Using blogs to improve professional competencies among undergraduate students

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Abstract

Advances in information and communication technologies, and the introduction of competency-based educational approaches promoted as a result of the participation of universities in the construction of the European Higher Education Area (EHEA) are demanding urgent changes in teaching methodologies and in the role of students. In this context the article proposes and assesses how blogs can become a useful learning tool for the acquisition of professional competencies. Students were asked, after opening a personal blog, to introduce the activities carried out in class as well as their reflections on the Practicum period, and to use labels as an element of self-reflection on the degree of acquisition of the competencies worked on. In order to assess the experience, a self-report questionnaire was used, which was completed by 82 students. This information is complemented with an analysis of the contents published in the blogs. Among the results obtained it is worth highlighting that students did not always have extensive knowledge of blogs as a technological tool, a fact that must not be overlooked if blogs are to be included in university courses. The study also showed that participating students valued blogs as a valid instrument for the acquisition of professional competencies, were satisfied with the teaching-learning-teaching process achieved, and recommended their use at university level.

Highlights:
Blogs are a support to reflect on the acquisition of professional competencies.
The use of labels gives guidance to students on the acquisition of their competencies.
Blogs have potential benefits as interactive and communicative tools.
Feedback from teachers helps students increase their professional competencies.

Keywords
blog, Higher Education, competencies, reflection

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I. Introduction

Competency-based educational approaches and the introduction of information and communication technologies (ICT) in university classes are two of the key elements that have characterized the redesign of curricula in Spanish universities following the construction of the so-called European Higher Education Area (EHEA), which was launched in order to agree on learning standards between European universities. Although these two additions are justified by different (and occasionally contradictory) arguments, the truth is that today they represent much of the instructional innovation taking place. Their emergence has been so fast that, in only a few years, a host of case studies, studies and research have proliferated in this field (Aguaded, López, & Alonso, 2010; Bartolomé, Cano, & Compañó, 2011; Portillo, Iranzo, & Rosselló, 2013).

Adopting the recommendations of the Organization for Economic Cooperation and Development (OECD) (2002, 2005), many universities have introduced academic, cross-curricular and professional competencies into the core of their syllabi. Zabalza & Escudero (2004) point out that competencies constitute applied abilities that enable people to know how to recognize the relevant problems of a profession, to know how to prevent and detect their existence in real or simulated situations, and to know how to organize their solution. Meanwhile, Pérez García (2008) holds that the notion of professional competency refers to problematic situations that require mobilizing the knowledge to make decisions and to act in an appropriate manner in the work context.

While competency-based approaches have been conceptualized in different ways, in our context what has predominated is the idea of understanding competencies as the ability to mobilize all sorts of resources (cognitive and social, among others) in order to make decisions and resolve complex situations efficiently in every context. As Cano, Portillo & Puigdellívol (2014) explained, "being competent involves choosing and combining the knowledge available in a pertinent way in order to address a situation" (Cano et al., 2014, p. 9), a definition that supports the so-called competency-based learning approach. In the words of Palmer, Montaño & Palou (2009, p.438),

Competency-based learning is not merely educational technology aimed at the immediate performance of skills, but rather it involves the comprehensive education of students, as it covers both theoretical knowledge and personal attitudes and commitments, which range from knowing and knowing what to do to knowing what to be like and knowing how to be.

Competency-based learning involves a strategic and methodological change that must go hand in hand with a new psychoeducational approach and the provision of training and the necessary resources to make its materialization possible (Area, 2010; De Miguel, 2006). Some key ideas and psychoeducational implications that derive from this model lie in the contextualization of problem-based learning; students' reflective and autonomous action; mobilization not only of knowledge but also of skills and attitudes; the importance of the process and progression in learning.

The approach has also had some critics who see this as the subordination of educational institutions to the overwhelming demands of the job market (Boutin & Julien, 2000; Crahay, 2006).

The incorporation of this new competency-based approach has coincided with the massive ICT boom at universities, who are using it to transform teaching, attempting not to get left behind in the continuous technological change. The term ICT includes a wide spectrum of tools, but this article focuses on the use of blogs within the university context.

A blog – also known as a weblog – is an online journal that users can continuously update, in their own words, online (Matheson, 2004). Blogs use a simple interface to make it easy for any user to construct, without having to understand HTML or web scripting. Furthermore, a blog is interactive (Rodzvilla, 2002), in the sense that readers can respond with comments in just a few steps. Writing for blog posts tends to be more in-depth and extended compared to a discussion board or email, but less formal than for an essay or paper (Farmer, 2006). In addition to text, blog posts can include pictures, links to other websites and embedded multimedia. Compared to conventional learning management systems, such as Moodle and Blackboard, students find blogs more intuitive to use (Kim, 2008; Tekinarslan, 2008; Thurman & Schapals, 2016).

Blogs enable the classical limitations of space and time in traditional education to be broadened. At a technical level, they are an easy-to-use, simple, free tool. In addition, they are accessible from anywhere, efficient for organization of content, enable interactivity, and allow the creation of permanent links. They are a 'hybrid' resource where comments, professional-type links, reflections and anecdotes are mixed with places and other network tools (Santoveña, 2011, p. 60).

According to Cabero et al. (2009, p. 3), blogs can be used under a broad range of methodological strategies: "discussions, problem-solving or case-analysis, interviews with experts, development of group projects or preparation of electronic portfolios". Bartholomew, Jones & Glassman (2012) emphasize that blogs enable students to investigate the universe of knowledge to take this to the blogging community in itself. For Santoveña (2011), blogs are, fundamentally, collaboration and participation tools, illustrating the shift in teaching paradigm that universities are experiencing.

Among the negative aspects of blogs' application at university level, studies basically describe three points: a high drop-out rate in their use (González & García, 2011); problems related to respect for authorship in terms of the content published (Tekinarslan, 2008); and the huge volume of work entailed both for students and teaching staff (Martínez & Hermosilla, 2010). In addition, researchers have identified potential negative impacts social web technologies such as blogs may have on student learning. For instance, the public nature of blogs may create anxiety among some students who need to make their work visible to a broad audience (Hurlburt, 2008). Further, the adoption of social web technologies could challenge the existing assessment standards and procedures and academic integrity (Waycott, Sheard, Thompson, & Clerehan, 2013).

