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Teaching innovation: the management and development of extracurricular activities in the field of cultural object conservation and restoration of wall painting. Chapel of San Andrés (Seville-Spain)

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//Abstract

INTRODUCTION. This article describes a practical experience of teaching innovation, carried out as part of the Bachelor's Degree in Cultural Object Conservation and Restoration at the University of Seville (Spain). **METHOD.** The main aim of the academic internships was to contribute actively to students' training by giving them real practical experience in a professional environment, outside of the familiar environment of the classroom. **RESULTS.** The use of specific conservation-restoration methods in a project involving mural paintings located in the dome of the Church of San Andrés (Seville) enabled students to experience a real professional situation. The large format of the mural paintings and the implementation of occupational health and safety measures enhanced students' skills and abilities, which are associated with their future profession, and gave them invaluable experience for future job applications. **DISCUSSION.** The use of appropriate resources in the teaching and learning process can help to increase the quality of teaching.

//Keywords

Teaching innovation; Extracurricular activities; Conservation; Restoration; Mural painting.

//Recommended reference

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//Títol

Innovació docent: gestió i desenvolupament d'activitats extracurriculars en l'àrea de la conservació-restauració de pintura mural. Capella de San Andrés (Sevilla-Espanya)

//Resum

INTRODUCCIÓ. Aquest article descriu una experiència pràctica d'innovació docent duta a terme en el grau universitari de Conservació i Restauració de Béns Culturals de la Universitat de Sevilla. **MÈTODE.** Les pràctiques acadèmiques descrites tenien com a objectiu fonamental contribuir activament a la formació dels alumnes i aportar-los una experiència pràctica professional real en traslladar-los del seu àmbit habitual, l'aula, a un entorn professional. **RESULTATS.** L'aplicació de la metodologia específica de conservació-restauració en projectes d'intervenció de pintura mural, concretament a la cúpula de l'església de San Andrés (Sevilla), va permetre que l'alumnat prengués contacte amb una realitat professional concreta, on el gran format de les pintures murals i l'aplicació de les mesures de seguretat laboral van tenir com a resultat la millora les seves destreses i habilitats pel que fa als processos propis de la seva professió. A més, va suposar una experiència d'interès per a la seva inserció laboral. **DISCUSSIÓ.** Es demostra, amb això, que utilitzant els recursos didàctics apropiats en el procés d'ensenyament i aprenentatge es pot ampliar la qualitat de la docència.

//Paraules clau

Innovació docent; Activitats extracurriculars; Conservació; Restauració; Pintura mural.

//Título

Innovación docente: gestión y desarrollo de actividades extracurriculares en el ámbito de la conservación-restauración de pintura mural. Capilla de San Andrés (Sevilla-España)

//Resumen

INTRODUCCIÓN. En este artículo se describe una experiencia práctica de innovación docente llevada a cabo en el grado universitario de Conservación y Restauración de Bienes Culturales de la Universidad de Sevilla. **MÉTODO.** Las prácticas académicas descritas tenían como objetivo fundamental contribuir activamente en la formación del alumnado aportándoles una experiencia práctica profesional real al trasladarlos de su ámbito habitual, el aula, a un entorno profesional. **RESULTADOS.** La aplicación de la metodología específica de conservación-restauración en proyectos de intervención de pintura mural, concretamente en la cúpula de la iglesia de San Andrés (Sevilla), permitió hacerles tomar contacto con una realidad profesional concreta, en la que el gran formato de las pinturas murales y la aplicación de las medidas de seguridad laboral tuvieron como resultado la mejora de sus destrezas y habilidades en torno a los procesos propios de su profesión, además de aportarles una experiencia de interés para su inserción laboral. **DISCUSIÓN.** Se demuestra con ello que utilizando los recursos didácticos apropiados en el proceso de enseñanza y aprendizaje puede ampliarse la calidad de la docencia.

//Palabras clave

Innovación; Actividades Extracurriculares; Conservación; Restauración; Pintura Mural.



1. Legal framework of academic internships

The European Higher Educational Area (EHEA) promotes and regulates external academic internships for Spanish university students. The objectives of internships are stated as follows in Spanish Royal Decree 1707/2011 (2011, p.132392):

To contribute to students' holistic education, complementing their theoretical and practical learning; to provide knowledge of working methodology that is suitable for the professional setting in which students will operate; to compare and apply the knowledge acquired; to foster the development of technical, methodological, personal and participatory competences; to gain practical experience that facilitates entry into the labour market and improves future employability; and to foster the values of innovation, creativity, and entrepreneurship.

