

Online Instruction in Spanish Higher Education. A Study Conducted at the Faculty of Education of the University of Córdoba (Spain)

Abstract

The arrival of the European Higher Education Area (EHEA) has brought about intense methodological restructuring in the participating countries. These changes, along with the development of ICT, are reshaping the Higher Education system. The emergence of advanced technological tools like the Moodle platform has altered the teaching-learning process at every educational cycle. This paper springs from the work undertaken as part of the ongoing project for Educational Excellence in collaboration with three Andalusia universities: Seville, Cadiz and Huelva. The study was entitled *Tele-education Platforms for Virtual Instruction*. Since work at the University of Huelva has taken into consideration the students at some point, and the University of Córdoba lacks research on this area, we decided to examine the role of the student at the University of Cordoba as side-work to the original project. To this purpose, we designed an instrument to determine the students' rate of use, level of satisfaction and level of knowledge of the Moodle platform. Thus, with this paper we would like to emphasize the relevance of students as key elements in the education system, as recipients of the teaching process.

Keywords: *e-learning, university pupils, Moodle, EEES, LMS*

1. Introduction

If we have a look at the current situation of higher education in Spain, we could see a rapidly changing picture. The sudden changes taking place in the social

context, particularly the technological advance, are undoubtedly influencing the development of the EHEA. New concepts are being shaped, such as *School 2.0* (Cabrero 2009) and *University 2.0* (Pedreño, 2009; Conole & Alevizou, 2010) or *Faculty 2.0* (Hartman, Dziuban & Brophy-Ellison, 2007), and they are becoming part of our teaching practice, coming alive in our classes. Llorente points out that as far as higher education is concerned, we are facing a second revolution: web-based education. Surely, this kind of teaching is altering the life of both teachers and students.

In brief, Torres states that, at the moment, any society claiming to be inclusive and tolerant cannot ignore ICTs.

The arrival of ICTs at educational institutions has caused different reactions. The students were curious, the teachers suspicious and the educational authorities shy. That shyness mirrored the political approach, which was to introduce ICT in all educational areas and levels while avoiding difficult situations or conflicts. One of the most typical conflicts at the time was the fear of technology or technophobia. Luckily for everyone, the situation seems to be under control nowadays and fears have been overcome. The development of the traditional education system encountered three major problems according to Fondos (2006): setting, time and demand. The introduction of ICT is changing the daily life of educational institutions and making those problems fade away.

The development of the educational curriculum is greatly enriched by the use of ICT. This tool helps teachers plan more comprehensive teaching sessions, much more efficient than traditional lectures.

The relationship between ICT and education shows at least three potential advantages for the teaching practice. The innovation brought about by technological advances implies that there must be an actual use of ICT in our classes, since they satisfy a real need.

The growth of new technologies has resulted in the development of a new way of understanding the teaching practice, online as well as traditional. The arrival of a new education system at universities (we are referring to the elaborated Bologna process) is a challenge for theoretical and practical professionals of higher education. The onset of this system implies the production and assumption of new resources, among which ICT tools stand out as a new way of expression. Since it springs from the traditional distance learning, the most developed resource is the e-learning system.

As mentioned above, the new conception of e-learning in higher education as bearer of knowledge has its roots in the traditional distance learning. Moreover, Galliani (2008) explains that since e-learning is assisted by tutors, this system is

also based on the concept of individual work. Nowadays, web-based instruction or tele-education is characterized by the use of a wide variety of technological learning (Boon et al. 2005). Likewise, we must bear in mind that social and cognitive factors intervene in distance learning (Inglese, Mayer & Rigotti, 2007). Sangrá (2004: 79) dwells on Rosemberg (2001: 28–29) to establish three conditions that must apply so that the ICT and education blending can succeed throughout time:

- a) it must be online
- b) it must reach the final user through a computer
- c) it must be centered on the widest range of learning solutions, going beyond the paradigms of traditional education.

