FROM ON-CAMPUS TO ONLINE INSTRUCTION IN POSTGRADUATE BUILT HERITAGE MANAGEMENT STUDIES

Laura Gilabert-Sansalvador[1], María José Viñals[1], María Emilia Casar Furió[1], Esther Capilla Tamborero[2], Luis Francisco Herrero García[2]

[1]*Centro de Investigación Arquitectura, Patrimonio y Gestión para el Desarrollo Sostenible PEGASO, Universitat Politècnica de València (SPAIN)*
[2]*Instituto Universitario de Restauración del Patrimonio, Universitat Politècnica de València (SPAIN)*

Abstract

Fieldwork (or field-based learning), design by research, and *in situ* data collection are essential in researching and working with built heritage. They are a fundamental part of the academic program of the Preservation of Architectural Heritage postgraduate studies at the Universitat Politècnica de València (UPV). Due to the health emergency caused by the coronavirus Covid-19 in March 2020, on-campus teaching-learning had to switch to online mode urgently and unexpectedly. This entailed particular challenges for the *Heritage Management Studio* course because its practical performance is based on visiting locations and heritage assets that in themselves are objects of study.

The use of the UPV teaching-learning institutional platform (*PoliformaT*) combined with the *Microsoft Teams* video conferencing application proved to be effective to address the online regular theoretical lessons; however, hands-on practical experiences were more difficult to organize. Thus, it was necessary to adapt the learning method to the context, design new alternative tasks and identify available virtual tools and means in order to organize the practical teaching and, at the same time, fit in with the quality requirements of the Master's program. Live streaming activities such as collaborative international engaging webinars, invited lectures and online interviews with heritage managers were conducted as a part of the instructional offer. Videos, documentaries, and virtual tours were also used as extra resources to get to know the analysed heritage sites.

In addition, the teaching staff adopted several measures to alleviate the effects caused by the social distancing, by encouraging collaboration and relationships among the students through the development of teamwork, and by ensuring social virtual interaction between teachers and students to assist students in their commitments and to provide them with emotional and motivational support.

This paper describes how the course was adapted and analyses the challenges and opportunities that online teaching-learning presents for the future in the specific field of Built Heritage Management. It highlights the existing shortcomings in the availability of digitized information on this topic, which made it difficult for students to conduct their research and management projects. It also discusses the opportunity provided by the situation to address new issues in Heritage Management, such as visitor safety and health in cultural tours, virtual access to heritage or strategies to reconnect heritage with the public, from which very innovative student projects emerged.

Keywords: Built Heritage Management, Online Teaching-Learning, Heritage Digitalization, Covid-19 Pandemic, Higher Education Institutions.

1 INTRODUCTION

Built Heritage includes cultural assets of architectural, archaeological, and urban type. This type of heritage is becoming increasingly important for society as an element that belongs to the changing global world [1]. Heritage Management is a broad discipline that encompasses all actions for protection, conservation, planning, assessment, maintenance, and dissemination. It must be a participatory process and must involve the local community so that the heritage asset continues to nourish collective memory and identity, as well as to offer new opportunities for progress and prosperity. Therefore, interdisciplinary teams are required that will be able to analyse complex situations in-depth, as well as to design projects with short-term and long-term strategic actions and objectives. For this reason, heritage conservation and management studies form a fundamental pillar of education and culture in modern societies. Many universities offer this type of studies, especially at the postgraduate level, and usually in on-campus mode, as they involve the development of practical

activities and require fieldwork. The Universitat Politècnica de València (UPV) is one of the Spanish universities that offer these studies through the Master's Degree in Preservation of Architectural Heritage program, which stands out for offering a dual specialisation in intervention techniques and management of heritage sites.

At UPV, similar to other universities around the world, the emergence of Covid-19 led to a sudden change in teaching-learning method to adapt to the measures taken as a result of the pandemic. This paper presents the analysis and assessment of the adaptation carried out in the *Heritage Management Studio*, which is the most relevant course of the Heritage Management speciality offered by the UPV.