The University of Seville (Spain) is authorised to make agreements and promote the participation of students in academic internships that contribute to achieving the objectives established by the EHEA. There are two modalities: curricular internships and extracurricular internships. The objectives, values, and aims are the same in both cases. However, curricular internships are included in the curriculum of the degrees on offer, while extracurricular internships are proposed as an optional activity, "of a voluntary nature during the educational period" (Spanish Government Agreement 5.6/CG 25-7-12, p.5). All internships should be carried out with effective academic and professional instruction (Spanish Royal Decree 1393/2007).

Works of art and the preventative, curative and restorative actions that are carried out on them have been extensively regulated at international level through conventions, treaties and recommendations, and at national level in Spain (González-López, 2015). Spanish regulations on this area require analysis and assessment of the state of conservation before the intervention phase, using a work methodology based on knowledge of the object. On completion, all of the processes applied to the work of art must be documented in a final report (Spanish Royal Decree 276/1987).

Consequently, the proposed learning activity had to be offered to students as an extracurricular internship for it to fit within the legal framework, and had to be based on a rigorous project that met the conservation requirements of the chosen cultural item. In this case, the items were murals painted on the dome of the *Hermandad de los Panaderos* in Seville. The activity proposed for this empirical study is included within the legal framework of extracurricular activities, whose objective is to contribute to improving learning through direct intervention on real works.

2. Contextualisation of the learning environment

As noted above, the extracurricular activity was an optional educational proposal, complementary to the teaching programmes included in the Degree in Cultural Object Conservation and Restoration at the University of Seville (Spain). The activity was specifically aimed at students in the final year of the undergraduate degree.

This bachelor's degree is taught through a series of subjects classified as basic, mandatory and optional. All the subjects are designed to develop in-depth knowledge of cultural heritage. The teaching of conservation and restoration is grounded in the ethical norms of the profession,

whose aims are to respect the original character of the artworks and their historical, ethical and documentary value, in addition to their material integrity (Verification Report 2010-2011). The objective is to train professional conservationist-restorers who are highly qualified in the areas of reflective inquiry, documentation, assessment and intervention on cultural objects, and can contribute to the preservation and understanding of historical and artistic events related to heritage (University of Seville, 2015a).

Specific conservation and restoration actions applied to different types of art works (e.g., paintings, murals, sculptures, textiles, graphic documents and ceramics) allow students to put their theoretical knowledge into practice. In general, the learning methodology is based on the practical application of theoretical content to intervention in artworks, and is presented in two phases. The first, "the experimental approach", is based on the execution of methods and procedures and the use of intervention materials on artworks created by the students themselves. The second, "direct intervention on real works", generally involves heritage from the surrounding environment: churches, private collections and institutional offices in Seville and neighbouring areas. In this second phase, students experience working on pieces of art that are genuinely important due to their historical and artistic value. They have to plan and implement appropriate actions and demonstrate what they have learnt, thereby internalising what Brandi described: *"Restoration constitutes the methodological moment of recognition of the work of art, in its physical consistency and in its aesthetic and historical dual polarity, in order to transmit this to the future"* (Brandi, 2002, p.15).

The extracurricular activity designed and proposed for this practical study was focused on the conservation-restoration of painted murals that form part of Seville's heritage. These were used to help enhance learning about direct intervention on real works. Here, the aim was to remedy one of the greatest difficulties in learning about works made on walls, which themselves are usually part of another immovable structure: the size and physical layout of murals make it impossible to replicate the specific problems and working conditions associated with this type of art object, and a normal class schedule does not provide enough time to carry out the required interventions. Therefore, the teaching programmes for intervention on architectural art are limited to the first phase, the experimental approach, and are mainly based on mock-ups created by students that fit the walls of the classroom. Intervention on a cultural item has its own time demands, and it is implied that class schedules should not clash with the occasionally incompatible intervention schedules set by the class itself (4 hours a week). Thus, this proposed practical experience offers an innovative way to complement the classes taught in the classroom (Biggs, 2005).

