

## Design of didactic units on Heritage conservation. What kind of teaching Heritage conservation topics require?

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**Abstract:** The subject of teaching Historic and Cultural Heritage in primary and secondary schools has been widely covered in the last few years. However, the specific topic on Heritage conservation has been barely developed despite its transcendence from the point of view of future preservation of Heritage items. This paper presents the theoretical and practical background in which the design of a didactic unit on Heritage conservation has been based. Among the main objectives which are intended to be covered by such a didactic unit are the significance of the Cultural Heritage, the importance of its conservation, the recognition of Heritage locales, when is important to conserve them, differences between conservation and restoration, the influence of environmental conditions and so on. Possible evaluation activities and suitable schools in which the unit could be put into practice are also some of the subjects dealt with in this contribution.

**Key words:** didactic unit, Cultural Heritage, education, conservation, schools.

### Diseño de una unidad didáctica sobre la conservación del Patrimonio. ¿Qué tipo de enseñanza requieren los temas sobre conservación del Patrimonio?

**Resumen:** La enseñanza del Patrimonio Histórico y Cultural en los colegios de primaria y secundaria se ha cubierto ampliamente en los últimos años. Sin embargo, el tema específico de la conservación del Patrimonio apenas se ha desarrollado a pesar de su trascendencia desde el punto de vista de la preservación futura de los distintos elementos que conforman el Patrimonio. En este trabajo se presentan los aspectos teóricos y prácticos en los que se ha basado el diseño de una unidad didáctica sobre conservación del Patrimonio. Entre los principales objetivos que pretende cubrir esta unidad destacan el significado del Patrimonio Cultural, la importancia de su conservación, la posibilidad de reconocer lugares con Patrimonio, cuándo es importante conservarlos, las diferencias entre conservación y restauración, la influencia de las condiciones ambientales, etc. Las posibles actividades de evaluación y los colegios más adecuados en los que poner en práctica la unidad didáctica son también alguno de los temas tratados en este trabajo.

**Palabras clave:** unidad didáctica, Patrimonio Cultural, educación, conservación, colegios.

#### Introduction

There is an important relation between education and Cultural Heritage since through education it is possible to value Heritage items. This subject has been widely covered by primary and secondary schools in the last few years (Prats and Hernández 1999). However, the particular topic on Heritage conservation, either in the curative or in the preventive side, has been barely developed, above all, in Spanish schools. This point should be highlighted since only things that are known are valued and, consequently, suitable for being preserved for the future.

Cultural Heritage is classified into two wide groups. One of them named material or tangible culture which refers

to physical items produced by society. It includes built Heritage (e.g., monuments, civil and religious buildings, etc.) and objects (e.g., books, textiles, ceramics, metals, etc.) belonging to collections housed in museums and other institutions. The other group is named intangible culture and refers to practices, expressions, knowledge, and skills that some communities recognize as their own culture, such as traditions, dances (e.g. *flamenco* in Spain), songs (e.g. *fado* in Portugal), crafts, and so on (Munjeri 2004).

It is well-known the list maintained by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) on World Heritage, both for tangible and intangible assets. Spain occupies the third country in the list with the largest number of Heritage sites, which mean a tangible place or an intangible

item with a special cultural or physical significance. It is behind Italy or China but ahead of world powers such as France or Germany or USA. Apart from the number it is important to take into account also the state of conservation of these sites.

Heritage conservation is generally accomplished in two very distinct ways: the so-called preventive conservation and that named curative conservation. Preventive conservation is a strategy based on a systematic method of work which aims at identifying and controlling risks of deterioration of cultural goods. Accordingly, direct intervention on these goods is not required and, therefore, it is a strategy different to curative conservation in which a direct intervention is required to prevent loss or irreversible deterioration of such cultural goods (García 2014; Peña-Poza et al. 2014).

Aspects concerned with Heritage conservation are encouraged by international organizations such as the International Council of Museums (ICOM) or the International Centre for the Study of the Conservation and Restoration of Cultural Property (ICCROM). This latter promoted the meeting of Vantaa (European Commission, 2000), where the most outstanding lines of action adopted for a common European strategy on conservation of Cultural Heritage were: institutional planning, developing strategies, training of professionals, and dissemination and social awareness. Education of school students can be seen as one of the most important activities of dissemination and social awareness to promote knowledge on Heritage conservation. For this reason, the aim of this work was to design a didactic unit on Heritage conservation for being applied and put into practice in some schools.