1.1   The *Heritage Management Studio* course

Heritage Management Studio is the final course offered in the Management speciality of the Master's Degree in Preservation of Architectural Heritage program at the UPV. It is a course of 10 credits according to the European Credit Transfer and Accumulation System (ECTS) that is taught in on-campus mode throughout the second half of this program. The main objective of the course is to train students to design and formulate an architectural heritage management project, by applying all the knowledge acquired in previous courses to a real case study. It is, therefore, an inclusive and eminently practical course in which students develop a real project before preparing their Master's Thesis. The methodology of this course is based on in-person teaching-learning and is designed as a project-based "studio course" [2].

The course is developed in two parts: the first part is devoted to the collection, analysis, and diagnosis of data, where students work collaboratively as a team; the second one is devoted to designing management proposals that students develop individually based on the results acquired from the first part.

Every year, the teaching staff of the course chooses a heritage asset or site that proves viable to visit so that students could conduct the fieldwork with ease. The management projects are carried out, for example, in heritage ensembles such as historical centres, archaeological sites, castles and fortresses, monasteries or religious buildings, sets of industrial heritage or other heritage buildings of special relevance.

In the first part of the course, visits and data collection are performed *in situ*, which provides students with valuable knowledge about the heritage site, its physical and social environment. These tasks have a positive effect on the cohesion of the group, forging common interests and enhancing teamwork, as suggested in the transversal competences of the course. Additionally, meetings are organized with specialists who accompany the students during visits and offer lectures in the classroom. In-depth interviews are also conducted with site managers and professionals who have carried out conservation and management projects. Students also look for information on the object of the study in specialized archives, libraries, and repositories. Additionally, similar heritage sites are visited and analysed for comparative studies (benchmarking analyses) that serve as a reference when identifying specific needs and assessing successful cultural management solutions.

With the assistance of supervisors, students work in groups using collected information to conduct an in-depth analysis of the current condition of the heritage site, and the first diagnosis regarding its needs. Each group works on a specific topic: historical and architectural aspects, legal and urban conditions, and socio-economic issues. The results of these three analyses are presented, discussed, and assessed in class. In this part of the course the emphasis is made on the reliability and objectivity of data processing so that, once assessed and reviewed, the results can be shared among all students and used in the second part of the course as a reference documentation database for developing the individual management projects.

The second part of the course begins with a session of reporting and sharing findings. From this discussion, management projects proposals emerge. These proposals range from guidelines for the development of complex management instruments (master plan, cultural management plan, preventive conservation plan, dissemination plan, public visitation project, etc.), to more specific actions such as making preliminary steps toward legal protection register of the sites (Cultural Asset of National Interest, World Heritage Site, etc.), as well as interpretation or educational programs for heritage places. At the end of this session, a project is assigned to each student.

During this second half of the course, students develop their project with the assistance of supervisors; at the end of the semester, they present and publicly defend their management projects in a participatory and discussion session.

The nature of the course is essentially practical and applied, and is developed in a "studio" format, which is a common educational model in Architecture studies. It is a process that includes project-based work on complex situations, continuous students' production supervised by teachers, frequent formal and informal critique, consideration of a heterogeneous range of issues, the use of the precedent knowledge, the creative use of constraints, and the central importance of graphic material [2]. These characteristics imply the participation of supervisors from different fields working in a coordinated manner. This teaching-learning system is highly suitable for interdisciplinary fields such as heritage management, as it reproduces professional reality.

1.2   The 2019-2020 academic year and the emergence of Covid-19

In the 2019-2020 academic year, the *Heritage Management Studio* consisted of a group of 11 students from 8 different nationalities (Brazil, Colombia, Chile, China, Ecuador, Spain, Italy, and Mexico). The heritage site chosen by the teachers for this course was the Lonja de la Seda de València (Spain). It is a masterpiece of late Gothic architecture, built between 1483 and 1498, originally used for a silk trade and it has always been a symbol that illustrates the power and wealth of a major Mediterranean mercantile city in the 15th and 16th centuries [3], [4]. This asset was designated as a National Historic Monument in 1931 and then registered as a Cultural Asset of National Interest. UNESCO approved the inclusion of this property in the World Heritage List in 1996, based on cultural criteria: (i*) because it represents a masterpiece of human creative genius* and (iv*) because it is an outstanding example of a type of building which illustrates a significant stage in human history* [5]. Since then, it has become the most outstanding landmark of València for its citizens.