Based on these initial considerations, the project that we present addresses the challenge of using blogs for learning and development of professional competencies at the university level. A review of the literature reveals diverse lines of research in this direction.

In early research there are experiences using blogs as a lab notebook (Balagué, Forés & Gros, 2007) or as a class notebook in different subjects (Churchill, 2011; Orihuela & Santos, 2007; Salinas & Viticcioli, 2008; Molina et al., 2013), since they enable a chronological collection of evidence and the final presentation of the learning achieved. These experiences revealed an improvement in the processes of written expression and promoted a positive attitude towards the writing process. In other cases they were used in an attempt to promote a sense of community and collaboration between teaching staff or students or between both groups (Buchem & Hamelmann, 2011; Cuesta Morales, 2011; Halic, Lee, Paulus & Spence, 2010; Tekinarslan, 2008), facilitating horizontal communication, motivation for participation and individual and group expression (Santoveña, 2011) and helping to develop social and civic skills

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(Redecker et al., 2009).

There are also projects whose fundamental aim focuses on the development of digital competence through the elaboration of electronic portfolios and other tools that foment the construction of a personalized learning environment (Dos & Demir, 2013; Isakovik & McNautght, 2013; Prestidge, 2014; Tur, 2011). Goktas & Demirel (2012) note that students view blogs positively and consider them a powerful tool for improving their digital competence and identity. Along the same lines, other research studies (Halic et al., 2010; Top, 2012) coincide in that students view the learning experience with blogs positively as it facilitates collaboration in the construction of knowledge, helping to understand the content worked on. Meanwhile, the study by Hanuscin, Cheng, Rebello, Sinha & Muslu (2014) shows how blogs can serve as a resource to support the development of the teacher identity not only in their role of teacher, but also as a leader, by taking advantage of all the benefits of this means of communication.

Finally, there are projects that promote students' reflection on the learning they achieve with regard to professional competences (Bartolomé, Cano & Compañó, 2011; Deng & Yuen, 2010). These projects promote reflection, documentation and collaboration, revealing the evolution of learning (Barrett, 2011; Cambridge, 2010; Chuang, 2010; Conole & Alevizou, 2010; Deng & Yuen, 2010; Tur & Urbina, 2012) and the acquisition of professional competences (Bartolomé, Canó & Companyó, 2011; Deng y Yuen, 2010; Rosselló & Pinya, 2013; Blanco, 2016). The use of multiple languages and the fact of being able to integrate audio and image (Deng & Yuen, 2010) expand the possibilities for reflection with the creation of videos (Parkes & Kadjer, 2010; Parkes, Dredger & Hicks, 2013) and open the way for making comments and linking to other websites, which facilitates collaborative and cooperative learning (Top, 2012). In short, as Deng & Yuen (2012) point out, students find blogs an adequate platform for self-expression, reflection and interaction with others.

The present article is framed within this last line of research, whereby we aim to focus on blogs as a tool to enable students to become involved in a process of reflection, following the guidelines of Killeavy and Moloney (2010, p. 1071) "A key area in professional development is the ability to reflect on practice as the basis for learning". As opposed to digital competence, this study takes the blog as the starting point for reflection on the acquisition and development process within the academic context.

a. Purpose of the study

This study aimed to answer a dual question: Is it viable to use blogs in the university classroom? How do students rate the experience in terms of usefulness, workload, feedback received, and final satisfaction?

Therefore, we had six hypotheses:

1. Students have a high degree of knowledge before starting the experience
2. The use of blogs in the university classroom must be accompanied by information and technical support
3. Students value the blog as a user-friendly tool at the technical level
4. Students value the usefulness of blogs since they relate to the other proposals in the subject and would recommend their use
5. Students consider a blog generates an excessive workload

6. Students express that the feedback giving by teaching staff and by colleagues contribute to improving their competences

It is worth noting that this study was part of a broader research project entitled "La evaluación formativa de competencias mediante blogs" [The formative assessment of competencies through blogs], project REDICE A 1002-04, which was carried out during the 2012-13 academic year in various university teaching contexts in Catalonia. The project promoted students' self-regulation in their own learning through regular, reflective contributions to blogs in order to assess competencies (Ion, Silva, & Cano, 2013).

II. Material and Methods

In response to the questions posed we used a mixed research methodology: first collecting students' comments through a questionnaire (quantitative), and then performing a content analysis (qualitative).The combination of methods makes it possible to give depth to the analysis and to better understand students' view of the incorporation of new technologies in the university classroom.

In a mixed methodology several sources of information are used that combine to support more comprehensive analyses regarding the education situation proposed (Bryman, 2007; Greene, 2008; Creswell, Shope, Plano-Clark & Green, 2006). In our case, the data collected through the contents of the blogs made by the students and the questionnaire enabled us to triangulate the information and collect the divergences and dissonances as well as the coincidences in the points of view.

A Pre-Experimental Design was used, more specifically a One-shot case study design, where a single group is studied at a single point in time after some treatment that is presumed to have caused change (Berganza & Ruiz, 2005). The carefully studied single instance is compared to general expectations of what the case would have looked like had the treatment not occurred, and to other events casually observed. No control or comparison group is employed.

a. Participants

In academic year 2012-2013 a total of 102 students enrolled in the third year subject in the Bachelor degree in Early Childhood Education at the University of the Balearic Islands, 82 of whom participated in the study, representing 80.39% of the total, which is highly considerable.

A convenience sampling method was used, that is a type of non-probability and incidental sampling that involves the sample being drawn from the part of the population that is close to hand. This sample population is selected because it is readily available and convenient, as researchers are drawing on population to which they have easy access.

As regards the general characteristics of the sample, it is worth noting:

• The sample was made up of students from two admissions pathways: 48.65% of students gained admission through a knowledge-based test, and 38.6% were admitted through vocational training. The rest (12.9%) did not indicate their admission pathway in the questionnaire.

- Most of the subjects surveyed were women (91.4%) although this was due to the normal distribution of the population in Bachelor Degrees in Early Childhood Education.
- 55.7% of the participants were between 20 and 24 years of age; 28.6% were between 25 and 30 years old, and only 15.7% were over 31. The median age was 25.9 years with a standard deviation of 6.765.