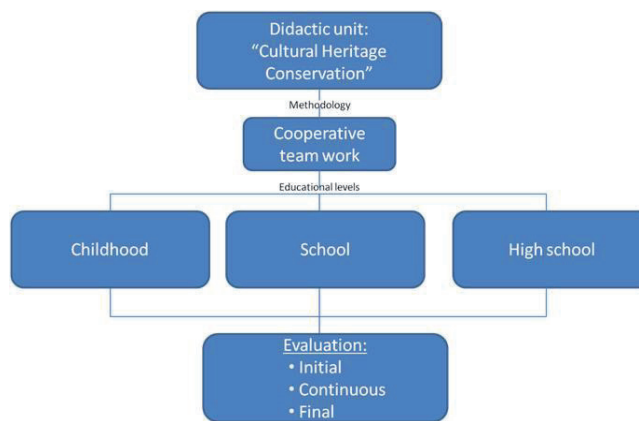
### Main objectives

The main objectives which are intended to be covered by the didactic unit are the significance of the Cultural Heritage, the importance of its conservation, and the recognition of Heritage locales. Moreover, the unit also intends to give the students the necessary knowledge on their very local Heritage, on differences between conservation and restoration, and on the influence of environmental conditions in its conservation. Figure 1 shows the conceptual map in which the didactic unit proposed is based.

Initially, as a first approach, the didactic unit is going to be applied in three different schools, with distinct student communities, within the region of Madrid. The three schools selected are the following: 1) a public school located at a small village (Cadalso de los Vidrios); 2) a mixed public/private school at a middle-size town (Valdemoro); and 3) a public school at a larger town (Alcalá de Henares).

### Methodology

Despite the didactic unit is going to be applied within the region of Madrid, the Spanish legal framework which justifies its application is based into the two following laws:



**Figure 1.-** Conceptual map of the didactic unit proposed.

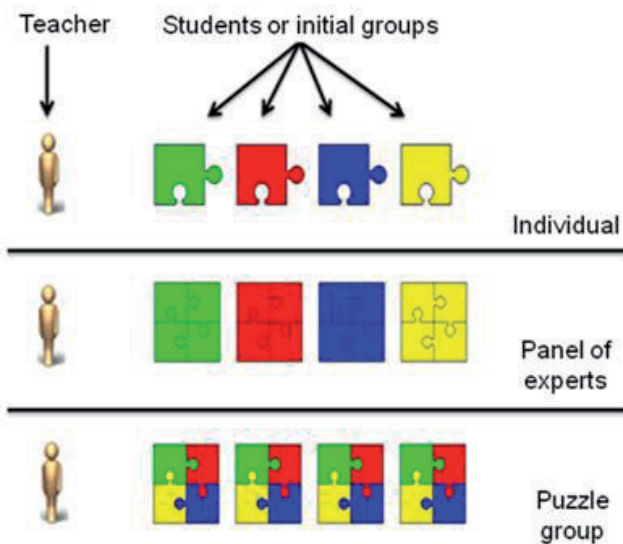
As far as the four grade of the primary school is concerned, the law which establishes the basic curriculum is RD 126/2014 (RD 126/2014, de 28 de febrero). Based on this law the didactic unit could be developed within the knowledge areas of Natural Sciences, Social Sciences, and Arts.

As far as the second grade of secondary school or high school is concerned, the law which establishes the basic curriculum is RD 1105/2014 (RD 1105/2014, de 26 de diciembre). In this case, the didactic unit could be developed within the domain of the Natural Sciences and Social Sciences.

The methodology and the teaching techniques developed by the didactic unit have two different backgrounds: theoretical and practical. The theoretical background is based on the cooperative work methodology following the well-known five principles by Johnson & Johnson (Johnson et al. 1994): positive interdependence, individual accountability, face to face interaction, interpersonal and small group skills, and group processing. An outstanding example of this cooperative work methodology is the technique of the Aronson puzzle [figure 2]. It is a powerful tool to confront different points of view among the students and allows them an interactive learning since he/she is the real actor in the teaching-learning process. Furthermore, this methodology avoids the “stowaway effect” (Slavin 1987) since all the students take part at the same time of the process of learning.

