INNOVATION TOOLS APPLIED TO MASTER'S AND UNIVERSITY DEGREE COURSES AT THE UNIVERSITY OF ALMERIA (SPAIN)

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Abstract

Since 2009, teaching innovation projects are being carried out at the University of Almeria. And one of them is related to the application of innovation tools that have been carried out in different subjects of degrees and masters and different courses.

Among the subjects we can highlight the introduction to the economics of the law degree (1st year), economics of the European Union of the economics degree (3rd year) and in the Masters of Development and Sustainable Local Co-development and in the Master of Secondary Education.

And the tools that have been applied have been gamification, role play, blog, wiki, mind maps and content maps.

The aim of this communication is to describe the different tools and offer the results obtained from their application.

The Blackboard Learn virtual platform has been used to enable students to have a space in which to make entries in the different activities. They were then given the opportunity to comment on the contributions made.

The results show the importance of the application of these tools that make the subject more attractive and motivate students to work as a team. The students' assessment of the subjects has been raised and the teacher has been able to transmit the contents in a more efficient way. The benefit has been much higher than the cost of implementing these tools.

1 INTRODUCTION

25 May 1998 is considered to be the start of the Bologna declaration which was signed by the education ministers of Germany, France, Italy and the United Kingdom and was aimed at the implementation of the European Higher Education Area (EHEA). At present, 47 countries are part of this area.

Among its objectives were:

1 Adoption of a system of easily readable and comparable degrees, also through the implementation of the Diploma Supplement, in order to promote European citizens employability and the international competitiveness of the European higher education system

2 Adoption of a system essentially based on two main cycles, undergraduate and graduate. Access to the second cycle shall require successful completion of first cycle studies, lasting a minimum of three years. The degree awarded after the first cycle shall also be relevant to the European labour market as an appropriate level of qualification. The second cycle should lead to the master and/or doctorate degree as in many European countries.

3 Establishment of a system of credits - such as in the ECTS system - as a proper means of promoting the most widespread student mobility. Credits could also be acquired in non-higher education contexts, including lifelong learning, provided they are recognised by receiving Universities concerned.

4 Promotion of mobility by overcoming obstacles to the effective exercise of free movement with particular attention to: for students, access to study and training opportunities and to related services and for teachers, researchers and administrative staff, recognition and valorisation of

periods spent in a European context researching, teaching and training, without prejudicing their statutory rights.

5 Promotion of European co-operation in quality assurance with a view to developing comparable criteria and methodologies.

6 Promotion of the necessary European dimensions in higher education, particularly with regards to curricular development, interinstitutional co-operation, mobility schemes and integrated programmes of study, training and research.

The EHEA was an important change, especially in Spain, due to the fact that the diplomas were three years old and the degrees five years old, and the system was changed to 4 (degree) + 1 (Master), unlike in most EHEA countries.

But not only because of the number of years, but also because of the emphasis on the practical part and, above all, on the way of teaching. The latter has changed substantially (Escorcia et al, 2007) and the need to implement teaching innovation tools is essential when it comes to providing excellent teaching to students (Tomusk, 2006).

The aim of this work is to explain and analyse the implementation of teaching innovation tools in the European Union Economy subject in the third year of the Degree in Economics and in the Co-development and Local Development Instruments and Policies subjects of the university master's degree in Development and Sustainable Local Co-development and in the Training Complements in Economics, Trade and Tourism subject of the Secondary Master's degree at the University of Almería (Spain).

2 LITERATURE REVIEW

The implementation of social innovation tools requires time for the teacher to prepare it and for the students to become aware of the benefits of the system.

In the case study it is interesting to be able to compare the attitude of the student of the degree and master before these changes that at no time should be radical and it is important to apply them to students of last years that already carry a baggage in the university.

The master class is still useful but it is essential to implement tools to complement it, especially considering that increasingly focus the subjects towards semi-presentiality and virtuality. In these cases, innovation tools are more useful than a classical master class, although they can be applied in streaming. But in that case, it would be useful as an inaugural class or for a specialist professor from another university to give it at a given moment but not for the generality of the classes.

Of the subjects to be analysed, the most developed is that of European Union Economics of the degree in Economics that begins in the academic year 2012/13 (De Pablo Valenciano et al, 2018a) but previously this subject was in the Diploma in Business Sciences (De Pablo Valenciano et al, 2010) and some innovation tools were already implemented as was the case of the map of knowledge of Europe and was based on a play and gamification.

The rest are framed in masters and have the advantage that the number of students is low (over 20 students) and most have already worked with social innovation techniques.

3 METHODOLOGY

The University of Almería has implemented the Blackboard Learn virtual platform that gives many possibilities for the use of innovative teaching tools. In our case we have used mind maps, time lines, play rolle, blog, wiki, classroom flipper, European knowledge map and gamification.

In relation to mind maps it has been very useful to use the following tools:

- Cmaptools: http://cmap.ihmc.us/
- Text2MindMap: https://www.text2mindmap.com/
- Bubble.us: https://bubbl.us
- Microsoft Word

For the construction of time lines, it is important to know the following links
Through role play, groups were implemented that will argue their contents with other groups of students, promoting critical thinking (Rashid and Qaisar, 2017), understanding and retention of knowledge (Jarvis, Odell and Troiano, 2002). Also included is the knowledge map of Europe where students by groups will expose the political, economic, social and cultural characteristics of a country, allowing students to build knowledge and adopt an integrated and holistic vision of it (Seyihoglu and Kartal, 2010).

