen categories in each one. Due to space limitation, we only present the results of one family of categories related to the procedural aspects of the eportfolio construction. In order to explore the connections of the categories, the complete family can be seen in the following section of this paper, in the introduction of the results obtained. Categories are represented with an acronym built from the original concepts in Catalan. For the same reason, we only present the global results of the rubric applied.

V. Results

Here we show the results obtained with the application of the rubric and the analysis based on the system of categories. The rubric was applied to blogs created in the first two school years and the group discussion was held during both school years. We give some general information so that an image of the whole project can be obtained. We also give detailed data so as to be able to argue our final conclusions based on proven evidence.

a. Data collected from the rubric

Global results of both school years show the general poor performance on students' eportfolios: half of the blogs assessed are poor or simply adequate, while only a very low percentage are good and none of them is excellent. This represents clear evidence of the difficulties found when implementing eportfolios for the first time, although there is a slightly higher percentage (total of 51,9%) of blogs that are good (4,3%) or adequate (47,6%) than the ones that are poor (48,1%).

If we pay attention to the results of each school year, it can be observed that blogs are improved in the second year, which was positive for the implementation of the whole project and future development. Thus, the only blogs that are good (8,7%) appear in the second school year, and the ones that are adequate (67,4%) outnumber the ones that are poor (23,9%) – which is exactly the opposite of the results obtained during the first school year (71,6% of poor and 28,4% of adequate).

Results of rubric

Under each heading, we show the general results of the two school years in table 1. Items that achieve the highest number of blogs at the lower level are: presentation, conclusion, artefacts and reflection. The development of the eportfolio, artefacts and the use of technology are the items that achieve the greatest number of blogs at the highest level. Presenting, concluding and reflecting are typical eportfolio tasks, so we can deduce the existence of general difficulty in achieving eportfolio processes. However, the items related to technology are those that achieve the highest mark, which may be indicative of a tendency of students to use technology for the construction of eportolios. The fact that the item "artefact" is also at the lowest rate is because criteria referring to the use of creative commons resources in the creation artefacts were not respected during the first school year, something that dramatically improved in the second school year. It is also noticeable that the item "communicative competence" is only partially achieved, and hardly any blogs achieve the highest level. This is significant since it means that language used on blogs has no spelling issues (level 1) but it also means that blogs do not become complex texts, connecting each piece of evidence so that the blog forms a cohesive and coherent text (level 3).

	09-11			
	0 POOR	1 ADEQUATE	2 GOOD	3 EXCELLENT
Presentation	50,8%	43,9%	4,3%	1%
Development	20,9%	47,6%	26,2%	5,3%
Conclusion	82,9%	12,3%	3,7%	1,1%
Artefacts	57,2%	17,1%	10,7%	15%
Reflection	39,6%	39,6%	20,8%	0%
Communicative competence	17,6%	67,4%	14,4%	0,6%
Technology	27,8%	41,2%	25,7%	5,3%

Table 1. General results per item of the rubric applied. Biannual 2009-11

b. Data collected from group discussion and the system of categories

There were two interviews group discussion sessions each school year, which were analysed with the use of a system of categories built ad hoc and previously validated. The analysis allowed us to explore a wide range of topics, from which only some categories of one of the dimensions is explored here.

Dimension of the process of constructing an eportfolio

From this family of categories we can argue the findings obtained about technical learning, openness and the construction of identity. The categories of this dimension directly related to our topic of research are limited to three: the first one is "openness and sharing" (DPR1) and refers to students' comments about the possibilities of collaborating with others due to the open characteristics of their eportfolios; the second one explored is that of "technical learning" (DPR3); and finally, the third is related to design and identity (DPR7). However, here we present all data collected from this family of categories, as there is a strong relationship between those referring to openness and all the rest. We also present the number of times that each topic has been debated in both discussion groups so as to be able to see their evolution over the two-year period.

Most categories of this dimension have more repetitions in the second school year, after students had been working with their eportfolios during the previous school year. Therefore, the number of times that openness is debated, whether considered as an advantage or as a disadvantage, also increases in the second school year. However, general results show much more repetition of the topic of openness as a disadvantage rather than as an advantage. In the following section, we can see the relationship of openness to other categories, which allows us to see the concrete advantages and disadvantages that students see in openness.