This property is located in the city of València, specifically in District 1 "Ciutat Vella", which was also designated as an urban Cultural Asset of National Interest in 1993. The opportunity to study this monument lies in the fact that a Special Protection Plan for the Historic District of the city of València was approved in February 2020 [6]. This would allow students to deepen their knowledge of this renovated heritage and the planning tool proposed by the City Council to protect the historic urban fabric, its heritage assets and adjacent buffer areas to achieve coherence and sustainability in their management.

The Lonja de Palma de Mallorca, which is currently the headquarters of the Presidency of the Balearic Islands, was chosen as a comparative case study. Built between 1420 and 1452 also for commercial purposes, it served as a typological reference for the construction of the Lonja de València [7].

The classes of the course began in February 2020, and during that month, progress was made in the presentation of the object of the study, in data collection and in the structuring of group projects. In this regard, a guided tour was carried out by the expert Dr Manuel Ramírez, restoring architect of the Lonja de València and author of the Master Plan of the latter. A 4-day study trip was organized to the city of Palma de Mallorca, with visits presented by technicians from the Balearic Government to analyse how the Lonja de Mallorca was managed. Regarding the documentation of the Lonja de València, the students started collecting and reviewing technical documents, but certain problems were detected at this stage, as key reports and documents were not available online.

It can be stated that during the first month, the course was progressing as planned. According to the schedule, until April the students had to sort the data, verify it, structure the contents, compare it with other case studies, and write a final document to present the results of this first phase of the course, all under the continuous supervision of the teaching staff. Additionally, during this period, various teachers of the course were planned to provide master classes on the technical and legal tools for heritage management, on projects carried out in the Lonja de València and on useful methodological aspects for the development of the projects.

On Saturday, March 14, 2020, the Spanish Government declared a national state of emergency due to the Covid-19 pandemic (Royal Decree 463/2020). Among the imposed measures to curtail the rapid spread of the virus were lockdown and the closure of the majority of economic activities. This legal mandate forced Spanish universities to close their doors, therefore causing an unexpected disruption of traditional on-campus instruction. At that time, it was unknown how long the educational institutions would remain closed. Eventually, it extended until the end of the academic year.

The crisis-response actions and methods of universities around the world have been based on digital transformation [8] [9]. It is not a new phenomenon, and it has been accompanying higher education institutions for years [10], [11], but the Covid-19 pandemic accelerated that process; novelties in higher education that would typically take many years to appear were quickly introduced [12].

Within the framework of the European Higher Education Area and Bologna Process, there is no specific legislation for the promotion of online education. Therefore, facing this exceptional emergency, the Ministry of Universities and the Conference of Spanish University Rectors urged universities to develop their own exceptional regulations to adapt teaching-learning from on-campus to online mode without making significant changes to the instructional organisation [13].

UPV immediately published guidelines and recommendations for students and teaching staff and created the *Virtual UPV* website [14] to provide useful and practical information on how to make the transition to an online learning environment in the exceptional context of the state of emergency. On Monday, March 16 (two days after the state of emergency was announced) the teaching-learning had to continue online. Thanks to the existing organisational infrastructure, the University was able to turn its on-campus classes into online synchronous lessons, although this migration posed logistical and technical challenges. UPV usually offers carefully planned online asynchronous learning programs, but, as noted by Hodges *et al.* [15], the online adaptation followed by many universities during this pandemic was a different experience [16], [17]. It should also be noted that online education cannot be effectively and efficiently applied in some fields and this compatibility gap is yet to be filled [11]. In the case presented in this paper, certain contents and activities of the course caused serious problems to be offered online.

Another identified challenge for teachers was their lack of pedagogical content knowledge needed for teaching online [18]. The required rapid response to act caused stress and enormous work overload, which derived from the need to quickly design new educational experiences and tasks that were not previously performed. In our case, the teachers of the course not only had to adapt the contents of the course to the online format but also had to look for alternatives to help students to cope with the extraordinary situation of the lockdown, which made it impossible to collect data *in situ*.

