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The Journal of Academic Librarianship

journal homepage: www.elsevier.com/locate/jacalib

Case studies

Effects of Covid-19 on the Online Library and Information Science Degree at the University of León (Spain)

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ARTICLE INFO

Keywords:

Blended education
Information and documentation science
Multimedia tools
Online teaching
University of León (Spain)
Virtual learning environments

ABSTRACT

The Degree in Library Science and Documentation of the University of León started during the 1990–1991 academic year. This first curriculum suffered from a strong presence of subjects from the humanities, with a low fraction of experimental work in many subjects because of its inclusion within the Faculty of Philosophy and Letters. The first years attracted large numbers of students. However, the subsequent decrease in the number of students pursuing the degree drove us to initiate a change toward blended and online modalities.

The Librarianship and Documentation Area of the University of León (ULE) already has a long history in blended teaching, starting with the Degree in Librarianship and Documentation, which has used the platform [aul@unileon](mailto:aul@unileon.es) since the 2006–2007 academic year; the Degree of Information and Documentation has used the blended modality since the 2010–2011 academic year, and it has been offered in the distance learning modality since the 2014–2015 academic year.

These new technologies have been fully introduced into university education and have facilitated the teaching–learning process through the use of interactive programs via the Internet.

The main objective of this column is to determine and study the kind of multimedia tools used by professors of the Bachelor of Information and Documentation at the University of León during the teaching–learning process and in virtual teaching before the COVID-19 pandemic, as well as to report which new tools were introduced by the university for this reason. We study the student–teacher and student–student interactions to help promote communication and participatory learning through chats, forums, email, hangouts, Skype, Meet, videoconferences, etc.

To carry out this study, two types of methodology were applied: satisfaction surveys implemented by the Quality Office of the ULE to determine the degree of satisfaction of students and teachers, and a study of annual reports.

Introduction

Librarianship and Documentation began to be taught in León during the 1990–1991 academic year (Royal Decree of 30 August 1991, BOE of 10 October 1991). The teachers' offices and classrooms were included in the Faculty of Philosophy and Letters. This start was a time of low financial investment in such new studies in Spain, coinciding with the preparation of Expo 92 (Seville) and the 1992 Olympics (Barcelona). This situation led to the implementation of the new degree without a budget. The best way to start, at that time, was thus to approach

professors of degrees in the Faculty of Philosophy and Letters. Despite this situation, the number of new students reached 100. In 1997, the degree was funded through a budget consistent with the new study plan. However, the number of students began to decline gradually (Rodríguez López & Rodríguez Bravo, 2000). Attempts to make it easier for future students to pursue studies in higher education without leaving their jobs led to the introduction of the blended learning modality. This modality was pioneered at the national level by the University of León, where it was implemented for the Diploma in Librarianship and Documentation as early as the 2006–2007 academic year, in parallel with in-person

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<https://doi.org/10.1016/j.acalib.2022.102526>

Received 4 April 2022; Accepted 5 April 2022

Available online 12 April 2022

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teaching of these studies. The number of students studying in the blended modality was limited to 30, due to the difficulty faced by teachers in combining the delivery of classroom-based and hybrid teaching modalities. The University of León, together with the private University of Vic, have been pioneers in blended teaching of degrees in the field of Information and Documentation. The student pool was fed by students from Castilla and León and, mainly, from Asturias, Cantabria, Galicia, the Basque Country, La Rioja, and Navarre (Rodríguez Bravo & Morán Suárez, 2008).

To start teaching in the blended modality, the ULe developed the [aul@unileon](mailto:aul@unileon.es) platform, which was soon replaced by the Moodle Platform (<https://agora.unileon.es/>) from the 2010–2011 academic year. Throughout these years, the curriculum was implemented and developed in a satisfactory form, applying all the measures necessary to provide an adequate training trajectory for students to acquire the competences required to become professionals in the target areas of the degree (Gallego Lorenzo & Martín Vega, 2017).

The profile of those studying the Degree in Information and Documentation is a university student over the age of 29 years. This guarantees a high vocational motivation that translates into the choice of these studies as the first option, resulting in a high level of satisfaction and a low dropout rate.

The study of Information and Documentation has undergone many changes from its origins to its adaptation to the European Higher Education Area (EHEA). The EHEA changed how knowledge is transmitted to students, meaning that teachers had to change how they taught classes, incorporating various new teaching techniques. This drove the use of innovative methodologies and the integration of information and communication technology (ICT) into these new training processes.