Besides promoting interactive learning, the combination of traditional and web-based education helps break setting or time restrictions, both of which can hinder the educational and/or learning process. Moreover, a new field of studies stems from this blend, e-learning, an area that makes higher education more flexible and has many advantages: the learning/teaching process can happen everywhere (on campus, off campus, cross campus); there is flexibility regarding time, setting, method and teaching-learning pace; it is a student-centered model, for it encourages independent and autonomous learning; this type of learning also changes the role of the teacher, who acts now in a mentoring and facilitating capacity (Salinas, 2004).

Online education has a direct influence on the role played by teachers and students. The main feature of the new student is the ability to be independent, to be able to manage his/her own learning process. Students take control of their academic life and develop new competences with the help of ICTs. This process fosters collaborative learning, a useful skill in the development of learning communities where the student is responsible for their actions. As for teachers, they become facilitators of the process, redefining their professional development, fostering the establishment of learning communities and promoting flexible learning. Teachers, then, must retrain themselves into this new role. This new way of understanding and living higher education helps break the isolation that has dominated university classes in general and university in particular.

2. E-Learning Platforms: A New Way Of Teaching

The most common resource within the e-learning systems is the Learning Management System (LMS), also called Virtual Learning Environment (VLE). Muñoz Arteaga et al. (2006) claim that learning management systems control

course management and monitor student activities and their progress (provided that happens). In Andalucía, the most frequently used educational platforms are Moodle (free software) and the previously called WebCT, now run by Blackboard.

In our opinion, the Moodle platform meets all the necessary conditions to provide a good virtual environment for student training, and, as such, it is the platform used at the University of Córdoba. A learning platform should incorporate different elements to ensure it goes beyond the simple transmission of knowledge to become a rich and varied learning/teaching environment. To do so, it is necessary to discern distinctive interfaces for the different users that participate in the experience (teacher, student and system administrator); it is also important to set communication channels (email, chat, audio-video conference, etc.) that can work in a friendly environment and be used by everyone easily, not requiring extensive technological skills; it is essential for the platform to have browsing tools that help classify and retrieve information; likewise, it should allow management and monitoring capacities to the teacher responsible for the student's training program; in relation to material design, it is required to incorporate not only information activities but also development and extension exercises; finally, it is equally important to regulate tutorials from the very beginning; setting rules of use, tutor availability, observing schedules continually and minimizing technical errors in its running.

Nowadays, there is a wide range of computer environments or interfaces that promote interaction between teachers, students and materials. Their main goal is to generate learning and they are called Telematic, Open or Virtual Classrooms. These spaces should cover all the needs of the educational process. In our institutions, we have classrooms, laboratories, administration areas, teacher offices, meeting rooms, recreational areas, etc. Similarly, telematic spaces should have classrooms, operating multimedia, management areas, meeting scenarios, etc.

3. Moodle: our learning environment

Moodle is a training platform designed by Martin Dougiamas in 2002. He based his development on ideas from the didactic constructivism. These scholars support the view of collaborative learning and believe that learning is not a direct and unaltered transmission from textbooks or teaching, but is built in the student's mind.

Thus, teachers who support this school of thought create a student-centered environment so that students can build learning drawing on their own knowledge and abilities. Teachers, then, reject the idea of being just transmitters of the knowledge the student is supposed to acquire.

That is a course management system that helps teachers develop online learning communities.

The statistics confirm that Moodle has a great impact: in December 2006 there were more than 19,000 registered users; in 2011, there are more than 42 million and the system has been translated to 60 different languages. (<http://moodle.org/stats/>)

4. Methodology

This study tried to bring closer the educational Excellence project in which we are taking part and our daily teaching practice in the areas of Teaching and Educational Psychology. This study aimed to determine these facts:

- Rate of use of the Moodle platform by the students from the Faculty of Education at the University of Córdoba.
- Level of satisfaction of these students with the Moodle platform.
- Level of knowledge of these students regarding the platform.

Taking these goals as a starting point, we focused on the specific objective of this paper, to determine the attitude of the students from the Faculty of Education at the University of Córdoba towards the Moodle platform as a learning/teaching tool.