2 OBJECTIVES AND METHODOLOGY

First, it should be noted that this work is the result of a personal experience of a group of teachers who, as many others, in a record time had to adapt their educational model to unexpected circumstances. This was not a carefully planned teaching-learning experience, if not the result of the implementation of an effective solution on an unprecedented academic emergency.

The objectives of this paper are: (1) to describe how the course was adapted to this emergency; and (2) to analyse the challenges and opportunities that online instruction offers in the specific field of Built Heritage Management.

The methodology for carrying out this work, therefore, consisted of the analysis and assessment of the adaptations introduced in the course during the period of the lockdown. To this end, the teaching staff made an inventory of the alternative teaching-learning activities developed. In addition, a bibliographic review was conducted on similar situations that occurred in universities around the world because of the pandemic, and which have recently been published in specialized journals. The presented results come from meetings and discussions among the members of the teaching staff and from personal interviews held with the students to learn about the effectiveness of the adopted measures.

3 RESULTS: CRISIS-RESPONSE MIGRATION METHODS

To adapt the course to the online mode, the *PoliformaT* and *Microsoft Teams* tools were mainly used. *PoliformaT* is the institutional platform of the UPV for teaching-learning support, through which students and teachers can share information and communicate. It offers applications for planning activities, sharing files, giving asynchronous lessons, sending and receiving assignments, managing groups, taking online exams, publishing grades and communicating through announcements, forums or internal email. In our case, the course resources and projects deliveries were organised through this platform. In addition, it served as a database repository to share the results obtained in the first part of the course, and allowed general announcements to be broadcast quickly.

Faced with the unexpected shift from on-campus to online instruction, UPV recommended using *Microsoft Teams* through the *Office 365* Enterprise license for all the synchronous activities. *Teams* is

an online platform that enables to organize online lessons through video conferencing with a large number of people connected simultaneously, and allows to upload and share videos securely, among others. In our case, all synchronous activities were carried out through *Teams*: theoretical lessons, projects supervision, discussion sessions, and the public presentation of the projects (Table 1).

Table 1. Summary of the course activities adaptation.

ACTIVITIES	ON-CAMPUS Before lockdown	ONLINE During lockdown
Theoretical lessons	Face-to-face classes. Lectures and short practical exercises	Live streaming master classes through *Microsoft Teams*
Fieldwork and visits	*In situ* data collection	Virtual tours, audiovisual material and online resources
Conferences and visits with experts	*In situ* and face-to-face lectures	Live streaming lectures, webinars, debates, and interviews with international experts through *Microsoft Teams*
Specialized information search and collection	*In situ* search in libraries and archives, online search in digital resources and databases	Online search in digital resources and databases
Projects supervision	Face-to-face supervision in class. Specific doubts by email	Synchronous supervision through *Microsoft Teams*. Specific doubts by email
Discussion sessions	Face-to-face in class	Live streaming through *Microsoft Teams*
Projects delivery	Printed version and digital version through *PoliformaT*	Digital version through *PoliformaT*
Projects public presentation and discussion	Face-to-face in class with a screen presentation	Live streaming presentations with screen-sharing through *Microsoft Teams*
Students-Teachers communication	Face-to-face, email and general announcements through *PoliformaT*	*Microsoft Teams*, email and general announcements through *PoliformaT*
Informal communication	Face-to-face	WhatsApp group

In order to compensate for the lack of physical experience at the Lonja de València, the teaching staff was forced to find alternative methods to help the students understand all site conditions. Moreover, extra bibliographic and audiovisual resources (scientific articles, videos, documentaries, etc.) were offered. During May, when the Government started to ease restrictions, the teaching staff commissioned a UPV research group to prepare a 360º virtual tour of the Lonja of València based on panoramic photos. This interactive tool provided the students with the possibility to freely explore and visualise the interior and exterior of the building [19].