The advent of the Bologna Process motivated interest in new teaching methods in Spain. Spanish universities that taught the Diploma in Library and Documentation and the Bachelor of Documentation degrees thus prepared the *White Book of the Bachelor's Degree in Information and Documentation* (*Libro blanco*, 2004) within the framework of a call for tenders from the European Convergence Program of the National Agency for Quality Assessment and Accreditation (ANECA). The *White Book* for these studies was prepared under the leadership of the University of Barcelona, and the University of León sent professors to the various periodic meetings held in Barcelona. These meetings resulted in the new name for these studies: Information and Documentation, which was adopted by the ULe. This name change, as well as the economic crisis that afflicted the country from 2008, resulted in a continuous decrease in the number of students. One approach adopted to make these studies more attractive was the distance modality, offered from the 2014–2015 academic year. This innovation was once again pioneering in the Autonomous Community of Castilla and León and endows the Degree in Information and Documentation at the University of León with a distinctive character. The fully remote modality was introduced on 30 March 2014.

However, the Degree in Information and Documentation is not taught via the distance modality in most of Spain. Indeed, only two universities, the University of Extremadura and the University Oberta de Catalunya, offer the degree in Information and Documentation.

The potential of such virtual learning environments has improved continually over the years. In the 2013–2014 academic year, the University of León acquired and integrated the Audio and Video over IP (AVIP) videoconference management module originally developed by the UNED.

The ULe began to develop the regulatory infrastructure for the change of modality, drawing up the regulations for teaching official qualifications of the University of León via the online modality (*Reglamento para la docencia en titulaciones oficiales de la Universidad de León en modalidad a distancia*, University General Council agreement of 17 June 2014) and, almost one year later, the plan for the implementation of the online training system (University General Council agreement of 28 April 2015). In the annual plans for academic capacity, blended learning

and online teaching are allocated half of the teaching staff. This has slowed interest from other institutions of the ULe in adopting this modality. Despite all these advances, the academic plan for the 2020–2021 academic year still establishes that “Degrees that are taught simultaneously on the one hand in blended modality and on the other online: The blended modality will be computed in accordance with the provisions above for the blended modality of any other degree, while the subjects taught in online modality will be computed in accordance with Article 9.1 of the Regulation for Teaching in Official Qualifications of the ULe in Distance Mode (*Reglamento para la Docencia en Titulaciones Oficiales de la ULE en Modalidad a Distancia*, University General Council agreement of 3 March 2016): Regarding the total number of places offered, the load will be the number of credits for the subject, otherwise proportionally. A division into groups is not contemplated” (Plan for allocation of teaching and research staff and labor, PDA 2020–2021; *Plan de dedicación académica del personal docente e investigador funcionario y laboral*, PDA 2020–2021, University General Council agreement of 17 December 2019).

Methodology

For this column, we reviewed the regulations in force, collated under the following headings: institutional structure of the ULe; regulations for research centers, departments, and institutes; teaching; teaching and research staff; students and scholars. This regulation is available on the ULe's website.¹

Secondly, we studied the information available on the website of the Evaluation and Quality Office, in its section about monitoring support.² On this website, we consulted the annual reports on verification and accreditation prepared by the Degree Commission and the verification and accreditation reports issued by the ACSUCyL, broken down by type.

For the section on improving teacher training, we consulted the reports of the Teacher Training School, from 2011 to 2019, and the course calendars. All this information is available on its website.³

Finally, we consulted all the references listed at the end of this work.

Results

New regulations for online teaching

The first regulation for teaching of official degrees of the University of León in distance mode (*Reglamento para la docencia en titulaciones oficiales de la Universidad de León en modalidad a distancia*, 2014) was subject to various modifications through two new University General Council agreements (28 April 2015 and 3 March 2016).

The next general regulation, the Adaptation of the School Calendar to Distance Training (*Adaptación del Calendario Escolar a la Formación a Distancia*, University General Council agreement of 17 December 2019), was enacted on 2019, albeit only including the fifth article from the modified regulation from 2016.

However, in less than half a year, two new rules were then published: the general criteria for adapting face-to-face teaching at the University of León to the non-face-to-face format (*Criterios generales para la adaptación de la docencia presencial de la Universidad de León al formato no presencial*, University General Council agreement of 8 May 2020) and the ULe action plan for adapting the teaching of the academic year 2020–2021 to health requirements (*Plan de Actuación ULE para la adaptación de la docencia del Curso Académico 2020/21 a las exigencias sanitarias*, University General Council agreement of 10 September

¹ <https://www.unileon.es/universidad/consejo-de-direccion/secretaria-general/normativa-de-regimen-interno>

² <https://seguimiento.calidad.unileon.es>

³ <https://servicios.unileon.es/formacion-pdi/informacion-general/memorias-de-otros-anos/>

2020). The implementation of this plan involved a reinforced digitization strategy, improvement to the computer equipment and telematic networks of the university, teacher training in the use of digital communication, and help from the university administration to achieve adequate connectivity for students. One must not forget that efforts to increase face-to-face education of studies has led to budget increases that have benefited us.