Procedural dimension (Advantages and disadvantages, personal strategies, project organisation…)	Code	Number of repetitions 2009-10	Number of repetitions 2010-11	Total number of repetitions 2009-11
Eportfolio advantage: openness and sharing	DPR1	4	12	16
Eportfolio advantage: learning history	DPR2	1	7	8
Eportfolio advantage: technical learning	DPR3	0	15	15
Eportfolio advantage: language awareness	DPR4	5	7	12
Eportfolio advantage: learning empowerment	DPR5	0	23	23
Eportfolio advantage: useful for their programme	DPR6	1	10	11
Eportfolio advantage: design and identity	DPR7	2	2	4
Eportfolio advantage: methodological change and innovation	DPR8	6	0	6
Eportfolio disadvantage: conditional process (assessment)	DPR9	6	19	25
Eportfolio disadvantage: compulsory	DPR10	5	11	16
Eportfolio disadvantage: time needed	DPR11	5	10	15
Eportfolio disadvantage: workload	DPR12	1	5	6
Positive scaffolding during the process (coordination, colleagues)	DPR13	14	13	27
Project organisation	DPR14	7	20	27
Personal strategies (personal characteristics, and strategies, attitude, personal resources, personal development, personal assessment of achievements)	DPR15	28	36	64
TOTAL		85	190	275

Table 2. Procedural dimension. System of categories. Number of repetitions

c. Graphical representation

Scientific software is used to graphically represent the relationship between categories. The following figures, which were built with Atlas.ti software, represent the connections of categories in the second school year. Graphics of the first school year are not shown, as the debates on the categories were much simpler and are easily described without a need for visual support.

As for the dimension on the process of eportfolio construction, we show graphically the connections in the same family of categories and the connections of categories explored with the rest of categories in the dimension over both school years. We only show some dimensions (DPR1, DPR3, DPR7) because they are the ones specifically related to the basic arguments about blogs for the construction of eportfolios.

Category: Openness and sharing (DPR1)

In the first school year, there is one only connection of openness (DPR1) in its family, which shows the positive idea that openness makes students aware of their use of language (DPR4), which means that they were concerned about writing correct and coherent texts. Beyond its own dimension DPR1 shows connection with positive feelings of the personal dimension (DP), such as the admission of having liked the tools used for the eportfolio construction (DP1) and the satisfaction they feel (DP4).

In the following school year (graphic 1) DPR1 is related to many more categories. Thus, openness as a topic is more frequently debated with more connections during the second school year, which allows us to observe the progressive concern of student teachers about the topic. On the one hand, openness is described in positive terms as students give reasons of why openness has had an impact on their learning: technical learning (DPR3), learning empowerment (DPR5), and the scaffolding process (DPR13). On the other hand, this positive argument contradicts the emergence of other rather negative categories of the procedural dimension (DPR) such as that relating to the time devoted to an open eportfolio (DPR11) and the assessment (DPR9). Some other categories (DPR 14 and 15) appear from the procedural dimension that had not appeared in the previous year. These categories appear because of their connection with the expression of appreciation (DP1) and of motivation (DP4) and show their personal strategies regarding the task (DPR15) together with some criticism of the organisation of the project implementation (DPR14).
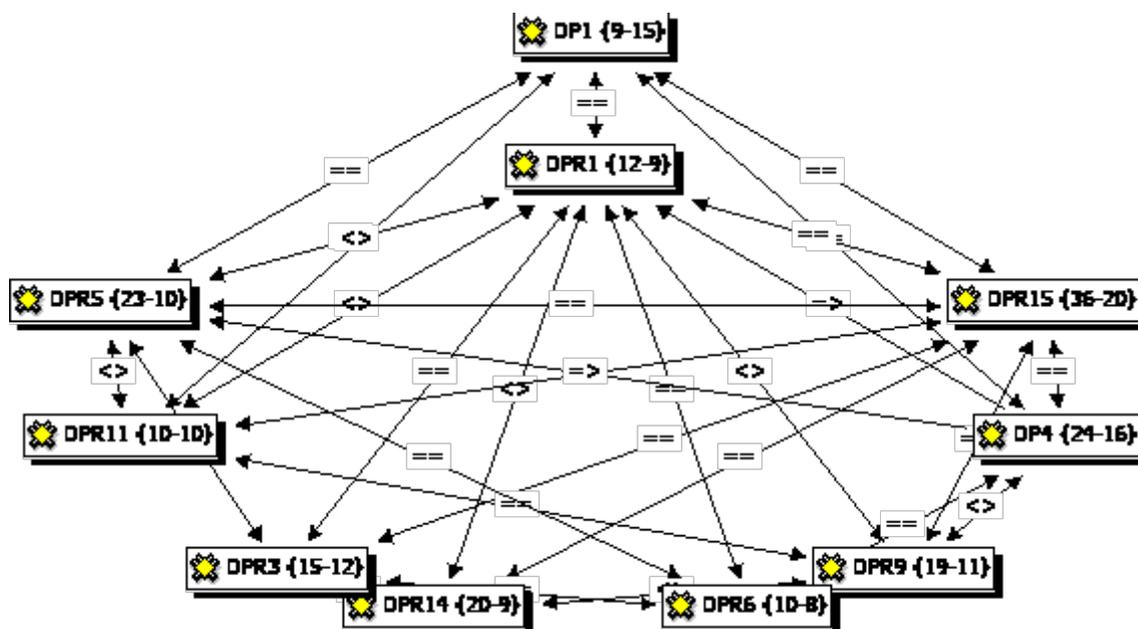