Various activities were also organized with experts in the field of heritage management, which allowed to maintain the instructional quality requirements of the Master's program. Thus, during April and May 2020, the online live streaming international seminar "Reconnecting the Public with Heritage" [20] was held, which consisted of series of conferences and discussion sessions open to the public. Experts from several countries were invited to talk about the management of heritage sites as Petra (Jordan), the Valley of the Kings (Egypt), the city of Venice (Italy), and Rovaniemi (Finland), among others. The consequences that the global pandemic was causing on the cultural tourism were also discussed with experts such as the Spanish Ambassador to UNESCO or the Director of Turespaña in Paris (France). The seminar was designed as a flip-teaching activity; thus, before each session, students were provided with various online resources (videos, websites, and short texts) to have preliminary information on each topic. After the lectures, question sessions were opened, which led to active participatory discussions on current issues, which was very useful for the learning process of the students.

On May 7 and 8, the "Workshop on Architectural Heritage Management Strategies: The Alhambra of Granada" [21] was held, presenting a practical participatory activity applied to a real case. The chosen

object of the workshop was the Alhambra of Granada, which was declared a World Heritage Site in 1984. The invited expert was Dr Pedro Salmerón Escobar, the Technical Director of the *Plan Director de la Alhambra y Generalife 2007-2020*, which is the main management tool of this heritage ensemble. The students participated in this activity through a group role-play, where each group represented one of the three agents involved in the development of a hypothetical strategic management plan for the Alhambra: (1) the public administration; (2) the business sector and tourism agents; and (3) visitors and resident associations.

In addition, the teaching staff adopted several measures in order to alleviate the effects caused by the social distancing, by encouraging collaboration and relationships among the students through the development of teamwork, and by ensuring social virtual interaction between teachers and students to assist students in their commitments, and to provide them with emotional and motivational support. To achieve that, social media applications were used; more specifically, a WhatsApp group was created as a more direct and informal method of communication. It should be noted that most students were outside their usual family environment, which made the emotional situation more delicate for many of them.

4 DISCUSSION

The challenges and opportunities that this migration from on-campus to online learning presents in the specific field of Built Heritage Management are analysed and discussed below.

4.1 Challenges

Overall, it can be noted that one of the main challenges associated with the methods of migration in response to this crisis was the requirement of compulsory modification in the viewpoints of education administrators, instructors, and learners regarding the significance of online learning [23].

Specifically, in the *Heritage Management Studio* course, the main difficulties of switching to online teaching-learning were: (1) replacing fieldwork and practical experiences, (2) virtually conducting continuous supervision and a successful group dynamic, and (3) accessing to digitized information on the public management of some relevant heritage assets.

As previously mentioned, to replace visits and practical experiences, additional materials were prepared, a virtual tour of the building under study was created and several online activities were organized with the participation of heritage management experts. The latter were very successful and have already been incorporated into the regular program of the course but it has been proved that *in situ* fieldwork experiences are not replaceable.

In order to transform the in-person dynamic of the studio into a virtual classroom, a typical schedule of one session per week was maintained, where students presented their ongoing projects through screen-sharing. These supervision sessions were conducted collectively with the entire teaching staff to motivate participation in discussions and cooperative learning. It was important to facilitate group discussion among students, keep interactive commenting, as well as be clear and concise in the critique and comments addressed to students [24]. In addition, personalized attention to students was increased via email to ensure efficient supervision of the projects (Table 1). Preliminary rehearsals of oral presentations were also conducted to help students develop communication skills. The results of this adaptation can be classified as effective, although the ideal situation remains in-person supervision.

As for the information required to carry out the projects, during the lockdown the prevailing need to have digital access to cultural heritage and data sources (archives, newspapers, libraries, cartographic materials, or museums, among others) to ensure the continuity of the research workflow, became evident. Digital heritage portals [25] and initiatives for digitizing the physical documentation of cultural institutions [26] are becoming increasingly common; however, there is still a long way to go before all documents related to the management of cultural heritage can be accessed. Two problems were detected in the case of this course and in the specific case of the Lonja de València: on the one hand, the lack of digitized documents; on the other hand, the absence of official platforms through which the access to this public information could be given. This challenge is still considered as an institutional weakness that requires to be urgently addressed, not only to resolve an emergency situation but also to ensure permanent quality information services. To cope with the lack of information, the teaching staff facilitated online interaction between students and management experts (with their prior consent), so that they could resolve existing doubts. In addition, the UPV carried out extraordinary official procedures to obtain the necessary public information that was not accessible in digital format.