Support for improving teacher training

From the start, professors in the Library and Information Technology Area as well as all other professors involved in teaching the Degree on Information and Documentation had to acquire the skills required to offer online teaching. First, the area requested such training on its own initiative. Thus, Professor Bonifacio Martín Galán, from the University Carlos III of Madrid, carried out a teaching stay during the second quarter of the 2010–2011 academic year. During those years, Prof. Angela Diez Diez of the ULe also taught courses on the management of teaching platforms.

Starting from 2014, the Teacher Training School of the University of León also offered a series of courses dealing with: The use of Moodle/AVIP; Resources for online teaching: shared documents, forms, exams, and conference calls; and Digital video editing and video tutorial development. This training was continued over time. As of 2018, the Teacher Training School offered a series of courses on ICT to support teaching, where teachers who teach online in the Degree of Information and Documentation have priority. These courses allow teachers to obtain the Online Teaching Program certificate (30h), for which they must take three general courses and at least three of the six specific workshops:

- General courses (mandatory): Theory and practice of virtual assessment (3 h); Organization of digital content (3 h); the teacher–tutor dynamic during online teaching (3 h)
- Specific workshops (choose at least three): Resources and web tools (6 h); Virtual assessment instruments and techniques (6 h); Recording, editing, and publication of classes (6 h); Mini-videos for learning: types, preparation, and uses in university teaching (6 h); Creativity and design of didactic materials (6 h); Google tools for cooperative work (6 h); Web tools for videoconferencing (6 h)

Since the second semester of last year (2019–2020), this offering has increased. Indeed, due to the COVID-19 pandemic, all professors had to temporarily provide teaching online. To support this task, the Teacher Training School presented a Training Plan to Support Online Teaching to complement their General Training Plan, including:

- Webinars and other documentation to support online teaching.⁴
- Basic Moodle course, 13 April 2020
- Basic video recording, 15 April 2020
- Recommendations regarding virtual evaluation at the university, 15 April 2020
- How to transfer a PowerPoint presentation to video, 17 April 2020
- Recommendations regarding online assessment at universities in Castilla and León, 17 April 2020
- Videoconferencing tools 1, 19 April 2020
- AVIP web conference, 22 April 2020
- Questionnaires using Moodle, 23 April 2020
- Questionnaires using Moodle, 24 April 2020
- How to prepare and implement exams with Moodle questionnaires, 28 April 2020
- Moodle qualifications, part 1, 21 May 2020
- Moodle qualifications, part 2, 22 May 2020
- Microlearning: make your educational “pills,” 26 May 2020

- Microlearning: make your educational “pills,” 22 September 2020
 - The possibilities of Moodle for online teaching, 11 September 2020
 - Digital video editing for the production of teaching materials, 16 September 2020
 - Moodle tools: lessons, 13 October 2020
 - Moodle tools: tasks and workshops, 19 October 2020
 - Moodle tools, messaging, communication, and collaboration, 21 October 2020
 - Digital tools for the creation of teaching materials, 22 October 2020
- The calendar for November and December was even more comprehensive, as shown in Figs. 1 and 2.

Finally, to complement these actions, a resource called “Resources for online teaching” was created in the external Moodle “Ariadna.” It can be accessed by any professor at the ULe. This provides, on the one hand, all the recordings of each of the seminars and workshops and, on the other, various materials, guides, and useful tutorials for teaching and/or virtual evaluation.⁵

ULe Online

A significant milestone was the creation of ULe Online (Universidad de León online) in December 2015. This portal was created to provide separate support for online studies. Initially, two master's degrees were also incorporated, and three other master's and a degree course are now taught via this modality. This operates as an independent portal to access information on all aspects of academic life, providing information to future students and accompanying them until the end of their undergraduate studies. Administrative tasks can also be performed via this portal (Fig. 3).

The increase in the number of students on the Degree in Information and Documentation

The Degree in Information and Documentation, in both modalities, viz. blended and online learning, is evolving according to plan. The objectives define a generalist, professional, and academic orientation for the degree to provide the general and specific competences that each student must obtain to satisfy the requirements of the degree.