Graphic 1. Category of openness (DPR1). School year 2010-11

The fact that in openness is related to the category of assessment reveals a negative aspect, which the research design had not expected. Therefore, a look at this category allows us to observe its own evolution over this period. In the first school year the problems of openness as a conditioning element of assessment (DPR9) are connected, for the first time, to personal effort in order to improve their eportfolios (DP7) for which personal strategies are developed (DPR15) in spite of the lack of motivation (DP4). The few connections could illustrate the lack of concern about openness. The second school year connections of DPR9 are very similar to connexions of DPR1 (graphic 1). A more complex narrative by students can indicate a major concern about openness. Although there is willingness for the task (DP7), there is greater resistance as shown by negative attitudes (DP5), such as anxiety towards the openness of their eportfolios. Some other complaints are expressed such as the compulsory nature of openness in their eportfolio assignment (DPR10).

**Category: technical learning (DPR3)**
As observed in the previous category, technical learning is less commented in the first school year than in the second, which allows us to think that there is a progressive awareness about the development of their digital competence. The category of technical learning is related to other categories of the same dimension of the process (DPR) that suggest a positive narrative: openness and sharing (DPR1), learning empowerment (DPR 5) and the future new usages of the process at University (DPR 5). However, there also exists a negative narrative based on the criticism to the eportfolio implementation organisation (DPR14) and its compulsory nature (DPR10) for which students develop personal strategies to overcome derived difficulties (DPR15). This category is also related to other dimensions: technical dimensions (DT) which is about students discuss on the need for introducing ICT in education and their previous unawareness of this new vision in education; and, the personal dimension (DP), related to feelings and attitudes towards the construction of their learning. The categories referring to the former allow us to observe that students had irregular previous experience of technology (DT6 and DT7) but that they consider blogs as intuitive tools easily learned (DT9). As for the latter, it can be said that students had contradictory feelings and attitudes as they expressed both positive (DP1) and negative (DP5) emotions.
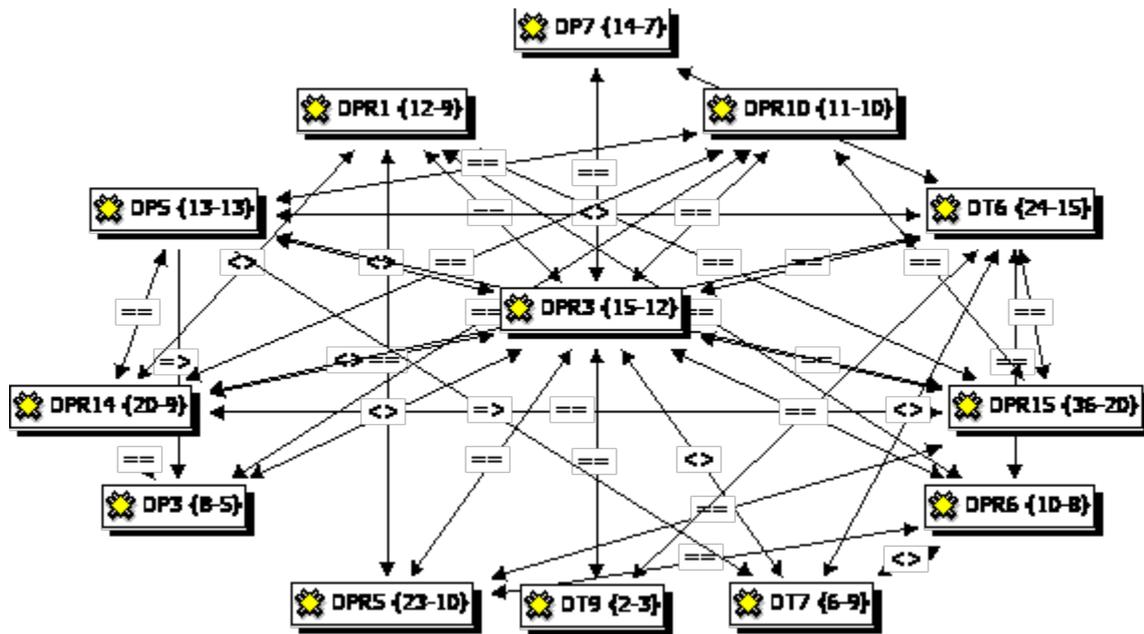
Graphic 2. Category of technical learning (DPR3). School year 2010-11