With the purpose of finding answers to these questions, we carried out a non-experimental study, descriptive and correlational, based on questionnaires and triangulation of four discussion groups.

The discussion groups were formed by teachers from the four participating universities. All of them contributed to the study with their views about the issue of working with platforms as a methodological resource. Every group was composed of seven teachers representing different areas of knowledge, although we would like to point out that the number of teachers belonging to the area of Social and Legal Sciences, particularly to the field of Education, was slightly higher.

Thus, we designed a questionnaire to carry out the quantitative study. It is formed by 396 items grouped in seven different thematic sections.

Dimension 1: Personal information

Dimension 2: Available technological resources

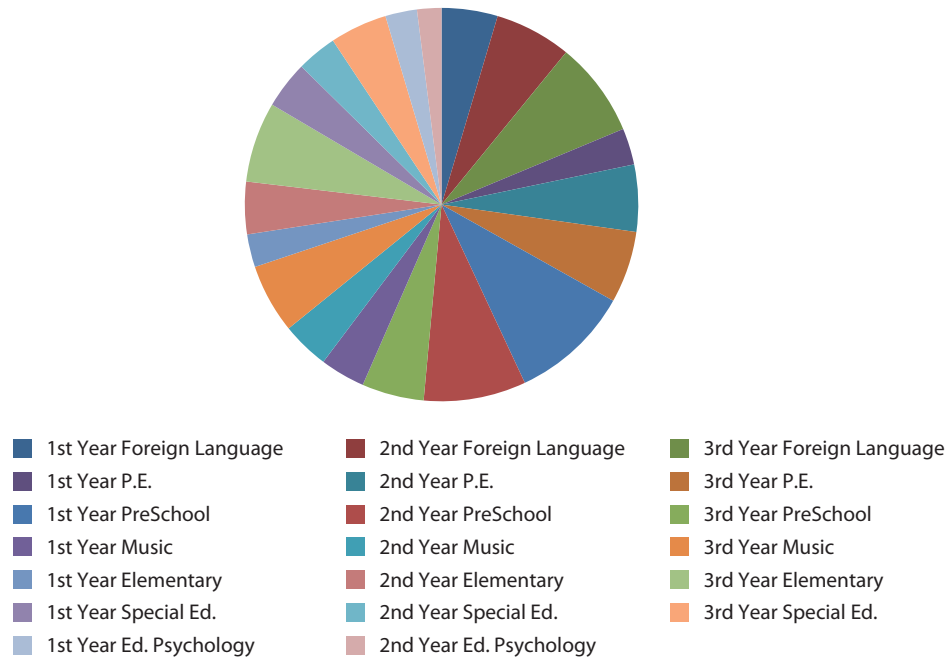
Dimension 3: (Type of) Platform they have worked with

Dimension 4: Technical potential of the platform

Dimension 5: Didactic potential of the platform

Dimension 6: Attitude towards platform usage

Dimension 7: Training in platform usage

Figure 1. Sample distribution according to year of studies and degree

In relation to the structure of the questionnaire, before the students actually started dealing with the questions, we had explained the objective of the study and how to fill in the questionnaire. Then, the different items were introduced and finally we finished by thanking them for their participation.

Lastly, we would like to draw attention to the fact that this questionnaire has proven to be reliable since we have measured the test's internal consistency (Cronbach's Alpha) and we have obtained α of 0.96, which indicates good reliability.

916 students participated in this research. According to gender differences, women represent 66% of the sample and men 34%.

Table 1. Sample distribution according to gender

Gender	F	%
Male	311	34%
Female	605	66%
Total	916	100%

As far as age is concerned, the participating students show the following age groups:

Table 2. Sample distribution according to age

Age	F
18–19	179
20–21	284
22–23	333
24–25	43
Over 25	77
TOTAL	916

The distribution of the participants according to the degree they were pursuing at the Faculty of Education of the University of Córdoba (Teaching or Educational Psychology) and the teaching specialization is shown in Figure 1.

