

DEBATE AS A LEARNING STRATEGY. FLIP TEACHING AND USE OF ICTS

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Abstract

This text describes a teaching innovation experience in the framework of the department of Architectural Composition of Universitat Politècnica de València in three different subjects: Architectural Conservation (obligatory fifth-year subject from the Degree in Foundations of Architecture), Conservation of Non monumental Historic architecture (elective subject from the Master's in Architecture) and Theory and History of Conservation (obligatory subject in the Official Master's in Conservation of Architectural Heritage). The three subjects, worth important credits in theory, focus on skills based on the critical development of interlinked cultural, technological and material aspects of built historic architecture and criteria for intervention in architectural heritage. To do so the crucial flip teaching methodology, which encourages debate and confrontation, is particularly interesting.

For the last few years the syllabi for these subjects have included a series of debates which students prepare for by studying the literature, initially working outside the classroom and promoting debate and critical analysis of these texts by specialists, theorists and/or regulation guidelines relating to architectural, monumental, traditional or vernacular conservation.

The current proposal for these debate activities has been the introduction of digital technologies as a tool to encourage debate between students, making the activity more dynamic. The Socrative online platform was used in this experience as an immediate feedback tool, mainly because of the immediate response it offers to the questions posed, which could relate to the opinion held by the students, their degree of understanding of previously explained concepts or any other information whose interpretation could improve the learning process.

Keywords: teaching innovation, debate, TIC, feedback.

1 INTRODUCTION

As a tool in higher education, debate can contribute to acquiring skills and content, as well as to the global education of students, who are able to develop and perfect cross-disciplinary skills linked to critical thought, interpersonal communication and groupwork [1-2]. The educational experiences presented below combine the use of ICTs and flip classroom with the technique of debate as a tool for teaching, learning and assessment within universities. In order to do so different teaching activities were carried out in three different subjects taught at the Department of Architectural Composition of the Higher Technical School of Architecture of UPV. Architectural Conservation (obligatory fifth-year subject from the Degree in Foundations of Architecture), Conservation of Non monumental Historic architecture (elective subject from the Master's in Architecture) and Theory and History of Conservation (obligatory subject in the Official Master's in Conservation of Architectural Heritage). The three subjects, worth important credits in theory, focus on skills based on the critical development of interlinked cultural, technological and material aspects of built historic architecture and criteria for intervention in architectural heritage

2 OBJECTIVES

This educational research project, based on the resource of debate [3] and prior teaching experiences has five main objectives:

1. Planning the content which the students are going to work on outside the classroom.

This has required coordination with teachers from the subjects, who have incorporated the Flip Classroom model to select and update texts by critics, scholars and experts, as well as international restoration charters. The students from all three subjects analysed and consulted these charters “on their own” outside the classroom. The Poliformat platform was used to upload multimedia content and other digital resources.

2. Organising the activities and practices for the classroom (“peer instruction”).

The teachers involved in the project held joint meetings to define the activities to be carried out in the classroom, as well as the didactic content and guidelines to be incorporated into non-presential activities. These proposals were also adapted to the existing syllabi of all three subjects. To do so, peer instruction activities were organised to encourage the debate, reflection and exchange of ideas from theorists of reference in the history of architectural conservation, international charters and declarations on restoration.

3. Seeking, adapting and designing the resources to be used by students in the classroom both through traditional mediums and “mobile learning”.

To facilitate debate tools such as the Socrative platform (<https://www.socrative.com/>), or similar ones used in drawing up questionnaires, surveys and discussions, were selected. “Opinion thermometers” were used to start the debate, working on a multidirectional educational line. Active teaching on the part of the students was proposed to encourage a more question-based than answer-based attitude [4].

4. Incorporating ICT tools into the pilot experience

These immediate feedback tools can be invaluable for finding out students’ opinions, the extent to which they understand what has previously been explained or any other information to be interpreted to improve the learning process, all hugely beneficial for an experience like Flip Classroom.

Although many technologies can help create a flip classroom, it is important to remember that technologies are tools, not end goals

5. Evaluating and analysing the pilot experience

This educational innovation project included an evaluation phase. It is important to obtain indicators which help identify achievements and/or evidence (quantitative and/or qualitative) to establish the extent of compliance with the project goals. Different data collection procedures/tools were used, in addition to the habitual treatment and analysis of data.