Category: design and identity (DPR7)

The construction of student teacher identity (DPR7) has some timid presence over the two-year period, regarding the number of references and connections in each year. So, in the first year, it is briefly commented and the connections note a discourse based on personal strategies (DPR15) and their willingness to continue in the future (DP8). Category DPR7 is not very different in the second school year (graphic 3), but at least, it includes an utterance relating to positive feelings (DP4), which enables us to observe that the creation and representation of their identity on their own eportfolios motivates and engages student teachers.
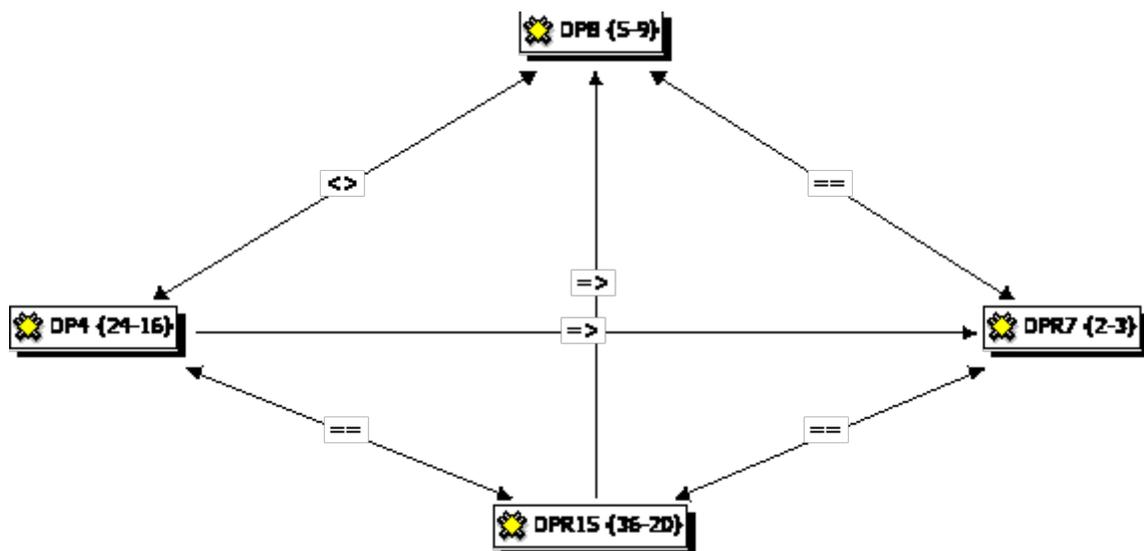
Graphic 3. Representation of their own identity on eportfolios (DPR7). School year 2010-11

It is somewhat contradictory the fact that student teachers only comment briefly on the possibilities of representation of identity on their eportfolio whereas the application of the rubric observes a high usage of technology in the adaptation of the blog design to their identity. This is extremely interesting, as students may not relate the design to identity but rather to other cognitive processes. Recent research on identity and ownership has demonstrated that the key factors for control and ownership are related to both tangible and intangible elements (Buchem, 2012; Buchem, Tur & Hölterhof, 2014a; 2014b).