The number of students has grown in a very positive fashion following the introduction of the online teaching modality.

Starting from the 14 students enrolled in the 2013–2014 academic year, still with a single modality, enrollment remained almost unchanged, until 32 new students enrolled in the 2017–2018 academic year, in both modalities. This increase is observed in the tables of students by academic year, where the first figure corresponds to the online mode and the second to the blended mode.⁶ During the 2017–2018 academic year, the number of students asking to undertake the bachelor's degree increased significantly, covering the number of places offered in the online mode (24 out of a total of 30 preregistrations), while in the blended mode, 4 students were new entrants and 12 corresponded to the adaptation course (stopped that year). In addition, 100% of those enrolled chose this degree as their first option. These very favorable results would suggest an increase in the number of places available on this degree course to 30 for online students while reducing the number of places in the blended mode from 25 to 20 in total. The viability plan implemented during the 2016–2017 academic year with the aim of increasing the number of students reached its objective during the 2017–2018 academic year, with the number of students in the online mode increasing from 18 to 24 students.

Although there was already a clear trend toward an increase in the number of students in the online compared with the blended mode, the

⁵ <https://ariadna.unileon.es/course/view.php?id=784>

⁶ https://seguimiento.calidad.unileon.es/descargas/IndicadoresSeg2020-2021_0417-115-4-16-2020-11-09-18-39-14.pdf

⁴ <https://servicios.unileon.es/formacion-pdi/>



PROGRAMA DE FORMACIÓN DEL PROFESORADO

NOVIEMBRE 2020

LUNES	MARTES	MIÉRCOLES	JUEVES	VIERNES
2	3 16:00-17:00 Herramientas de evaluación en Moodle	4 17:00-18:00 Planificación y diseño de una asignatura online	5 11:00-14:00 Estrategias para aumentar la visibilidad e impacto de la producción científica	6 16:00-17:00 Herramientas de evaluación en Moodle
9 16:00-19:00 Herramientas de Moodle: consultas, encuestas y cuestionarios	10 16:30-19:30 Introducción a los análisis de mediación y moderación	11 11:00-14:00 Herramientas de Moodle: el libro de calificaciones, configuración de calificaciones 17:00-18:00 Planificación y diseño de una asignatura online	12 17:00-19:00 Herramientas para la creación de contenidos	13 17:00-18:30 Organización de contenidos (Programa enseñanza online)
16 17:00-18:30 Organización de contenidos (Programa enseñanza online)	17 16:00-17:00 Introducción a las rúbricas con Moodle	18 17:00-18:00 Evaluación del proceso de enseñanza-aprendizaje online	19 17:00-19:00 Herramientas para compartir y colaborar	20 16:00-17:00 Introducción a las rúbricas con Moodle
23	24	25 17:00-18:00 Evaluación del proceso de enseñanza-aprendizaje online	26 17:00-19:00 Herramientas de gamificación	27
30				

Fig. 1. November course calendar, Teacher Training School, ULe. <https://servicios.unileon.es/formacion-pdi/CALENDARIO-DE-CURSOS-SEPT-DICIEMBRE-2020.pdf>.



PROGRAMA DE FORMACIÓN DEL PROFESORADO

DICIEMBRE 2020

LUNES	MARTES	MIÉRCOLES	JUEVES	VIERNES
	1	2 16:00-17:00 Introducción a la evaluación virtual (o mixta): teoría y práctica (Programa enseñanza online)	3	4 16:00-17:00 Introducción a la evaluación virtual (o mixta): teoría y práctica (Programa enseñanza online)
7	8	9 16:00-19:00 Herramientas web para videoconferencias (Programa enseñanza online) Del 9 al 18 de diciembre: Creatividad y diseño de materiales didácticos (Programa enseñanza online)	10 17:00-19:00 Herramientas de curación de contenidos	11
14 16:30-19:30 Diseño de Proyectos de Innovación Docente en la universidad (Programa de Formación para la Innovación Docente)	15	16	17	18
21	22	23	24	25
28	29	30	31	

Fig. 2. December course calendar, Teacher Training School, ULe. <https://servicios.unileon.es/formacion-pdi/CALENDARIO-DE-CURSOS-SEPT-DICIEMBRE-2020.pdf>.

numbers for the current academic year 2020–2021 indicate a considerable increase in students due to the impact of COVID-19, reaching 65 students enrolled.