3 ACTIVITIES

3.1 Use of ICTs in debate activities

Debate is essential in the subject of Architectural Restoration. This strategy is extremely useful to students’ intellectual growth, as it allows them to connect the theory of a given subject with general problems in current society. In addition, debate encourages students to improve skills such as oral expression or the contextualisation of problems [5].

This experience incorporated technological tools to support and aid the exercise of debate itself. Free Socrative software was used for this, making it possible to easily create a questionnaire for students to complete on their mobile devices, tablets, PCs, etc.

Using Socrative, a questionnaire was prepared for debates in the subject of Restoration. This showed different interventions in architectural heritage and asked students to rate interventions following the theories of the author studied (reading texts). As all students completed the questionnaire and voted it was more feasible to monitor their participation in the debate. In addition they held their attention by making them participate throughout the debate (figure 1). For speed and ease when assessing answers the possible responses were divided into four set options: VB (very bad), improvable, inappropriate, suitable.

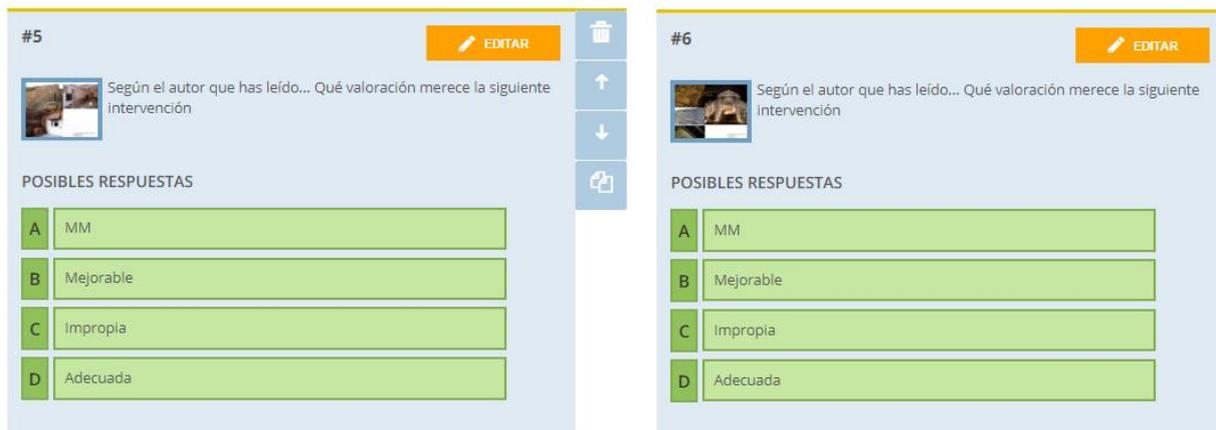


Figure 1. Example of the questions asked on the Socrative platform to encourage debate.

In actual fact, the aim of these questions is not to obtain the correct response, but to reflect on different theories which could be the driving force of future debate.

Once all the votes were cast, a screen classified the responses by percentage. These responses provided a general idea of the opinions of authors examined in the particular case under analysis (whether the opinions were homogeneous or completely opposed). Based on this first general observation of responses students were individually encouraged to start the debate proper (figure 2).



Figure 2. Students answering questions on their mobile devices and projection of results in order to prompt the start of debate.

Following the debate session, students were asked to use Socrative to evaluate the experience (figure 3). The analysis of the answers showed a good level of satisfaction in general, with around 50% of students stating that they felt the activity had been quite useful for understanding the subject, while approximately 26% of students felt that it had been useful for fully understanding the subject.

In addition this final test also asked the students whether this tool was useful for the purposes of co-evaluating their peers in other exercises, and approximately 97% of the answers were positive.



Figure 3. Final student survey on satisfaction with the tool.

3.2 Use of flip classroom for debate activities

Active learning helps students understand and retain information in theory subjects, while facilitating the development of cognitive skills such as analysis and critical thinking, from the upper tiers of Bloom's taxonomy. Accordingly, the students from two theory-based subjects (Restoration of Non Monumental Historic Architecture and Theory and History of Conservation) took part in classroom debates after individual study of the theory outside the classroom. Both subjects are linked to master's courses with highly mature and motivated students, keen to take part in critical activities within the classroom in order to tackle the subject of architectural restoration.