VI. Discussion

Data collected from students' perceptions the quality of which is demonstrated through the application of a previously constructed rubric allows us to discover some unexpected advantages or confirm some others that had been theoretically expected. However, it must be said that there are two groups of affordances observed, depending on the data obtained. That is to say, that there is a group of advantages that have been totally proved, and there is another group of affordances that have only been partially demonstrated.

There are three characteristics that can be totally proved. First of all, no issues have been observed on blogs as a platform in the documentation of learning on a chronological basis. Therefore, blogs do answer the necessity of documenting learning through the first two steps defined by Barrett (2009; 2010; 2011) or the *networked self* defined by Cambridge (2009; 2010). Secondly, data collected in group discussion confirm that blogs are easy services for students, which confirms the abundant previous research (Fonseca, 2009; González Sánchez & García Muiña, 2011; Cabero, López Meneses & Jaén, 2013; Karsenti, Dumouchel & Collin, 2014) and that the fact of using it allows students to develop their own digital competence as concluded by Goktas and Demirel (2012).

There are three other characteristics that can be argued as affordances, but data collected only shows partial achievement, which may recommend future research so as to be able to highlight possible issues. Firstly, there are some data that allow us to conclude that blogs enable the construction of students teacher identity on their eportfolios in line with previous research has stated (Berrill & Addison, 2010; Young, 2009; Parkes & Kajder, 2010; Hanuscin, Cheng, Rebello, Sinha & Muslu, 2014). The number of mentions of this topic is not really high. Nonetheless, when referring to the topic, students offer only positive statements about this idea. The results of the rubric on technology, where this idea is included, equally fail to reach the highest level. Secondly, the networking activity, which we consider to be a key process on Web 2.0 eportfolios is not totally demonstrated from the results of the rubric in the item "technology" where it is included, at level three. Thus, although, the use of blogs could also be justified for the possibilities for networking as suggested by Cambridge (2009; 2010), results demand further research in order to obtain more data that might allow us to observe a higher use of blogs to network with others for learning aims. Thirdly, the eportfolio as a complex text through the use of hypertext and hypermedia –as understood by diverse authors such as Yancey (2004), Akçil and Arap (2009) and, Tosun and Baris (2011)- is not achieved, based on a consideration of the results of the item "communicative competence" in the rubric applied. Students have begun using this possibility of social software writing, but they have in no way achieved an optimum level.
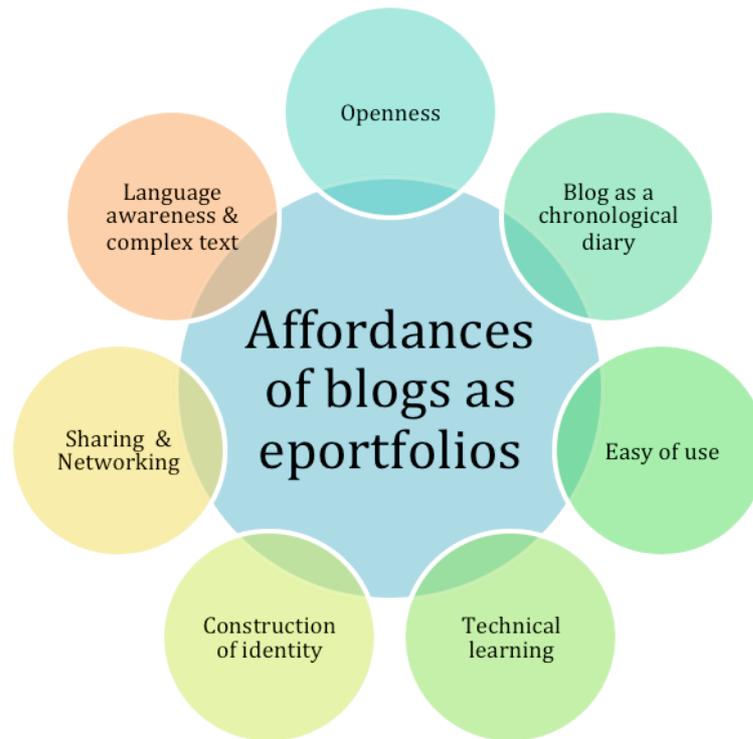
Figure 1. Affordances of blogs as eportfolio

On the other hand, data collected through the afore-mentioned instruments, also highlight some unexpected disadvantages or limitations. Moreover, some disadvantages arise from the advantages observed, which means that there are some characteristics social of media that can have both positive and negative effects on eportfolios.