4.2   Opportunities

Although this adaptation, while being quite a challenge, was not made by choice, in practice it has demonstrated some positive aspects and offers possibilities that so far have been barely explored.

First, the stimulation of self-regulated learning was observed [27], encouraging students to organize their time and schedule more efficiently, as well as to try to supervise their own learning. It should also be noted that online teaching-learning was traditionally closely associated with the asynchronous mode. With the development of live streaming platforms, it was observed that a fairly interactive and flexible online synchronous teaching-learning can be carried out. In fact, theoretical sessions, discussions, and collaborative international webinars were easily handled, which also contributed to the internationalization of these activities at a relatively affordable cost. In turn, these activities provided the opportunity to analyse the impact and consequences of the emergence of Covid-19 on cultural heritage worldwide. Since our course is a practical and applied subject on heritage management, addressing this current issue became essential to seek innovative solutions and proposals to respond to this new scenario.

Another opportunity associated with this exceptional situation was the emergence of new research topics in the field of heritage management. After the lockdown, in the "new normal" period, heritage sites faced the challenge of reopening their doors to the public under very different conditions adapted to new security restrictions. To address this issue in the course, a collaborative repository was created in *PoliformaT* to share the initiatives and recommendations regarding what international organizations such as UNESCO [28], ICOMOS [29], or ICCROM [30] and public administrations responsible for the protection of heritage published [31], [32]. This activity inspired discussion topics and very innovative projects of the students, who worked on completely new topics: quality, health, and comfort conditions in heritage visits; biosecurity protocols for heritage sites; virtual visits; digital management tools; and communication strategies for reconnecting the public to the heritage.

Finally, it should be noted that the most favourable opportunity provided by the adaptation to online learning was that it allowed students to comply with the academic calendar with neither losing an academic year nor bearing economic and emotional expenses that this situation could have entailed. It should also be noted that the *Heritage Management Studio* course has the highest number of credits in the entire Master's program, and the failure to pass it could be a fatal outcome in a student's academic career.

5   CONCLUSIONS

This emergency required a lot of effort on the part of teachers and students and demonstrated the adaptability, flexibility, and resilience of the education system of the UPV.

Evidently, digital technology played a major role in cushioning the impact of this pandemic on educational activities. The acceptance and adaptation to this situation, as well as the teaching-learning experience gained from this emergency, will definitely lead to a future with more and better technological teaching-learning tools. It is still necessary to improve the online learning model in order to reduce the workload on the instructors and to overcome its main challenges, especially in fields that require complex solutions such as the ones presented in this paper.

The rich prior experience of students in digital media facilitated their immediate adaptation to this drastic change from on-campus to online instruction. Teachers had to strive and be creative to adapt teaching-learning activities and to look for alternative experiences that would maintain the quality of the academic program. Some of the activities proved to be effective and successful; therefore, they have been permanently incorporated in the regular program. However, the design of interactive synchronous virtual experiences needs to be improved for the sake of enhancing the alternatives to *in situ* fieldwork.

Experience shows that many improvements still need to be made in terms of digitization and accessibility of public information related to the management and conservation of cultural assets. The pandemic has highlighted the importance of digital access to culture and heritage, opening a new claim in cultural management.

We believe, it was important to quickly identify and analyse the teaching-learning challenges of the migration, as well as to implement the most viable solutions to switch to the online mode. Despite the exceptional nature of the situation, this allowed achieving the objectives set out in the course while

maintaining the quality requirements of the program. This was confirmed by the results of the teaching assessment surveys and by the opinions expressed in informal interviews conducted with students.

ACKNOWLEDGEMENTS

REFERENCES

[1]   UNESCO, *Managing Cultural World Heritage. Resource Manual.* Paris: UNESCO, ICCROM, ICOMOS and UICN, 2013. Retrieved from https://whc.unesco.org/document/125839 [accessed: 11-01-2021].

[2]   S. Kuhn, "Learning from the architecture studio: Implications for project-based pedagogy", *International Journal of Engineering Education*, vol. 17, no. 4/5, pp. 349-352, 2001.

[3]   J. Benlloch and M. Ramírez, *Lonja de Valencia, Lonja de la humanidad.* València: Ajuntament de València, 2006.