In the qualitative part of the study sample, the number of participants was smaller (n=40) because some individuals decided not to proceed with the study.

b. Instrumentation

A specifically designed, self-report questionnaire was used which took into account the questionnaires of Lin (2008) and Teo (2008); assuming the dimensions of analysis that Teo (2008) proposes and completing them with the proposals of Lin (2008) by incorporating the concepts of reflexive practices, development of effective learning strategies, and acquisition of digital competencies. Then we proceeded to adapt diverse items from the general questionnaire applied in the project, "The formative assessment of competencies through blogs", as did Cano, Portillo and Puigdellívol (2014) in their study.

It was made up of 15 questions, grouped in two dimensions: Technical aspects of the tool, and Pedagogical issues. The items in the questionnaire were posed using a Likert scale with scores ranging between 0 and 10, in which 0 means very poor and 10 excellent.

The questionnaire was subjected to a consensus process based on a Delphi Panel made up of 8 university lecturers knowledgeable in the subject. To carry out this validation we administered the questionnaire to the experts in its original format adding in each section the possibility of assessing the Pertinence and Relevance of each question, scoring from 1 to 4, where 1 is inappropriate and 4 very appropriate; in addition, a section on suggestions and observations was added to facilitate the contributions of the judges consulted. Two consultation rounds were carried out. In the first round, once the answers of the eight experts had been collected, an item-selection process was carried out to refine the instrument: three items were eliminated, two items were rewritten, and one new item was added at the proposal of the experts.

The items eliminated referred to technical aspects as, in the opinion of the experts, they had been considered in the items related to ease of use and technical support received; besides, from their perspective, they overstepped the object of study of the present research. The two items that were rewritten were redrafted following the experts' suggestions and observations. The item added was: I would recommend using a blog again for similar activities as we felt it was a suggestion that contributed information valid to the study.

In the second round, a new version of the instrument was presented and a new consensus validation process was begun. Validity was studied in order to determine the extent to which the instrument measured what it was intended to measure.

As a complement to the Delphi Panel, we proceeded to pilot the instrument. This consisted of administering the questionnaire to a group of 20 students enrolled in a later year, gathering any doubts or problems raised by its administration. After finishing the piloting process, we proceeded to carry out the relevant statistical analyses so as to determine the internal consistency (Cronbach's alpha was 0.81) and to obtain the final version of the questionnaire.

Moreover, content analysis was also used. We asked students to voluntarily make a blog post qualitatively assessing the course and its contribution to the development of professional competencies. Forty entries were collected as "evaluative." These posts were analyzed using the qualitative analysis software N-Vivo, a categorization of deductive character, using macro-categories: Technical support and information regarding the use of blogs; Difficulties in making and developing the blog; Volume of work; and Usefulness of blogs as a reflection tool.

Based on these four macro-categories we began segmenting the blog entries, looking for patterns of wording that responded to these categories, without rejecting the possibility of new categories emerging. The final result is the categories that are used in the presentation of the results.

c. Design and Context of the Study

The research was carried out during academic year 2012-2013 within the framework of a third year subject in the Bachelor degree in Early Childhood Education at the University of the Balearic Islands. This subject is taught in the second semester through a blended learning format (in which face-to-face classes are combined with video-conferences and the use of the virtual learning environment Moodle) at the same time as students are doing their Practicum in early childhood centers.

The design consisted of two phases: In phase 1, an intervention was carried out using the blog as a tool for learning and reflection; this phase covered one semester. In the last week of this semester the data were collected; while the data analyses were performed the following semester, both tasks making up phase 2 of the study.

During phase 1, students reflected on their learning throughout the subject course and in the Practicum regarding five key competencies:

- Autonomy in learning
- Reflection concerning the learning process in itself
- Analysis of and reflection on the operation of early childhood centers
- Analysis of and reflection on the teaching-learning processes that occur in the classroom
- Reflection on the improvement project implemented in the practical sessions

To this end, on a weekly basis, students published on their personal blogs the activities proposed, all of which were related to the experience they were having in the Practicum. Table 1 shows all the activities students had to carry out individually in order to pass the subject; this does not mean that during the course no other type of activity was carried out, but as they were not included in the blog, they were not the subject of study. The timing of these activities varied depending on the workload associated with each task and with the insertion process experienced by students in their Practicum.

The potential of this training strategy is very big; as mentioned by Margalef & Pareja (2008, p. 112) "the potential of this formative strategy has been revealed in the level of elaboration and in-depth analysis of some students' reflections and in the way learning progressed as they constructed new knowledge and meanings". The following table shows the relationship between activities and competencies, which was established in the procedure adopted:

Competency Worked On	Proposed Activities
Autonomy in the learning process	1. Define the competencies that a good teacher must possess 2. Identify current competence level before starting the internship 3. Contrast the personal profile with the profile defined in Exercise 1
Reflection on the learning process	1. Identify the competence improvement carried out during the internship and class 2. Collect and show evidence of the process
Analysis of and reflection on the working of the schools	1. Conduct a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis on the center where the internships are being carried out 2. Describe a typical day in a kindergarten education center 3. Contrast different types of educational sessions with peers
Analysis of and reflection on the teaching-learning process	1. Identify and document a good practice of the center and the classroom 2. Visit the blogs of some peers and exchange comments about the descriptions they make of good practices
Reflection on the improvement process	1. Analyze peers' improvement projects 2. Self-assess the improvement project according to some established items

Table 1. Relationship between competencies and activities
Source: Compiled by the author

Once the activity had been performed, students were required to label each post or entry with the competencies and indicators that, in their opinion, they were working on. The lecturers offered each student regular feedback using a Web 2.0 application. With this application, it was possible to offer each student personalized feedback, showing the coincidence or discrepancy with the labels used by students, and giving guidance on the acquisition of each competency.

During phase 2 we proceeded to the assessment of the experience per se, such that in the last class session the questionnaire was handed out and the teaching staff explained the process of filling it in, as well as the aims of the research. Emphasis was placed on the anonymous nature of the answers and any questions were answered before the task of filling in the questionnaire was begun. In all, 82 questionnaires were collected. In this same session, after finishing administering the questionnaire, students were invited to make one final entry in the blog in order to gather all their reflections, ratings and impressions on the experience. Emphasis was placed on unlinking this last entry from the final mark. In all, 40 students published this last post upon which we performed the qualitative content analysis; sample mortality was due both to the voluntary nature and to the impact of the exam schedule.

d. Data analyses

To process and analyze the data from the questionnaire, the data processing software SPSS (Statistical Package for the Social Sciences) version 19 was used. A descriptive statistical analysis was carried out along with chi-square tests and symmetric measures.