There are two limitations that have been observed at a theoretical level from the very beginning of the project implementation, although no data refer to it. However, we think it is important at least to point them out, so that future research can look for data that may accept or reject these theoretical limitations. First of all, we think that blogs are only useful for the first two steps of constructing an eportfolio defined by Barrett (2009; 2010; 2011) or the *networked self* defined by Cambridge (2009; 2010) but it is not useful for the third of Barrett's steps, the presentation step, or Cambridge's *symphonic self*. The chronological update of blogs has been totally optimal as a way of documenting learning but we do not think it would serve to document learning based on topics or an achievement basis. Secondly, the assessment process cannot be documented on the same blog or social media service along with the learning evidence as in this way it would be totally public, which would not seem correct. A specific and flexible eportfolio platform allows the validation and grading process of eportfolio assessment, which Attwell (2005) describes, to be archived with the learning evidence itself. Considering the fact that blogs do not have flexible options for openness, we do consider that the assessment process should be carried out separately from the open eportfolio, which is to some extend a limitation of these kinds of tools as eportfolios.

Finally, openness, although having been designed as an affordance, also appears in our research project as a limitation. Students think that it conditions the whole process of constructing the eportfolio, as the results of the system of category reveals.
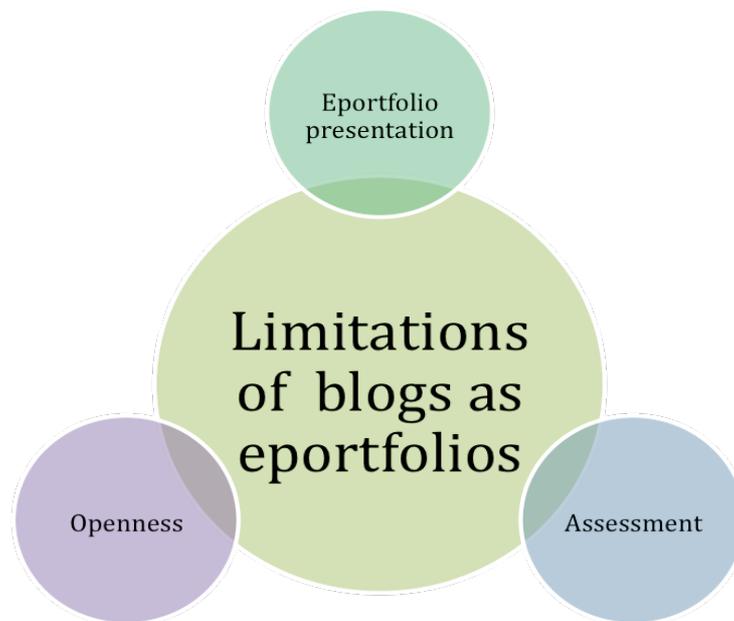
Figure 2. Limitations of blogs as eportfolios

Therefore, openness is the characteristic that had been designed as an affordance, and research shows its double-edged effects, as Tur and Urbina (2013) have already argued. Although students value the importance of openness for sharing, they also think that it conditions the documentation learning process. Data collected show a general positive attitude towards open eportfolios, as student teachers value the opportunity for sharing: they admit having learnt from each other by accessing and reading colleagues' eportfolios. They have observed their major concern about the use of language, spelling and the global coherence of their texts. Nonetheless, data collected have also highlighted some negative effects of open eportfolios. Student teachers have admitted to having felt anxiety about the process of the open documentation of their learning process. They have also pointed out the problems of not balancing traditional assessment at University and open collaboration processes. The following graphics summarizes conclusions reached from student perceptions:

Figure 3. Opportunities and barriers of openness on eportfolios (Tur & Urbina, 2013, p.48)