[4]   J. Bérchez, M. Gómez-Ferrer and M. Gallén, *Lonja de Valencia: Patrimonio de la Humanidad.* València: Ajuntament de València, Delegación de Cultura, 2013.

[5]   UNESCO, World Heritage List, *La Lonja de la Seda de Valencia*, 1996. Retrieved from https://whc.unesco.org/en/list/782 [accessed: 11-01-2021].

[6]   Ayuntamiento de València, *Plan Especial de Protección de Ciutat Vella*, 2020. Retrieved from http://www.valencia.es/ayuntamiento/urbanismo2.nsf/vTramitacionWeb/7183D017A5DA4E1EC12 58512002F6265 [accessed: 11-01-2021].

[7]   A. Zaragozá, "Arquitecturas del Gótico Mediterráneo", in *Una arquitectura del gótico mediterráneo* (E. Mira and A. Zaragozá, eds.)*,* pp. 105-196. València: Generalitat Valenciana. Conselleria de Cultura i Educació. Subsecretaria de Promoció Cultural, 2003.

[8]   O.B. Adedoyin and E. Soykan, "Covid-19 pandemic and online learning: the challenges and opportunities", *Interactive Learning Environments*, 2020. doi: https://doi.org/10.1080/10494820.2020.1813180

[9]   C. Carrillo and M.A. Flores, "COVID-19 and teacher education: a literature review of online teaching and learning practices", *European Journal of Teacher Education*, vol. 43, no. 4, pp. 466-487, 2020. doi: 10.1080/02619768.2020.1821184

[10]   M. Kopp, O. Gröblinger and S. Adams, S. (2019). Five common assumptions that prevent digital transformation at higher education institutions. *INTED2019 Proceedings. 13th International Technology, Education and Development Conference*, pp. 1448-1457, 2019. doi: https://doi.org/10.21125/inted.2019

[11]   P. Leszczyński, A. Charuta, B. Łaziuk, R. Gałązkowski, A. Wejnarski, M. Roszak and B. Kołodziejczak, "Multimedia and interactivity in distance learning of resuscitation guidelines: A randomised controlled trial", *Interactive Learning Environments*, vol. 26, no. 2, pp. 151–162, 2018. doi: https://doi.org/10.1080/10494820.2017.1337035

[12]   W. Strielkowski, "COVID-19 pandemic and the digital revolution in academia and higher education", *Preprints*, 2020040290, 2020. doi: https://doi.org/10.20944/preprints202004.0290.v1

[13]   Conferencia de Rectores de las Universidades Españolas, *Informe sobre Procedimientos de Evaluación no Presencial. Estudio del Impacto de su Implantación en las Universidades Españolas y Recomendaciones*, 2020. Retrieved from https://tic.crue.org/wp-content/ uploads/2020/05/Informe-procedimientos-evaluaci%C3%B3n-no-presencial-CRUE-16-04-2020.pdf [accessed: 11-01-2021].

[14]   Universitat Politècnica de València, *Docencia virtual en la UPV durante la crisis del COVID-19*, 2020. Retrieved from https://virtual.blogs.upv.es [accessed: 11-01-2021].

[15] C. Hodges, S. Moore, B. Lockee, T. Trust and A. Bond, The difference between emergency remote teaching and online learning, *EDUCAUSE Review,* 27 March, 2020. Retrieved from https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning [accessed: 13-12-2020].

[16] A. Bozkurt and R.C. Sharma, "Emergency remote teaching in a time of global crisis due to Corona Virus pandemic", *Asian Journal of Distance Education*, vol. 15, no. 1, pp. i-iv, 2020. Retrieved from http://www.asianjde.org/ojs/index.php/AsianJDE/article/view/447

[17] D. Vlachopoulos, "COVID-19: Threat or opportunity for online education?", *Higher Learning Research Communications*, vol. 10, no. 1, 2020. doi: https://doi.org/10.18870/hlrc.v10i1.1179

[18] C. Rapanta, L. Botturi, P. Goodyear, L. Guàrdia and M. Koole, "Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity", *Postdigital Science and Education*, no. 3, pp. 923-945, 2020. doi: https://doi.org/10.1007/s42438-020-00155-y