5. Findings

We used factor analysis to perform the differential approximation of the assessed competences. Hence, there is 68.74% variability. We obtained three factors, as can be seen in Table 3 below:

Table 3. Factors. Source: Own elaboration
(This is a translation from the original Spanish questionnaire).

Attitudes		Factors		
		1	2	3
1.	Platform (PT) usage is a right of students	.894		
2.	Equality of access to PTs can reduce socio-cultural differences among students	.831		
3.	PTs can help change the future of Higher Education	.860		
4.	PTs allow me to meet people from other educational institutions.	.530		
5.	I use PTs when I see my mates using them and getting involved.	.427	.510	
6.	PTs make students communicate more frequently.	.590		.733
7.	Pts meet the educational expectations I had held	.489	.585	

	Factors		
	1	2	3
Attitudes			
8. PTs make class routine more relaxed (dynamic).	.554		
9. PTs make difficult distinguishing between free time and work.	.643		
10. Internet is a valuable teaching tool.	.856		
11. I use PTs and I will continue using them.	.784		
12. PTs develop social values.	.740		
13. I will use PTs if I am aware of their educational value.	.747		
14. I will use PTs if we regularly assess the results.	.852		
15. I use PTs if we have an educational/learning project that incorporates them.	.781		
16. I use PT if this decision is supported by the Department and the Faculty.	.786		
17. Before using PTs, I would rather consider where this decision is taking us.	.746		
18. It is good for education in general to use technological advances.	.813		
19. PTs make learning easier.	.855		
20. The University should demand the use of PT at every faculty.	.726		
21. Being familiar with and using PTs is essential for today's Higher Education.	.802		
22. PTs are important to build social relationships.	.807		
23. The use of PTs in the teaching practice encourages active learning.	.733		.465
24. With the help of PTs we can learn to research and collaborate.	.918		
25. The use of PTs makes it possible to adopt innovative learning models.	.775	.406	
26. I would use PTs more frequently if I were trained to use them.	.765		
27. PTs allow learning to take place from any setting and at any time.	.880		
28. PTs are an excellent excuse to be retrained from the professional point of view.	.853		
% Variance	20.18	20.13	17.48
Cronbach's Alpha	0.97	0.73	0.65
TOTAL	68.74		

The identified factors are divided into 3 headings:

1. Facts about students in the first year of Educational Psychology and the Platforms.
2. Educational nature of Platforms.
3. Learning facilitation.

As can be seen in Table 3, the first factor refers to the majority of the attitudes under consideration. They cover different angles (affect, behavior and cognition).

The results show, e.g., the understanding that every student has the right to be taught by means of the online platform used by the University of Cordoba, the perception that platforms can help reduce social inequality or the belief that platforms make learning easier. The second factor, educational nature of platforms, allows for the inference that the first year students of Educational Psychology believe that e-learning platforms help develop learning due to their innovative character; therefore, their educational expectations are met.

Finally, the third factor (Learning facilitation) indicates that the students of Educational Psychology feel that the training they can receive from this didactic and technological resource facilitates active learning and helps them build relationships with their classmates. Physical proximity as well as the desire to improve themselves are features that can make their studying more attractive.

6. Discussion and conclusion

The presented online training model attempts at creating an Online Learning Community based on collaborative learning. This type of education makes students more involved in group activities and increases students' autonomy and responsibility in their own learning process.

Technological environments and group activities have an enormous potential within this context. The argument to support the development of online learning communities is in fact collaboration (shared production). Research carried out by Creanor et al. (2007–2008) indicates that teachers totally support the use of ICT in the teaching-learning process. The point is not communication or group work, but development of values. Anyhow, the aim is set at collaborative learning processes, at achieving the right context to emphasize inter and intra-group interactions, where the participants autonomously take part in a learning process while solving a problem as a group (Salinas, 2003).

We think that this study has been really useful to determine the point of view of the students of our university regarding the e-learning platforms as an education system. We should bear in mind that present-day university students were born with a mouse in their hands and a computer as a window to the world (Veen, 2005).