To sum up, balancing the affordances and barriers observed, through both the revision of scientific literature and through data collection, we can see that that blogs and Web 2.0 tools have more

advantages than disadvantages. Thus, we have observed six characteristics that can be considered as affordances (chronological diary, ease of use, digital competence, identity representation, networking and hypertext) and two others that can be considered as limitations (chronological diary not suitable for all purposes and assessment), having to consider that one characteristic is both an strength and a weakness (openness). Although the disadvantages are quite relevant and may have an important impact on the whole eportfolio implementation, we think that strategies to reduce their negative effects can also be designed.
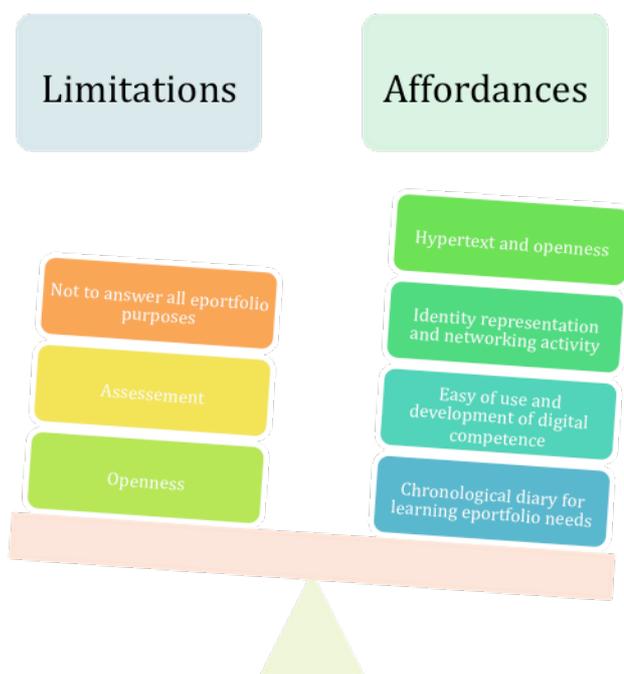

Figura 4. Greater weight of affordances than limitations of blogs as eportfolios

VII. Conclusions

Data collection allows us to answer research questions positively and observe other affordances and limitations of blogs as eportfolios. On the one hand, the concrete affordances explored can be argued as enhanced by the use of blogs. Thus, technical learning –object of one research question- has been observed in the results of rubric, since items related to technology are those which obtained highest mark during the two-year period and, since the analysis of discourse of student teachers demonstrate their perceptions of the development of their digital skills. Openness and identity are especially explored through the discourse analysis, and in both cases, students demonstrate positive perceptions of the implications of blogs for openness and sharing and for their representation of identity. However, the answer to the research questions on openness and identity must be answered with some negative observations. First of all, openness is related to assessment issues when students are asked to share and comment on activities assessed on an individual basis. Secondly, although identity is positively valued, the low level of references in discourse does not allow us to arrive to reach final and absolute conclusions.

Attending to the global research question, the study was based on some theoretical affordances, which were clearly demonstrated by the data collected. There are other affordances that cannot be totally proved, since results obtained do not achieve sufficiently high levels so as to be able to totally confirm them. Therefore, further research may need to discover more indisputable data to confirm them as affordances. The disadvantages that are finally concluded were also predicted as disadvantages from the very beginning. The project implementers were aware that the blog could not be used for final steps of student teacher eportfolios and that assessment had to be carried out separately from the eportfolio platforms used.

Finally, further research will have to observe the influence of tool control on psychological ownership and thus, learning improvement, as has been already suggested by previous research (Buchem, Tur & Hölterhof, 2014a; 2014b). Finally, further research should extend the exploration of blogs for the development of digital skills. Currently, there is an important line of research that gives a more global overview of the development of digital competence, based on the enhancement of students' Personal Learning Environment or PLE (Tur & Marín, 2013). Nontheless, PLEs and blog-based eportfolios are closely related concepts in innovative educational experiences (Castañeda & Soto, 2010; Santamaria, 2010; Tur, 2011; Tur & Urbina, 2012a). Thus, further research should contemplate the introduction of the concept of PLE to explore the affordances of blogs and other social media platforms for the construction of eportfolios.

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