For the qualitative analysis, the blog entries were extracted to the latest version of the qualitative analysis program N-Vivo, whereby it was possible to perform coding of the information obtained in established nodes, in accordance with the aims of the study. For the analysis process we used the saturation of information, that is, the moment within the study when participants' opinions are repeated, are redundant or do not provide new information (Souza, 2009).

The categories of analysis used were as follows: Degree of prior knowledge of blogs; Technical support and information regarding the use of blogs; Difficulties in making and developing the blog; Volume of work; and Usefulness of blogs as a reflection tool. During the analytical process, no emerging categories arose; in fact, this node tree enabled us to answer the questions posed in the study.

III. Results

Below we present the results obtained in accordance with the research questions and their corresponding hypotheses: is it viable to use blogs in the university classroom?

To answer the first question we assessed the degree of knowledge possessed by students concerning blogs (Hypothesis 1), the information and technical support received at the start of the experience (Hypothesis 2) and the perception students have regarding the tool (Hypothesis 3). The statistics of the scores calculated for each variable (Technological questions) are shown in Table 2

	N	Minimum	Maximum	Mean	Stand. error	Stand. dev.
Degree of knowledge of blogs before starting this experience	82	0	10	4.30	.372	3.365
Information received at the start of the course for the use of blogs was adequate	82	3	10	6.98	.188	1.699
The technical support received throughout the experience was adequate	82	0	10	6.24	.269	2.432
Making the blog was technically easy for me	82	0	10	7.13	.212	1.917
Valid num. (according to list)	82					

Table 2. Statistics concerning each Technological variable
Source: Compiled by the author

Concerning the 'Degree of knowledge regarding blogs upon starting the experience' assessed in item 1 of the questionnaire, the sample distribution enables us to establish two distinct groups of

students: the group of "inexperienced or novices" made up of students who used scores ranging between 0 and 5 to assess the initial knowledge they have of this tool; and the group of "experts" which consisted of students who used scores higher than 5, as can be observed in the following figure:
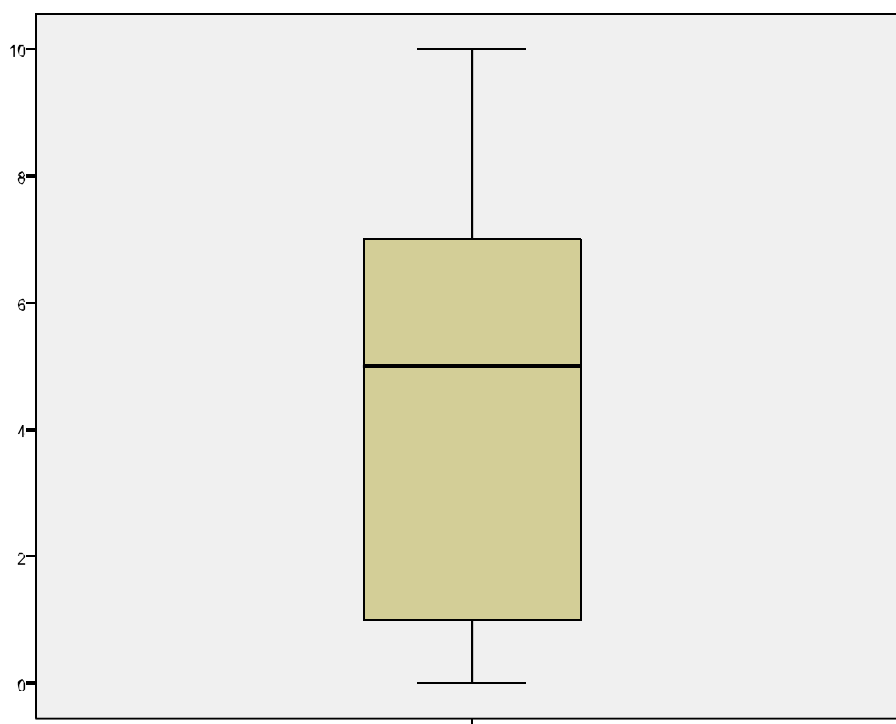

Figure 1. Sample distribution according to the mark assigned to students' own knowledge of blogs. Source: Compiled by the author

Thereby becoming an independent variable which is related to the other items as we can see in Table 3:

Item	Mean Novices	Mean Experts	Chi-square	Significance
Degree of knowledge of blogs before starting this experience	1.90	7.71	82.00	0.000
Information received at the start of the course	6.54	7.59	14.545	0.085
Technical support received	6.38	6.06	8.897	0.351
Ease in making the blog	6.31	8.29	21.080	0.000

Table 3. Relationship between variables of the first hypothesis
Source: Compiled by the author

As regards 'Appraisal of the information received at the start of the course', if these same results are analyzed according to the two groups established ("novices" and "experts"), we find no significant differences (p=0.85). There is no relationship between the rating of the information received concerning the blog and whether the students that received it had any knowledge regarding blogging; indicating that both groups expressed the need to receive initial information.

Several subjects expressed this same idea in their blogs by claiming that it is necessary for the teacher to provide information on the technical and aesthetic aspects of the tool. In the class sessions, technical and aesthetic aspects were not explained in detail, as students were offered the chance to use any of the management tools available.

"In relation to the blog, I think a whole class should have been devoted to explaining this fact because at first it was a little confusing because many people didn't know its real functionality, how to create it, how to develop it…and I think to give people confidence when presenting the subject, it would be essential to devote one session to explaining this issue" (S6)

The score awarded by students when rating the technical support received during the experience stands at 6.24. When we analyzed whether there are differences between the "novice" and "expert" groups, the significance level was 0.351, indicating that there are no differences between the rating students award the technical support received and the fact of belonging to one group or the other. As in the above item, both groups expressed the need to receive technical support during the experience.

Finally, the item that rates 'Appraisal of the technical ease-of-use when making the blog' reveals the highest scores. Besides, as can be observed in Table 2, statistically significant differences are detected (Chi-square=21.080; p=0.001) when comparing the frequencies of replies between the two established groups: "novices" and "experts". Symmetric measures, non-directional, confirm the degree of association between the variables (Phi=0.507; p=0.000).