Other well-known example is the brainstorming technique, which allows the students the interaction with other students without being aware of the learning process. Such a methodology provides an opportunity for students to show the previous knowledge on Cultural heritage to other school mates. It may drive also to a prior discussion, in advance to the learning process, in which they can show their opinion about the need for its conservation and those procedures necessary to carry out this conservation.

To help the learning process two roles have been designed and developed. These two roles are represented by two characters: Erik and Nono. On the one hand, Erik is a curator and restorer of the Cultural Heritage who will help and guide



**Figure 2.-** Diagram of the methodology for the Aronson puzzle.

the students at the classroom. On the other hand, Nono is the personal computer for everyday tasks of Erik. The computer is very friendly and proposes the students some exercises to test the overall learning progress of the lesson.

Together with the theoretical educational program designed to be developed at the classroom, the didactic unit will be complemented with a practical program to be accomplished either outside or inside the classroom. A visit to a real Heritage site (e.g., a local historic building or a nearby museum) can be a good opportunity to reinforce the knowledge and the concepts learnt at the classroom. As a museum example, the visit can be undertaken to the Navy Museum of Madrid since its permanent collection is rich and diverse both from the point of view of materials and modes of exhibition, ranging from navigation instruments to ship's models for shipyards either in exhibition rooms or in showcases (Peña-Poza et al. 2014).

As a practical program, a restoration experience can be simulated inside the classroom. The activity may begin from a few fragments of a broken pottery vessel that the students could join to complete the whole shape of the original vessel. In a real case all the pottery fragments are not always available. For this reason, when the shape is completed, a set of gaps are observed. These gaps must be refilled with new material by the restorer and this new material must be easily distinguishable from the original one. To put students in place of the restorer when he/she is refilling the faults of a given Heritage good, they can be provided with a worksheet in which, for example, they have to refill some gaps in famous paintings.

### Evaluation of the methodology applied

In order to undertake a suitable diagnostic evaluation of the knowledge acquired by the students on Cultural Heritage conservation through the didactic unit, two distinct evaluation

procedures have been designed: continuous evaluation and final evaluation. One of the procedures for continuous evaluation is a worksheet to put into practice with small groups of students with the aim of encourage discussion on materials shown in the worksheet and restoration procedures to be applied. Such procedures should be friendly with preventive conservation in terms of temperature, relative humidity, illumination, and so on [figure 3].

This type of evaluation activities is based on the technique of the Aronson puzzle. To this end, the classroom is divided into different groups. A specialist in a given material is assigned to each of the groups. Once the specialist shows its knowledge to its group it can be simultaneously moved to the following group and so on. The activity consists in showing the students some images in a worksheet. The students should be able to answer different queries on its state of conservation, alterations, possible causes of such alterations, and suitable restoration tasks to help conservation among others.

A final evaluation will be accomplished at the end of the didactic unit to assess the level of learning reached by the students on Cultural Heritage conservation. The evaluation of the methodology applied will be also carried out by providing a teaching guide to the three schools in which the didactic unit is going to be put into practice.

### Final remarks

The activities of education of school students can be seen as one of the most important actions for dissemination and social awareness to promote knowledge on Heritage conservation. A good avenue to undertake these actions may be the design and development of didactic units on topics of Heritage conservation. The work here presented deals with a pilot experience to put into practice a didactic unit of these characteristics in three different schools located in the



**Figure 3.-** Worksheet example for small groups of students.

region of Madrid. The project is an on-going experience at the moment and it is scheduled for the 2016-2017 course term in the three schools. It is worthy to mention that the didactic unit has been very well received by directors and teachers of the three schools since both have pointed out the lack of topics on Heritage conservation in regular teaching programs. Therefore, it is expected that results will be consistent with the main objectives proposed by the didactic unit. After the pilot experience in the three schools mentioned, it is intended to carry out an assessment of the results obtained to evaluate if this unit can be improved and perhaps extended to other schools, not only located in the region of Madrid but also in other regions or communities of Spain.

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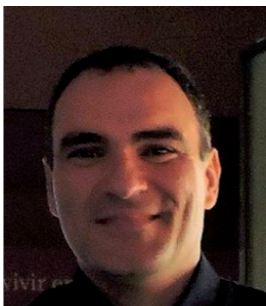
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