[19] J.M. Maicas and M.J. Viñals, "Design of a virtual tour for the enhancement of Llirias's architectural and urban heritage and its surroundings", *Virtual Archaeology Review*, vol. 8, no. 17, pp. 42-48, 2017. doi: https://doi.org/10.4995/var.2017.5845

[20] Universitat Politècnica de València, Máster Universitario en Conservación del Patrimonio Arquitectónico, *Seminario internacional "Reconectando al público con el patrimonio"*, 2020. Retrieved from http://www.upv.es/titulaciones/MUCPA/noticia_1111001c.html [accessed: 12-01-2021].

[21] Universitat Politècnica de València, Máster Universitario en Conservación del Patrimonio Arquitectónico, *Seminario "Estrategias de gestión del patrimonio arquitectónico: la Alhambra de Granada"*, 2020. Retrieved from http://www.upv.es/titulaciones/MUCPA/noticia_1112701c.html [accessed: 12-01-2021].

[22] Patronato de la Alhambra y Generalife, *Plan Director de la Alhambra y el Generalife 2007-2020*, 2007. Retrieved from https://www.alhambra-patronato.es/patronato/informacion-institucional/plan-director-2007-2020 [accessed: 11-01-2021].

[23] R. Ribeiro, How University Faculty Embraced the Remote Learning Shift. *EdTech Magazine*, 14 April, 2020. Retrieved from https://edtechmagazine.com/higher/article/2020/04/how-university-faculty-embraced-remote-learning-shift [accessed: 07-01-2021].

[24] M. De Geus, Tips for Design Studio Teaching in the Age of COVID-19, *Archdaily*, 3 April 2020. Retrieved from https://www.archdaily.com/936580/tips-for-design-studio-teaching-in-the-age-of-covid-19 [accessed: 09-01-2021].

[25] J.G. Jiménez, M. García, J. Revelles and F.J. Melero, "Digitalización 3D y Difusión en Web del Patrimonio de las Universidades Andaluzas mediante X3D Y WebGL", *Virtual Archaeology Review*, vol. 3, no. 7, pp. 55-59, 2012. doi: https://doi.org/10.4995/var.2012.4386

[26] M. Serrano Fernández, "La digitalización del patrimonio cultual. La Directiva sobre derechos de autor en el mercado único digital", *Indret: Revista para el Análisis del Derecho*, no. 3, pp. 61-111, 2020. Retrieved from https://indret.com/la-digitalizacion-del-patrimonio-cultural [accessed: 11-01-2021].

[27] M. Boekaerts, "Self-regulated learning: Where we are today", *International Journal of Educational Research*, vol. 31, no. 6, pp. 445-457, 1999. doi: https://doi.org/10.1016/S0883-0355(99)00014-2

[28] UNESCO, *Covid-19 Response*, 2020. Retrieved from https://en.unesco.org/covid19 [accessed: 9-01-2021].

[29] ICOMOS ESPAÑA, Consejo Internacional de Monumentos y Sitios, *El patrimonio cultural y los museos frente a la crisis del COVID-19*, 2020. Retrieved from https://icomos.es/covid-19 [accessed: 9-01-2021].

[30] ICCROM, International Centre for the Study of the Preservation and Restoration of Cultural Property*, Heritage in Times of COVID*, 2020. Retrieved from https://www.iccrom.org/heritage-times-covid [accessed: 9-01-2021].

[31] Ministerio de Cultura y Deporte de España and Instituto del Patrimonio Cultural de España, *Pautas para la gestión, conservación y disfrute público del patrimonio cultural en la desescalada de la crisis sanitaria Covid-19*, 2020. Retrieved from https://ipce.culturaydeporte.gob.es/ noticias/2020/2020-06-01-patrimonio-y-desescalada.html [accessed: 11-01-2021].

[32] Generalitat Valenciana, *Guía para el plan de desescalada en museos y bienes culturales. Covid-19*. Conselleria de Educación, Cultura y Deporte de la Comunidad Valenciana, 2020. Retrieved from http://www.ceice.gva.es/es/web/patrimonio-cultural-y-museos [accessed: 11-01-2021].