In short, as far as the first research question is concerned, it can be observed that the sample is not homogeneous but rather that two extremes are detected: novices and experts. The item that assesses whether the blog is perceived as an easy-to-use tool receives higher scores in the group of experts than in the novices. All in all, both groups express the need to have initial information and technical support from the teaching staff during the experience.

In order to answer the second research question, the appraisals that students made regarding the usefulness of the blog and their satisfaction with its use was collected (Hypothesis 4); the workload generated (Hypothesis 5) and the feedback received (Hypothesis 6). Ratings statistics calculated for each variable of the pedagogical questions are shown in Table 4.

	N	Min	Max	Mean	Standard error	Stand. error
For a blog to be useful, it must be related to the other activities proposed in the subject	82	5	10	7.79	.147	1.331
The volume of work required of me to make the blog was adequate	82	3	10	6.74	.164	1.481
The number of comments provided by the tutor was	87	0	10	6,40	.175	1.632

enough to improve my competence					
Consulting colleagues' blogs and receiving their comments was useful for me to improve my competence	87	0	10	7.34	.196	1.829
I would recommend using a blog again for similar activities	82	2	10	7.61	.178	1.616
Valid N (according to list)	82					

Table 4. Statistics concerning the second hypothesis
Source: Compiled by the author

Table 5 shows the relationship between the items in the second hypothesis and the independent variable that classifies students as "novices" or "experts".

Item	Mean Novices	Mean Experts	Chi-square	Significance
Relationship between the blog and the proposed activities	7.71	7.91	1.170	0.948
Adequacy of the volume of work	6.58	6.97	8.099	0.324
Sufficiency of the number of tutor's comments	6.33	6.53	8.591	0.283
Consulting colleagues' blogs	7.65	6.97	8.146	0.419
Recommendation of the use of blogs in similar activities	7.15	8.26	14.340	0.045

Table 5. Relationship between the items related to the second hypothesis and extent of knowledge regarding blogs.
Source: Compiled by the author

First, on exploring the data of the item Appraisal of the relationship between the blog and the course activities proposed, we observed high scores on questions regarding whether there exists a relationship between the blog and the course activities.

On the whole, the qualitative data illustrate how the blog was used to develop the activities proposed and, more importantly, facilitate the reflection processes that were the aim of the experience. Students described the blog as follows: "Yet, little by little, we have learned how to make our own blog — who would have said I was going to have a blog! Well, I do — thanks to this subject, I have been able to reflect on many issues I had never questioned before" (S12). Analysis reveals no statistically significant relationship between the scores of "novices" and those of "experts" ($p=0.948$).

Second, in the category of analysis related to 'The volume of work required to make the blog was adequate'. During the course, students declared that the blog entailed an excessive amount

of work: "I can say I had to work a lot, but, sincerely I'm grateful for this work; now I see the benefit" (S3).

Although it would be logical to think that the group of "novices" would have rated this item more negatively, as by not knowing the tool it would be normal for them to have devoted a larger volume of work, the data indicate the opposite (p=0.324): there is no relationship between the scores awarded by one group or the other.

Third, as regards the item that assesses 'The number of comments by the tutors was sufficient and useful for improving the competences worked on', no significance was found in the relationship between this variable and the pre-established group of "novices" and "experts" (p=0.283).

Fourth, when we assess whether 'Consulting colleagues' blogs and receiving their comments' is useful for improving competencies, no statistically significant differences with the group established as "novices" and "experts" were found.

Students rated the usefulness of consulting their colleagues' blogs and receiving their comments on the learning process and on improving the competences built. Note that one of the compulsory activities in the project was to visit and comment on three classmates' blogs to facilitate exchange and interaction within the group.

Qualitatively, from the blog content analysis, these data can be contrasted with students' comments: "The fact of being able to make comments and ratings to colleagues and for them to be able to comment to us was an important, relevant fact in my learning" (S20).

"I really liked being able to see some of my other colleagues' blogs, exchanging proposals, good practices, as it is a very enriching way, as future teachers, to find out and exchange ideas, suggestions and opinions" (S32).

Finally, an examination of the item descriptors recommends the use of a blog for similar experiences. As can be seen in Table 4, the data reveal a statistically significant relationship between the scores assigned by "novices" and "experts" (Chi-square=14.340; p=0.045). With regard to association measures, the results point toward a low association: Lambda presents an approximate significance of 0.154, and Goodman and Kruskal's Tau is 0.17, like the uncertainty coefficient. Symmetric measures, non-directional, confirm the low degree of association between variables (Phi=0.418; p=0.045). Therefore, we determined that there is a statistically significant relationship between the degree of prior knowledge of blogs and the recommendation that they would make of this for similar activities, even if it is not very strong. Higher scores were observed among the group of "experts".

The qualitative analysis is along the same lines as reflected by the following comment: "Therefore, I think the reflection subject and the blog have been very valuable, essential tools in the learning process we have been through and experienced throughout the practical sessions these last months" (S9).

In short, as far as the second hypothesis is concerned, it can be observed that the blog is considered a useful tool to facilitate reflection processes when it bears a close relationship with the other planned activities in the subject and when it has enough feedback from the tutor and classmates. This is why students recommend its use in future learning experiences.

IV. Discussion and conclusions

In rating and identifying technical aspects, our research reveals that, contrary to our initial beliefs, students did not have a high knowledge of blogs as a Technological tool but, after overcoming the initial stage, were satisfied with the information and support they received as well as with the instrument's technical ease-of-use.

On the other hand, as far as pedagogical aspects are concerned, we were able to show that the blog entailed a high volume of work; however, students were satisfied with the teaching-learning process achieved and would recommend the experience, as it was shown to be a valid resource in recognizing the achievement of building their professional competence.

Here are some of the conclusions of the study in more detail:

In contrast to the initial hypothesis of the study, the results appear to show that students have extreme stances with regard to the prior knowledge they declare regarding blogs. The sample is divided between those who have much knowledge ("experts") and those who have little knowledge ("novices"). Therefore, university teaching staff ought to find out what prior knowledge and experience students possess concerning this tool.