3. Extracurricular activity: description and objectives

Seville is an Andalusian city known for its varied, rich artistic and cultural heritage (Sánchez Herrero, Roda Peña and García de la Concha Delgado, 2003). A living example of this heritage is found in its churches and palaces, which reflect the development of the cultures that settled in the city. Painted murals play an important role as part of this heritage, due to their character and uniqueness. Given this artistic and cultural resource and the difficulty in scheduling class time for direct interventions on large-scale works, and based on a proposal by the *Hermandad de los Panaderos* of Seville to perform conservation work on mural paintings on their dome, it was



decided to design and create the learning activity described here, entitled “Conservation and Restoration Intervention on Mural Paintings on the Dome of the Church of San Andrés (Seville)”.

The chapel is located in the historic city centre of Seville. This religious and cultural building is the only remaining vestige of the site's old function as a hospital. The pictorial decoration includes both figurative and ornamental representations. Iconographically, the four evangelists (Matthew, Mark, Luke and John) alternate with images of the four fathers of the Church (Saint Augustine of Hippo, Saint Gregory the Great, Saint Ambrose of Milan, and Saint Jerome of Stridon). Each figure occupies one of the eight sectors of the dome, which is completed by a central rosette. The rosette sits a top of a majestic mixtilinear gable supported by four scallops decorated with plant features. The architectural lines are defined by linear strokes that both reinforce and enlarge them. The rosette is constructed from plaster, with pictorial applications using tempera paint (Ferrer Morales, 1995).

One of the main characteristics of these mural paintings that led to them being considered for this extracurricular activity is their large dimensions and the height at which they are found (approximately 16 m). Due to these characteristics, their conservation involves a series of new teaching challenges and learning goals for the students (Araujo & Sastre, 2008).

The proposed educational activity was based on the creative arts, analysis, and the exemplification of specific art practices. It was also based on progressive education, whose main goal was to enhance university students' understanding of work methods used in the professional setting of conservationists and restorers. The activity was designed to improve students' skills, abilities and professional competences and give them practical experience that would help their entry into the labour market. All of this was developed through direct intervention with real work, and demonstrates the viability of this activity as a highly effective learning tool. When students were working on the murals, they left their usual environment, the classroom, and developed their ability to adapt to new spaces with the use of fixed and mobile scaffolding. Consequently, they also had to incorporate new habits relating to workplace safety and the use of individual safety equipment.

4. Management of the external internship

For an activity with these characteristics to be completed by a teaching team, a project agreement is required. In this case, it was signed by the *Fundación de la Investigación de la Universidad de Sevilla* (Research Foundation of the University of Seville, FIUS) and the collaborating institution. The teachers involved in the activity served as directors or principal investigators (Universidad de Sevilla, 2015b). In the field of conservation-restoration, management of these projects is planned in a way that reflects a similar activity on the labour market. First, the basic project with conservation-restoration specifications is drawn up (Spanish Royal Decree 276/1987), including a proposal with an itemised budget, then the project is accepted by the client, and finally, a contract is signed between the university and the client through the FIUS. Although the teacher must draw up a professional project, this process is not itself binding for the extracurricular internship that is offered to students. In learning activities designed for environments that require a conservation and restoration project that is specific to the cultural item that will be the object of the practical experience, both the planning and the

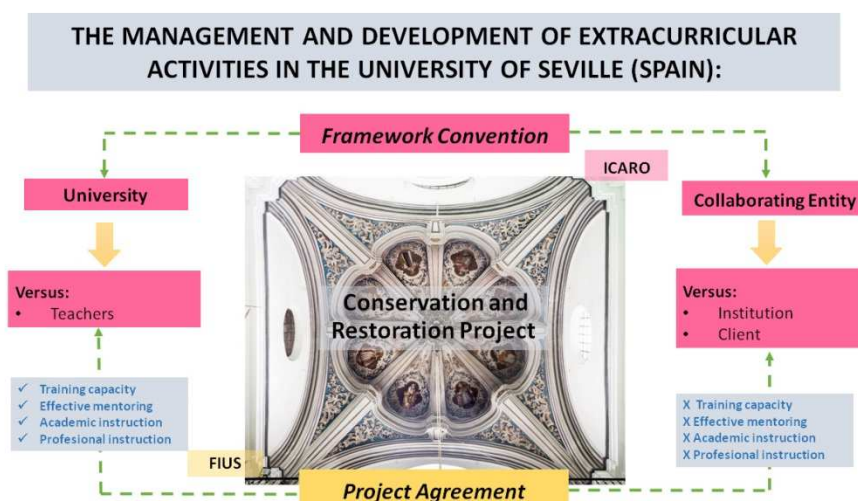


execution of the project must be undertaken by the teaching team that is the most capable of successfully completing it on an educational and professional level (European Confederation of Conservator-Restorers Organisations [ECCO], 2013).