The Poliformat platform, the online repository of Universitat Politècnica de València, was used for both subjects. Teachers organised uploads of the material to be worked on outside the classroom before exploring this further through different active classroom practices connected with earlier individual study.

For the subject of Restoration of Non Monumental Historic Architecture several texts by major national and international experts on the study of the vernacular architecture from the 1970s on were uploaded to the platform. In addition, a selection of projects on the conservation of historic centres recognised in recent decades both in Spain and abroad was provided for the subject of Theory and History of Conservation. After reading and consulting texts and other sources of information including websites provided by teachers, students were free to choose an author or conservation project depending on their motivation or interest.

In class, groups of 4-5 students worked together for about 20 minutes to organise a brief PowerPoint presentation on the author or project, lasting around 5 minutes, to be shown to the rest of classmates (figure 4). At the end of the class the teachers organised a final Q & A session to cross-reference content and compare authors and projects examined. A basic template was developed for this groupwork, based on a "who/what/when/where/why/which answers" strategy and setting guidelines to synthesize content for the presentation (with a maximum of 12 slides).

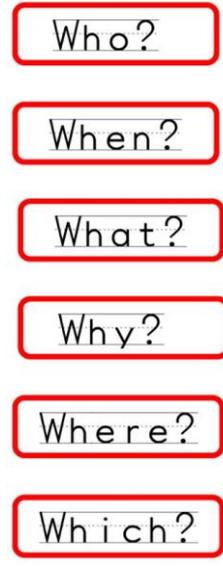
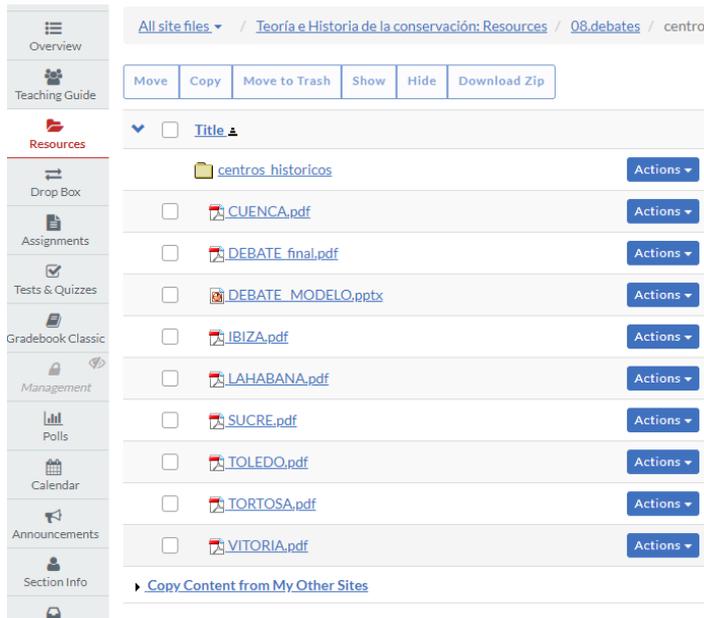


Figure 4. Debate on historic centres. Example of material selected by teachers, and organised on the Poliformat platform, made available for students to work on following the “who/what/when/where/why/which answers” template.

4 CONCLUSIONS

Incorporating the use of ICTs and flip classroom into the debate improved learning as these complementary resources promote work from the upper tiers of Bloom’s taxonomy. These dynamics take full advantage of the time spent on collaboration activities and group discussions in class, while working in depth on the content of theory subjects [6]. These initial experiences showed increased motivation as regards architectural restoration, among both students and teachers, due to the increased interaction and personal contact time, especially in subjects as specific and complex as those taught of the masters.

The debate activities involved students in their own educational process [7], making them responsible for their own learning while motivating them to express opinions to reason on theoretical points of reference and conservation projects, developing not only restoration but also cross-disciplinary skills which will benefit them in their future careers.

These experiences placed great emphasis on personalised and individualised learning, encouraging aspects such as cooperation and collaboration, enabling students to be active participants in the theory content of architectural restoration and “to create” their own knowledge, synthesizing both written and oral work.

NOTE

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