In the study, the participating students declare their satisfaction with the information received at the beginning of the experience. With brief technical training it is possible to make better use of the blog by making the most of all the interactive and communicative possibilities of the tool. In order to do this, it is necessary to design the subject based on cooperative learning, proposing activities that enable experiences to be shared as well as the co-assessment thereof. It would even appear to be advisable to combine the blog with social networks such as Twitter and Facebook (Zhu & Procter, 2012; Blanco, 2016).

Most of the students recommend the use of blogs as a teaching-learning tool; what is more, they consider it an essential and relevant tool. All in all, the use of blogs depends on the relationship it has with the activities proposed in the subject (Avci & Askar, 2012).

The fact of labeling learning activities and relating them to professional competencies enables students to become aware of the process they are going through, of their successes and of their future challenges. This fact surprises students who are much more used to showing the final product than to revealing the learning process. It is precisely the reversal of this priority that is one of the most important advantages of blogs as opposed to other more traditional learning instruments.

From the point of view of the teaching staff, the use of blogs enables them to find out the way in which students construct their learning and how professional competencies are being developed, as well as to detect many indicators regarding which ones are emphasized or poorly worked on, based on the activities proposed in the middle of the subject. This is, possibly, one of the key advantages of blogs: the tags or labels favor both the processes of meta-reflection performed by students and the follow-up processes carried out by the teaching staff. Along these lines, Molina et. al (2013) state that blogs encourage a greater level of reflection among students than the classroom, while they also favor the development of certain competencies such as learning to learn or the ones linked to the analysis and treatment of information.

However, not all the results are positive. Students claim that blogs and their maintenance entail much work. From our perspective, a large amount of this workload may be related to or due to the activities proposed. Given the workload the students invest in making the blog, this must be

a main instrument in their assessment.

Not all of the results are the students' responsibility, either. As mentioned above, the large number of students and the huge amount of information they introduced in their blogs made follow-up difficult and limited the quantity and quality of the feedback given by teaching staff. Nonetheless, students value the usefulness of constant follow-up of the teaching-learning process in itself through the blog. A key point is to plan the feedback: frequency, types and channels to be used.

As Yang maintains (2009, p. 13), "blogs could be used to encourage interaction among students and between teachers and students". One of the compulsory activities proposed for students was to visit and comment on some of their colleagues' blogs; despite their reservations about publishing their own blog, students positively value being able to consult and enrich themselves from the work of their colleagues. For next year, we believe it is worth intensifying these exchanges and making them more frequent, as this activity enables students to progress in the development of their professional competencies. Moreover, this exchange allowed students to broaden their knowledge regarding the educational reality of our autonomous community, which is a value that students appreciate. After the experience, teaching staff are recommended to include the use of strategies that lead to interaction between students and the blogs of their classmates.

This study presents diverse strong points by linking the use of blogs to learning and developing professional competencies in the academic context. As described in phase 1, the proposed intervention enables one's own professional competencies to be identified along with their relationship with the entries in the blog, which is made viable through the use of labels in this tool. Meanwhile, complementing this identification with feedback from teaching staff increases students' metacognitive self-assessment ability. Finally, another good decision lies in the mixed methodology used, since by using two sources of information we were able to carry out a more comprehensive and detailed analysis of the object under study.

In turn, there are some limitations in the study, which can be classified in two groups: on the one hand those concerning the planning and methodological development of the study; and on the other hand those concerning the concrete experience of the use of reflective blogs in the classroom.

Although we have a large enough sample that could be extended in later studies, and we have proposed a quantitative study complemented by qualitative information, we notice that the proposed questionnaire has limitations in that it does not meet some of the identified research objectives; we should have proposed a series of items that would have enabled us to further assess the blog as support for reflective processes, with less emphasis on the technical aspects. Moreover, the questionnaire suffers from some of the limitations typical of this instrument: there is no way to tell how truthful a respondent is being; there is no way of telling how much thought a respondent has put in; the subject cannot have an overall view of the process followed in the intervention; and, finally, there is a level of researcher imposition: the researcher is making their own decisions and assumptions as to what is important or not. Nevertheless, other limitations were offset through the content analysis.

In terms of the experience, we noted that the number of students hampered our ability to provide feedback, thus determining its depth. Future research could assess what a blog contributes to the students, collecting their perspectives, and identifying the benefits of the

introduced innovation. This is already exemplified in the study by Hanuscin, Cheng, Rebello, Sinha & Muslu (2014), which addresses in what way blogs can provide resources for professional identity and establish a space for professional development. In this sense the possibility of considering blogs as a linking tool between initial training and professional development of teachers opens up.

In conclusion, the study yields positive data concerning the experience, whilst offering an intervention protocol for the use of blogs in the university classroom. It is an incipient study in that it goes beyond the technological contributions provided by blogs, linking meta-reflection, professional competencies, and ICT as three cutting edge pillars in current university teaching.

References

Aguaded, J.I., López, E., &Alonso, L. (2010). Innovating with blogs in university courses: a qualitative study. The New Educational Review, 22(3-4), 103-116. Retrieved from http://rabida.uhu.es/dspace/bitstream/handle/10272/6385/Innovating_with_blogs.pdf?sequence=2

Area, M. (Coord.) (2010). Competencias informacionales y digitales en educación superior. RUSC, 7 (2), Retrieved from http://rusc.uoc.edu/index.php/rusc/article/viewFile/v7n2-area/v7n2-competencias-informacionales-y-digitales-en-educacion-superior

Avci, U. & Askar, P. (2012). The Comparison of the Opinions of University students on the Usage of Blog and Wiki for Their Courses. Educational Technology & Society, 15(2), 194-205. Retrieved from http://www.ifets.info/download_pdf.php?j_id=55&a_id=1239

Bartolomé, A. (2008). El profesor cibernauta. ¿Nos ponemos las pilas? Barcelona: Graó.

Bartolomé, A., Cano, E., & Compañó, P. (2011). Los blogs como instrumento para la evaluación de competencias en los entornos de prácticas. In T. Pagés (Coord.), Buenas prácticas docentes en la universidad. Modelos y experiencias en la Universidad de Barcelona. Barcelona: ICE/Octaedro.

Bartholomew, M., Jones, T., & Glassman, M. (2012). A community of voices: Educationa blog management strategies and tolos. Tech Trends, 56(4), 19-25.