The management of the learning activity began with the signing of a framework agreement between the University of Seville and the *Hermandad de los Panaderos* (Seville) as the collaborating entity. It was offered as an extracurricular internship to students enrolled in the Bachelor's Degree in Cultural Object Conservation and Restoration at the University of Seville (Spain). The administrative processes involved in publishing the elective course, selecting the students, processing civil liability insurance, and accepting the students were carried out by the Secretariat of Business and Employment Internships, through the ICARO platform (Portal for the Management of Business and Employment Practices, used by Andalusian public universities, the Technical University of Cartagena, and the Autonomous University of Madrid).

When the objects of intervention are cultural items of a certain size, as was the case of the painted murals (which stand approximately 16 m above the ground and have a pictorial surface of 150 m²), a determining factor in the internship is the prevention of specific occupational hazards relating to the handling of toxic products and working at heights, among other factors. Lecturers who carry out an activity outside of the normal place of work and education must submit a study permit/license for the period of execution of the project. In addition, the work involved the use of scaffolding of a significant height, which represents a serious occupational hazard. Thus, through its service for preventing occupational hazards (SEPRUS) (Universidad de Sevilla, 2015c), the University of Seville offered specific training for lecturers, medical tests for suitability to work at heights, and control of the scaffolding, among other activities. The students involved in the extracurricular internships had to have civil liability insurance, managed by ICARO through the collaborating entity. See Figure 1.

Figure 1. Conceptual framework



Conceptual framework for the management of extracurricular internships involving conservation and restoration projects at the University of Seville. Source: Prado-Campos, B.

5. Methodology and work protocol designed for the extracurricular internship "Conservation and restoration intervention: mural painting on the dome of the Church of San Andrés (Seville)"

To demonstrate the viability of performing a research project through extracurricular internships outside of the classroom, we took as a reference the proposal of two teachers from the Department of Fine Arts at the University of Seville who are responsible for management, intervention on heritage assets and teaching the student body, all undertaken in real-time with painted murals that form part of Seville's heritage.

Figure 2. Church of San Andrés (Seville)



General image of the mural paintings at the Church of San Andrés (Seville). Source: Prado-Campos, B. & Zambrana-Vega, M.D.

The extracurricular activity was specifically designed for eight previously selected students and took place over a two-month period, in which the performance, methods and processes used in the project were analysed. A six-tower scaffold structure needed to be built for the activity, with three fixed platforms. The first two covered the scalloped section of the mural, and the third filled the cylindrical area and the dome itself. Given that the dome is curved, two mobile scaffolds were also used with two levels that enabled safe access to the highest parts of the dome and the central rosette. Bearing in mind the specific occupational safety measures, training and learning to walk and work on the platform led to a change in the students' perspectives regarding the professional setting, as did the introduction of new situations within their learning. The application of health and safety, hygiene and environmental regulations to the activity of cultural object conservation and restoration was essential to participation, and these regulations were presented at the start of the project.

The students formed two work teams, corresponding to two shifts. Each shift worked four hours a day, five days a week. This schedule allowed the teachers to monitor and supervise the students



at all times. The unique characteristics of the work environment made it a potentially dangerous place, so special attention was paid to students' learning of the application and use of various safety systems.

In the first week, the students were introduced to the context of the learning activity through an explanation and discussion of previously performed studies on the work that would be the object of the intervention, in addition to a description of the action protocol and work phases to be developed. The working methods and procedures were fine-tuned by testing specific techniques and materials (Phase 1: graphical documentation in situ, initial photographs, cleaning test in layers, tests for fixing and consolidating strata, taking samples from the pictorial layer and mortars, and determining the level of cleanliness). Joint seminars were held at the end of each session, during which impressions, the observed results and possible modifications to the proposed conservation methodology were presented. These seminars culminated in joint decision-making about the most appropriate processes for conserving the paintings (Mora & Philipot, 1999).

While the specific methods of action (phases 2, 3 and 4) were carried out, the students made photographic and documentary records of each part in which they were involved. This helped them gain the ability to document data derived from the applied treatments. To control and monitor the activities and the work itself, diagrams and representative graphics were created, based on photographs of the murals, upon which different layers of parchment overlapped. On these layers, each student marked the damage detected, the current phase of the project, and the interventions performed each work day. The teachers monitored students' involvement and skills as the restoration process advanced, basing their evaluations on documents used to calculate the expected daily time input and output (Botticeli, 1992).