The student will post on the blog news and commentaries of articles on an issue to be studied. They will have two weeks in which to contribute ideas and contents and finally in groups they will have to defend it by means of a mind map (De Pablo et al, 2018b).

Through the wiki, students will put and define the key words of the different chapters of the subjects and their respective definitions. This tool provides a series of skills of special importance for the reality of today’s world (Parker and Chao, 2007). On the one hand, it fosters collaborative learning of theoretical knowledge, teamwork skills (Schaffert et al., 2006) and information skills (Augar, Raitman, & Zhou, 2004). On the other hand, the low technological demands presented by the wiki is the ideal scenario for establishing constructive learning in which students are able to share their knowledge with the rest of their peers (McMullin, 2005).

In the inverted class (flipper classroom) the student must obtain or see the information indicated by the teacher, work it outside the classroom and then discuss it in the practice groups. In this way a comprehensive approach is offered to increase the commitment and involvement of the student in the teaching, making him/her a participant in the contents of the subject to be taught (Sosa Díaz & Palau Martín, 2018).

Gamification complements the previous tools and in this case a trivial European search was elaborated that served as an alternative to the traditional classroom strategies (Lozada Ávila & Betancur Gómez, 2016). A kahoo was also applied to evaluate the acquired knowledge (Martín Caraballo et al, 2017). For the latter, the students used Smartphones (De Pablo et al, 2016a).

4 RESULTS

Mind maps are essential for students to fix and synthesize ideas. And in this case, all the subjects have been put into practice and the results have been very good.

![Figure 1. Mind map](image-url)
Timelines have also been very useful and have been applied in the subject of Economics of the EU, and specifically to analyze the process of integration of the European Union, the Common Agricultural Policy and Cohesion Policy, in the subject of Policies and Instruments of Local Development to see the evolution of the programs leader of the European Union.

**Figure 2. Timeline**

With the role play, groups are implemented that will argue their contents in front of other groups of students. Specifically in the subject of economy of the European Union three will be carried out:

- **European Integration**: There will be several working groups that will defend the European integration process, others will attack this process and a last one that will say why this process is indifferent.
- **Budget**: Several groups will be designated according to the institutions involved in the Community budget. They will have to explain how the EU budget procedure is carried out.
- **Of Countries**: In this case the professor will designate country and group (maximum four students), and the mars 18 of December will have to expose the characteristics of the country so much physical, economic, political, ..... After the exposition, the members of each group will...
have elaborated some product of the corresponding country and it will be tasted at the end of the class (De Pablo et al, 2016b).

Figure 3. Role play

In the case of the subject of Policies and Instruments, the following will be carried out:

- The students will adopt the role of an entrepreneur from a municipality of less than 1,500 inhabitants who wishes to start a new business using endogenous resources linked to one of the indicated sectors (different scenarios). The rest acquire different roles for and against the initiative.
- Simulation of a company dedicated to international consultancy that wishes to establish relationships with institutions or companies in a country to develop joint initiatives.
- A group of students will participate as a board of trustees of a nonprofit organization dedicated to the enhancement of a specific tangible or intangible asset, which must be valued.

Co-development will be staged as follows:

For the elaboration of the Municipal Plan for the management of cultural diversity. There will be groups that will be the agents involved in migration issues. - Simulation of a company dedicated to international consultancy wishing to establish relations with institutions or companies in a country in order to develop joint initiatives.

In the use of the blog and in the case of Economy of the European Union, the student will be able to find current news about the E.U. that will be debated by the rest of the members. In the secondary school master’s degree and specifically in the subject of Training Complements, there will be one related to the importance of domestic economy.

In relation to the wiki, in E.U. economy it was materialized in terms by chapters, and in instruments and policy to link the task of defining key concepts with the creation of a local development wiki based on the proposed articles.

Flipper Classroom focused on a series of videos that the student had to watch at home and make a summary that would later be discussed in class.
Gamification is the most practical and creative part and the students were very interested in the implementation of the trivia of Europe and the minesweeper that was used in the Economy of the European Union (De Pablo et al, 2010). Kahoot! was used for content evaluation and by means of mobile phones the students were able to answer immediately and the classroom to the questions.

Finally, the Directorate General of Quality of the University of Almeria values the different subjects of the degrees and master and in the case of the subjects in this study have obtained very positive values well above the average of the university itself.
5 CONCLUSIONS

The European Higher Education Area (EHEA) brought about the substantial change in the way of teaching at university. The subjects were the first to change with the implementation of ECTS credits and with the obligatory nature of the internships. Students have also changed the way they prepare classes and are increasingly demanding another, more innovative type of teaching where the master class is having problems.

In the case study it is demonstrated that the implementation of teaching innovation tools has resulted in greater satisfaction for the student-teacher binomial as demonstrated by the assessment of the surveys that have been conducted.

Faced with this scenario, we must ask the following question: reaction or adaptation to the environment? The answer is endorsed by a famous phrase of Charles Darwin who points out that "it is not the strongest species that survives, nor the most intelligent, but the one that adapts most quickly to change". In the case we are analyzing, it can be assumed that paradigm shifts are related to the implementation of teaching innovation tools at the university level.

REFERENCES