Balagué, F., Forés, A., & Gros, B. (2007). Ús dels blogs en educació superior. Jornada Espiral, 1-13. Retrieved from http://www.ciberespiral.net/comuje07/pdf/2comunica/0203.pdf

Berganza, M.R., & Ruiz, J.A. (Coord.) (2005). Investigar en comunicación. Guía práctica de métodos y técnicas de investigación social en comunicación. Madrid: McGraw-Hill.

Boutin, G., & Julien, L. (2000). L'obsession des compétences. Son impact sur l'école et la formation des enseignants. Montréal: Editions Nouvelles.

Bryman, A. (2007). Barriers to integrating quantitative and qualitative research. Journal of Mixed Methods Research, 1, 1-18. doi: 10.1177/2345678906290531

Buchem, I. & Hamelmann, H. (2011). Developing 21st century skills: Web 2.0 in Higher Education - A case study. ELearning Papers, 24. Retrieved from http://www.elearningpapers.eu/index.php?page=docidoc_id=18234idoclng=7ivol=24

Cabero, J., López Meneses, E., & Llorente, M.C. (2009). La docencia universitaria y las tecnologías web 2.0 renovación e innovación en el Espacio Europeo. Sevilla: Mergablum

Cano, E., Portillo, C., & Puigdellívol, I. (2014). Evaluación de las competencias en los entornos de los practicum en los estudios de magisterio mediante el uso de los blogs. Tendencias pedagógicas, 23, 9-28. Retrieved from http://www.tendenciaspedagogicas.com/Articulos/2014_23_03.pdf

Churchill, D. (2011). Web 2.0 in education: a study of the explorative use of blogs with a postgraduate class. Innovations in Education and Teaching Internacional, 48(2), 149-159. Retrieved from http://www.tandfonline.com/doi/pdf/10.1080/14703297.2011.564009

Crahay, M. (2006). Dangers, incertitudes et incomplétude de la logique de la compétence en éducation. Revue française de pédagogie, 154, 97-110. Retrieved from http://rfp.revues.org/143

Cuesta, P. (2011). Utilizando herramientas de la web 2.0 en la coordinación docente. In J. Hernández, F. Massimo, D. Sobrino, & A. Vázquez, Experiencias educativas en las aulas del siglo XXI. Innovación con TIC. Madrid: Ariel Fundación Telefónica y Editorial Planeta.

De Miguel, M. (Coord.) (2006). Metodologías de enseñanza y aprendizaje para el desarrollo de competencias. Orientaciones para el profesorado universitario ante el espacio europeo de educación superior. Alianza Editorial. Madrid.

Deng, L., & Yuen, H.K. (2012). Understanding student perceptions and motivation towards academic blogs: An exploratory study. Australasian Journal of Educational Technology, 28(1), 48-66. Retrieved from www.ascilite.org.au/ajet/ajet28/deng.pdf

Dos, B., & Demir, S. (2013). The analysis of the blogs created in a blended course through the reflective thinking perspective. Educational Sciences: Theory & Practice, 13(2), 1335-1344. Retrieved from http://www.edam.com.tr/kuyeb/en/makale.asp?ID=850&act=detay

Downes, S. (2004). Educational blogging. Educause Review, 9(5), 14-26.

Farmer, J. (2006). Blogging to basics: How blogs are bringing online education back from the brink. In A. Bruns & J. Jacobs (Eds.), Uses of blogs (pp. 91-103). New York: Peter Lang.

Blanco, A. I. (2016). El uso de blogs en la innovación docente: un nuevo paradigma de enseñanza-aprendizaje. Actualidad jurídica iberoamericana, (4), 27-44.

González, R. & García, F.E. (2011). Recursos eficaces para el aprendizaje en entornos virtuales en el Espacio Europeo de Educación Superior: análisis de los edublogs. ESE. Estudios sobre educación, 20, 161-180. Retrieved from http://dspace.unav.es/dspace/bitstream/10171/18416/2/ESE%20161-180.pdf

Greene, J. (2008). Is mixed methods social inquiry a distinctive methodology?. Journal of Mixed Methods Research, 2(1), 7-21. doi: 10.1177/1558689807309969

Halic, O., Lee, D., Paulus, T., & Spence, M. (2010). To blog or not to blog: Student perceptions of blog effectiveness for learning in a college-level course. The Internet and Higher Education. 13(4), 206-213. doi:10.1016/j.iheduc.2010.04.001

Hanuscin, D. L., Cheng, Y. W., Rebello, C., Sinha, S., & Muslu, N. (2014). The affordances of blogging as a practice to support ninth-grade science teachers' identity development as leaders. Journal of Teacher Education, 65(3), 207-222.

Hurlburt, S. (2008). Defining tools for a new learning space: Writing and reading class blogs. MERLOT Journal of Online Learning and Teaching, 4(2), 182-189.

Ion, G., Silva, P., & Cano, E. (2013). El feedback y el feedforward en la evaluación de las competencias de los estudiantes universitarios. Profesorado. Revista de curriculum y formación del profesorado, 17(2), 283-301. Retrieved from http://www.ugr.es/~recfpro/rev172COL4.pdf

Isakovic, A., & McNaught, A. (2013). Supporting Learning Through the Use of Self-Reflection Blogs: A study of the experience of blended learning students in the United Arab Emirates. Open Praxis, 5(4), 355-363. doi: http://dx.doi.org/10.5944/openpraxis.5.4.89

Killeavy, M., & Moloney, A. (2010). Reflection in a social space: Can blogging support reflective practice for beginning teachers? Teaching and Teacher Education, 26(4), 1070-1076. Retrieved, from http://www.sciencedirect.com/science/article/pii/S0742051X09002480/pdfft?md5=38f905edb0bb32e6ab2f1a76657b80dd&pid=1-s2.0-S0742051X09002480-main.pdf

Kim, H. N. (2008). The phenomenon of blogs and theoretical model of blog use in education contexts. Computers and Education, 51, 1342-1352. http://dx.doi.org/10.1016/j.compedu.2007.12.005,.

