



## Art Conservation Training Programs and The Acquisition of Professional Competences: Archaeological Materials as Studio Case

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### 1. Introduction

Adaptation of teaching to the European Higher Education Area, has meant a change of the methodological strategies, so that students acquire the skills and abilities necessary to develop their future profession. This adaptation, in most Spanish university studies, has led to a reduction of one year in university, this has meant that many of the subjects have experienced significant reduction of credits.

Nowadays the courses at the department of conservation and restoration in the Bachelor of Fine Arts at the Universidad Politécnica de Valencia are being adapted to the new Degree in Conservation and Restoration. The disappearance of the Licentiate degree, which still has five years of training and the creation of this new four years undergraduate degree, is being a complex restructuration of the subjects taught, leading to a significant reduction in theoretical and practical credits assigned to each subject.

### 2. Objectives

The aim of this paper is to present the teaching methodology used in a complex, specific and heterogeneous field, such as the preservation and restoration of archaeological metals, where theoretical knowledge is achieved by students through attending lectures and independent work and the practical skills are acquired through real case studies, based on archaeological metal objects, all in a short space of time.

### 3. Methodology

Teaching of conservation and restoration of archaeological metals is done at present within the subject Project II: Conservation and restoration of archaeological materials. This year, due to the gradual change that is being made from the licentiate to the undergraduate degree, teaching credit assignation has become to the half. In fact, 7 credits are given quarterly in 9 hours of weekly lectures. This is a core subject that is developed in the last year of the Licentiate of Fine Arts and it will be given in the third year of undergraduate degree in Conservation and Restoration with the same assignation of teaching credits.

Usually the type of student who accesses to this subject has studied or is studying restoration electives subjects. However, these features are not always met, and students can access without any previous training in the areas of restoration. The planning of the subject must therefore take into account this heterogeneity, so that the student can successfully address the subject without decreasing the training level and the skills development, in relation with their incorporation into the professional field.

Adaptation to the European Higher Education Area has made necessary a change in the conception as to the number of hours of total work of the student. Therefore, it is necessary to consider both those working hours attending lectures, whether theoretical or practical type, and the work done by the student independently. In this sense it has been considered the recommendation of our university to assign 40% to the attending lectures and a 60% for non-attending work. Thus, this subject of 7 credits, is equivalent to a total of 175 hours, distributed in 70 hours of attending lectures and 105 hours of non-attending work

#### 3.1. Attending lectures

Lectures are divided into theoretical and practical in laboratory, both associated with four teaching units (Table 1). Due to the limited time of the subject, the 20% of the hours is dedicated to theoretical lectures (Table 1), while the 80% is dedicated to make practices in the lab. As can be seen theory is greatly reduced compared to the practice, lectures typically have a duration between 1 to 1.5 hours per lesson. The student's theoretical learning is obviously reinforced by their independent work through articles and links provided by the teacher.

The reduced theoretical hours number is because the student must acquire specific skills in terms of restoration techniques for these materials. Laboratory practices are carried out with archaeological metal parts, particularly iron, bronze and lead parts, selected by the teacher and provided by museums. These parts mean for the student the base of their learning, so they must have a minimum of pathologies, which over the course should be resolved. Depending on the difficulty of each piece, the restoration will be made individually or by a students group, and under the teacher supervision.

TEACHING UNITS	
I	<b>Metallurgy Historical introduction</b>
	Metals along the history
II	<b>The metal</b>
	Metals composition and structure
III	<b>Corrosion</b>



	Original surface and corrosion products
<b>IV</b>	<b>Conservation and Restoration</b>
	Principles on Conservation and Restoration of archaeological metal objects
	Iron treatments
	Bronze treatments
	Lead treatments
	Precious metals treatments
	Preventive conservation
<b>Table 1. Teaching units</b>	

### 3.2. Non-attending work

The non-attending work or independent student work, consists in different works (Table 2), particularly 19, which will be the base of the last job: a technical report of treated parts restoration during the attending laboratory practices. That is why both the attending and non-attending hours dedicated to the subject should be closely related.

Students Independent work is perhaps the task in which it is more necessary to insist in order to be carried out by the student That is why it is so important to highlight the importance of innovation in autonomous learning, since it is an intense learning and in a short period of time.

#### 3.2.1. Virtual platform PoliformaT

PoliformaT is the learning platform at the UPV. On this platform, teachers and students can share all the information about their subjects and use the tools for its management: repository of content, tasks, tests, etc. [1] All documentation of the course, lessons, articles, links, complementary activities, etc., is only available to students through PoliformaT platform, so that they can consult when they want.

Of course, the use of this tool is an effort by the teacher both to update contents and to continually review the progress that pupils face in their non-attending work, as we will see below. Like this, we are gradually checking that the student is more motivated in carrying out this work.

As described, throughout the subject students should be doing autonomous work. This work must always be on the platform, so that the teacher can guide to the students in their works while they move to the final delivery date. The preparation and review of these non-attending activities are considered an extra work for the teacher, but when working with digital formats, these issues become faster, because it allows to make annotations and corrections quickly and visually in real time. The work correction and qualification is also done virtually while the final check is always made in tutorial.

Nº	TITLE	TYPE	
1	Technical Study of an iron archaeological object	A	NA
2	Technical Study of a bronze archaeological object	A	NA
3	Technical Study of a lead archaeological object	A	NA
4	Corrosion products identification	A	
5	Diagnosis of an iron archaeological object	A	NA
6	Diagnosis of a bronze archaeological object	A	NA
7	Diagnosis of a lead archaeological object	A	NA
8	Map of damages of an iron archaeological object	NA	
9	Map of damages of a bronze archaeological object	NA	
10	Map of damages of a lead archaeological object	NA	
11	Intervention proposal of an iron archaeological object	A	NA
12	Intervention proposal of a bronze archaeological object	A	NA
13	Intervention proposal of a lead archaeological object	A	NA
14	Restoration process of an iron archaeological object	A	
15	Restoration process of a bronze archaeological object	A	
16	Restoration process of a lead archaeological object	A	
17	Technical Data Sheet of an iron archaeological object	NA	
18	Technical Data Sheet of a bronze archaeological object	NA	
19	Technical Data Sheet of a lead archaeological object	NA	
20	Restoration Report fro archaeological objects	NA	
<b>Table 2. Attending (A) and Non Attending Works (NA)</b>			

### 3.3. Tutorials

The use of tutorials is especially useful to reinforce the autonomous learning process of the student. The teacher



should create a good atmosphere for students to feel secure and confident in these meetings, because they are not only to answer questions in the last minute prior to an exam, but they are a training tool more. From the first session, the student finds that the questions made are addressed with immediacy. Also, they can see how their work can improve with the teacher indications.

#### **4. Conclusions**

The adaptation to the EHEA (European Higher Education Area) has made necessary a change in the conception of university teaching and student autonomous work is key to his/her learning.

The use of platforms as PoliformaT is a good tool for the teacher and the student. This tool makes easier to the teacher a real-time assessment of the student work evolution. Tutorials have an essential role as a guide and coordination of the student autonomous learning, combined with the attending activities that are developed in the classroom.

The results obtained encourage us to continue to incorporate new activities and to get more resources available for future courses.

#### **Reference**

[1] <http://formaciononline.blogs.upv.es/poliformat-2/poliformat/>