In turn, the intervention criteria were analysed in different phases of the supervised project and constructive discussions were held. Each of the processes was previously presented by the teachers, and practical demonstrations of the materials and methods of application were given. All of the tasks, materials and the progress that was made were recorded in a field journal by the lecturers, in order to monitor how the work was advancing, while also supervising the work that was being undertaken by the students. Finally, once the intervention of restoring the painted murals had been completed, all of the documents provided by the students were collected and compared with the information noted in the field journal, and thereby the results of the activity were obtained and the competences and skills acquired by each student were evaluated. At the end of the project, the students and lecturers completed standardised surveys provided by ICARO to assess the quality of practical activities.



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Table 1. Work phases

| 1 st WORK PHASE | WEEK |
|---|-------------|
| <ul style="list-style-type: none"> • Graphical documentation in situ (damage maps) • Initial photographs (general, detail and under different types of illumination) • Cleaning test in layers (selection of areas and development of different methods of application) • Tests for fixing and consolidation of strata (different types of products and methods of application) • Sample taking from the pictorial layer and the underlying mortars • Determination of the level of cleanliness | 1 and 2 |
| 2nd WORK PHASE | |
| <ul style="list-style-type: none"> • Cleaning dust from the surface (mechanical cleaning) • Attachment of the painting strata • Elimination of low-quality repainting (combination of chemical cleaning with mechanical cleaning) • Cleaning of the painting strata | 3, 4, and 5 |
| 3rd WORK PHASE | |
| <ul style="list-style-type: none"> • Attaching mortars • Sealing cracks • Adhesion of unstuck pieces | 6 and 7 |
| 4th WORK PHASE | |
| <ul style="list-style-type: none"> • Reintegration of mortars • Chromatic reintegration (reversibility criteria) • Protective layer | 8 and 9 |

Proposal of work phases for intervention on paintings. Source: Prado-Campos, B. & Zambrana-Vega, M.D.

6. Results and conclusions

There are two key factors in the creation and implementation of an extracurricular learning activity based on intervention projects to conserve and restore a cultural object: the students and the cultural item.

On completion of the extracurricular internship, it was clear that the objectives had been met, because the students performed well and the activity had considerable educational impact. The students considered that the experience was crucial to their initiation as professionals, and provided them with an excellent tool to improve their academic and professional coursework. In turn, this optimised their future entry into the labour market, given that they had acquired skills to carry out interventions on artistic works with similar characteristics. This was clearly expressed in the standardised surveys provided by ICARO that they completed at the end of the practical

activities. All of these factors contributed to broadening their education in the Bachelor's degree in Cultural Object Conservation and Restoration.

Another conclusion was that students' direct involvement in the development of the project gave them the opportunity to acquire the requisite training and technical skills. The use of appropriate pedagogical resources in the teaching and learning project also enhanced the quality of teaching; a dimension that had not been studied before.

It was also demonstrated that lecturers on this degree successfully extended their teaching beyond the classroom, by carrying out a planning process with students that was compatible with performing the proposed intervention, and by meeting, in terms of timing and form, the objectives proposed in the intervention project.

Thus, as a general conclusion, extracurricular internships are clearly enriching for students on the Bachelor's Degree in Cultural Object Conservation and Restoration because they allow them to experience a realistic "simulation" of what their profession will require of them in the future. However, the figure of the teacher as manager and trainer is necessary for this experience to occur, and at the time of writing his or her professional effort and level of involvement in the management of projects of this magnitude are hardly recognised or accredited.

The regulations and procedures for internships are considered insufficient for justifying the participation and involvement of the faculty. Assuming responsibility for this activity demands great effort on the part of the teacher, given that he or she must write the project; implement the project plan; coordinate and mediate between the university, university bodies, and the collaborating entity; process and manage different agreements; educate and mentor the students; and, among many other things, take responsibility for occupational health and safety. All of this management involves coordination between public and private administrative procedures, taking care to fulfil their timeframes and forms.

Another observed shortcoming, which we believe is due to a lack of knowledge of the profession of conservationist/restorer by university services, is the need to consider civil liability insurance and specific accident insurance for this type of student internship.

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