Lin, Q. (2008). Preservice teachers' learning experience of constructing e-portfolios online. The Internet and Higher Education, 11(3-4), 194-200. doi:10.1016/j.iheduc.2008.07.002

Margalef, L. & Pareja, N. (2008). Innovation, research and professional development in higher education: Learning from our own experience. Teaching and Teacher Education, 24(1), 104-116. doi: 10.1016/j.tate.2009.11.002

Martínez, A. & Hermosilla, J. (2010). El blog como herramienta didáctica en el Espacio Europeo de Educación Superior. Pixel Bit: Revista de medios y educación, 38, 165-175. Retrieved from www.sav.us.es/pixelbit/actual/13.pdf

www.manaraa.com

Marzal, M.A., & Butera, M.J. (2007). Los blogs en el nuevo modelo educativo universitario: posibilidades e iniciativas. Bib, Textos universitaris de biblioteconomía i documentació, 19. Retrieved from http://bid.ub.edu/pdf/19marza2.pdf

Matheson, D. (2004). Weblogs and the Epistemology of the News:Some Trends in Online Journalism. New Media & Society. 6(4), 443-468.

Molina, P.; Antolín, L.; Pérez-Samaniego, V.; Devís-Devís, J.; Villamón, M.; Valenciano Valcárcel, J. (2013). Uso de blogs y evaluación continua del aprendizaje del alumnado universitario (2013). EDUTEC, Revista electrónica de tecnología educativa, 43.

OCDE (2002). Définitions et sélections des compétences (DESECO) : fondements théoriques et conceptuels. Neuchâtel: OFS.

OCDE (2005). Proyecto DeSeCo. La definición y selección de competencias clave. Retrieved from http://www.portalstat.admin.ch/deseco/deseco_finalreport_summary.pdf

Oravec, J.A. (2003). Weblogs as an emerging genre in higher education. Journal of Computing in Higher Education. 14(2), 21-44. Retrieved from http://link.springer.com/content/pdf/10.1007%2FBF02940937.pdf

Orihuela, J.L., &Santos, M.L. (2007). Los weblogs como herramienta educativa: experiencias con bitácoras de alumnos. Quadernsdigitals.net. Retrieved from http://www.quadernsdigitals.net/index.php?accionMenu=hemeroteca.VisualizaArticuloIU.visualiza&articulo_id=7751&PHPSESSID=085f3dd10215ef632a02a7887514e6db

Palmer, A., Montaño, J.J. & Palou, M. (2009). Las competencias genéricas en la educación superior. Estudio comparativo entre la opinión de empleadores y académicos. Psicothema, 21, (3), 433-438.

Pérez García, M. P. (2008). Competencias adquiridas por los futuros docentes desde la formación inicial. Revista de Educación, 347, 343-367.

Portillo, M.C., Iranzo, P., & Rosselló, M.R. (2013). Autorregulación de aprendizajes en educación superior mediante la escritura de blogs. Revista Iberoamericana de Educación (OEI), 63(2). Retrieved from http://www.rieoei.org/expe/5829Rosello.pdf

Prestridge, S. (2014). Reflective blogging as part of ICT professional development to support pedagogical change. Australian Journal of Teacher Education, 39(2). doi: http://dx.doi.org/10.14221/ajte.2014v39n2.4

Redecker, C., K. Ala-Mutka, M. Bacigalupo, A. Ferrari and Y. Punie (2009). Learning 2.0: The Impact of Web 2.0 Innovations on Education and Training in Europe. Final Report. JRC Scientific and Technical Report, EUR 24103 Retrieved from http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=2899

Rodzvilla, J. (2002). We've got blog: How weblogs are changing our culture, Cambridge, MA: Perseus Publishing.

Salinas, M. I., & Viticcioli, S.M. (2008). Innovar con blogs en la enseñanza universitaria presencial. EDUTEC. Revista Electrónica de Tecnología Educativa, 27, 1-22. Retrieved from http://www.edutec.es/revista/index.php/edutec-e/article/view/464/197

Santoveña, M.S. (2011). Procesos de comunicación a través de entornos virtuales y su incidencia en la formación permanente en red. RUSC, 8(1). Retrieved from http://journals.uoc.edu/index.php/rusc/article/viewFile/v8n1-santovena/v8n1-santovena-eng

Souza, M.C. (2009). La artesanía de la investigación cualitativa. Buenos Aires: Editorial Lugar.

Tekinarslan, E. (2008). Blogs: A qualitative investigation to an instructor and undergraduate students' experiences. Australian Journal of Educational Technology, 24(4), 402-412. Retrieved from http://ascilite.org.au/ajet/submission/index.php/AJET/article/download/1200/428

Teo, T. (2008). Pre-service teachers' attitudes towards computer use: A Singapore survey. Australasian Journal of Educational Technology, 24(4) 413-424. Retrieved from http://www.ascilite.org.au/ajet/ajet24/teo.pdf

Thurman, N. & Schapals, A. K. (2016). Live blogs, sources, and objectivity: The contradictions of real-time online reporting. In Franklin, Bob & Eldrige II, Scott (Eds.) The Routledge Companion to Digital Journalism Studies. Routledge, London; New York. (In Press)

Tur, G. (2011). Las herramientas de la web 2.0 para potenciar el PLE del futuro docente. In J. Hernández, F. Pennesi, D. Sobrino, & A. Vázquez. Experiencias educativas en las aulas del siglo XXI. Innovación con TIC. Madrid: Ariel, Fundación Telefónica y Editorial Planeta.

Waycott, J., Sheard, J., Thompson, C., & Clerehan, R. (2013). Making students' work visible on the social web: A blessing or a curse? Computers & Education, 68, 86-59

Yang, S.H. (2009). Using Blogs to Enhance Critical Reflection and Community of Practice. Educational, Technology & Society, 12(2), 11-21. Retrieved from http://www.ifets.info/download_pdf.php?j_id=43&a_id=928

Zabalza, M.A., y Escudero, J.M. (2004). Diseño curricular e innovaciones metodológicas en el contexto de la convergencia europea. In A. Villa, C. Yániz, J. Solabarrieta, M. A. Zabalza, F. Trillo, A. Cid y C. Moya (Coords.), Pedagogía universitaria: hacia un espacio de aprendizaje compartido, 847-856. Bilbao: ICE-Universidad de Deusto.

Zhu, Y., & Procter, R. (2012). Use of blogs, Twitter and Facebook by PhD Students for Scholarly Communication: a UK study. Proceedings of the 2012 China New Media Communication Association Annual Conference, (december, 6-8). Retrieved from https://www.escholar.manchester.ac.uk/api/datastream?publicationPid=uk-ac-man-scw:187789&datastreamId=FULL-TEXT.PDF