The findings of the study confirm our assumptions but, unfortunately, they catch a discouraging sight of the use of platforms as a means or resource to develop our teaching practice as encouraged by the new European degrees in Higher Education.

Thus, we firmly believe that educational institutions should find and set strategies in motion to compensate this lack of resources. This can be achieved with the help of incentives or providing guidance and training courses on the use of platforms.

Only by doing so can our students start changing their perception, view and understanding of platform usage.

References

- Boon, J., Rusman, E., Van der Klink, M. & Tattersall, C. (2005). Developing a critical view on e-learning trend reports: trend watching or trend setting? *International Journal of Training and Development*, 9 (3), 205–211.
- Cabero, J. (2009). Educación 2.0. ¿Marca, moda o nueva visión de la educación? In C. Castaño (Ed.), *Web 2.0. El uso de la web en la sociedad del conocimiento. Investigaciones e implicaciones educativas*. (pp. 9–30). Venezuela: Universidad Metropolitana.
- Conole, G. & Alevizou, P. (2010). A literature review of the use of web 2.0 tools in Higher education. A report commissioned by the Higher Education Academy. The Open University Walton Hall, Milton Keynes UK. http://www.heacademy.ac.uk/assets/EvidenceNEt/Conole_Alevizou_2010.pdf.
- Creanor, L., Trinder, K., Gowan, D. & Howells, C. (2007–2008). Life, learning and technology: view from the learners. *Learning and Teaching in Higher Education*, 2 (1), 1–16. <http://www2.glos.ac.uk/offload/tli/lets/lathe/issue2/articles/howells.pdf>
- Fondos, M. (2006). El reto del cambio educativo: nuevos escenarios y modalidades de formación. *Educación*, 38, 243–258.
- Galliani, L. (2008). Tecnología, aprendizaje, intercultural. Paradigmas pedagógicos de la transición. *Revista Profesorado, Revista de Currículum y Formación del Profesorado*, 12 (3). www.ugr.es/local/recfpro/rev123ART9.pdf
- Hartman, J.L., Dziuban, C. & Brophy-Ellison, J. (2007). Faculty 2.0. *EDUCAUSE Review*, 42 (5), 2–72.
- Inglese, T., Mayer, R. & Rigotti, F. (2007). Using audiovisual TV interviews to create visible authors that reduce the learning gap between native and non-native language speakers. *Learning and instruction*, 17 (1), 67–77.
- Llorente, M.C. (2009). *Formación semipresencial apoyada en la red (blended learning). Diseño de acciones para el aprendizaje*. Sevilla: Editorial MAD
- Muñoz Arteaga, J., Álvarez Rodríguez, F.J., Osorio Urrutia, B. & Cardona Salas J.P. (2006). Objetos de aprendizaje integrados a un sistema de gestión de

- aprendizaje. *Revista Apertura*, 6 (3), 109–117. <http://redalyc.uaemex.mx/redalyc/pdf/688/68800310.pdf>
- Salinas, J. (2003, November). *Comunidades virtuales y aprendizaje digital*. Paper presented at *Edutec 2003*, Venezuela. <http://www.edutec.es>
- Salinas, J. (2004). Cambios metodológicos con las TIC. Estrategias didácticas y entornos virtuales de enseñanza-aprendizaje. *Bordón*, 56 (3/4), 469–480.
- Sangrá, A. (2004). E-learning y calidad en la educación superior. *Revista Qurriculum*, 17, 77–92.
- Torres, L. (2007). La accesibilidad de las TIC. [ICT accessibility]. In J. Cabero, M. Córdoba y J.M. Fernández (Eds.), *Las TICS para la igualdad. Nuevas tecnologías y atención a la diversidad*. (pp. 197–218). Sevilla: MAD.
- Veen, W. (2005). 2020 vision: Vim Veen's projection. *Proceedings of Line Educa-Berlin*. <http://www.jiscinfonet.ac.uk/InfoKits/effective-use-of-VLEs/resources/roadmap-for-eassessment>