Changes in teaching and evaluation

The greatest change regarding teaching and evaluation occurred

with the publication of the general criteria for the adaptation of face-to-face teaching at the University of León to the non-face-to-face format (University General Council agreement of 8 May 2020) regarding the use of the following tools:

- Synchronous online teaching tools (videoconferences):
 - AVIP (as indicated above, available via and integrated into the Moodle of the ULe)

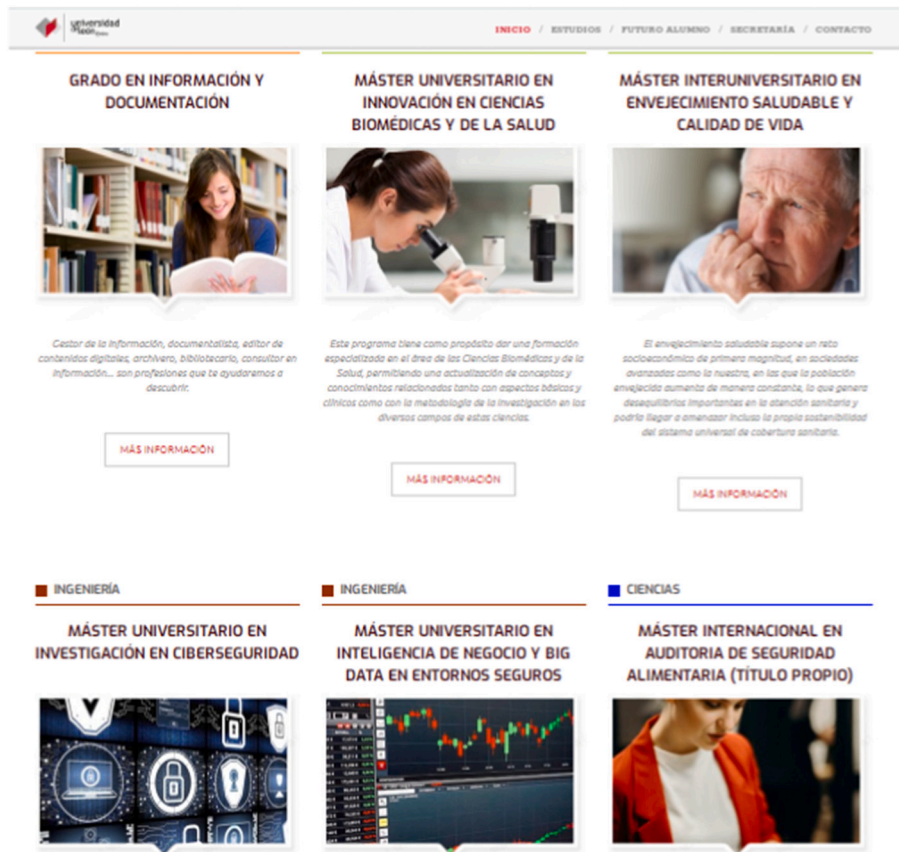


Fig. 3. ULE Online portal. <http://online.unileon.es/>.

- Google Meet
- Microsoft Teams
- Skype, Google Hangouts, Discord, GoToMeeting
- Tools for creating videos (deferred)
- Creation of presentations that include video or audio narrating the content, with PowerPoint
 - Other explanation videos on YouTube, own or others, including the link on the Moodle platform
 - Various programs/websites to help create audiovisual material, such as [screencast-o-matic.com](https://www.screencast-o-matic.com) for screen captures
 - The ULE has a recording studio that can be used to prepare materials in video format

Although many of these tools had already been used by professors of the Degree in Information and Documentation, the help provided for their use was increased

Regarding the evaluation of students, until the 2019–2020 academic year, it was planned to carry out exams in the face-to-face mode at academic venues according to an agreement implemented since the 2014–2015 academic year. Since that course, exams could be sat at the University of León or at the academic headquarters of the Distance University of Madrid (UDIMA), with which a collaboration agreement was signed for this purpose. It had 18 headquarters distributed in most of the autonomous communities in Spain: Alicante, Aranda de Duero (Burgos), Barcelona, Bilbao, Collado Villalba (UDIMA, Madrid), Córdoba, La Coruña, Las Palmas de Gran Canaria, Madrid (Centro de Estudios Financieros (CEF), Málaga, Mérida, Oviedo, Palma de Mallorca, Santa Cruz de Tenerife, Seville, Valencia, Vigo, and Zaragoza.

For the current, 2020–2021 academic year, distance exams with invigilating tools and the Smowl program have already been planned. A successful result will further support the option of eliminating the period between exam sessions. Since the modification of the regulations for

teaching official qualifications of the University of León in the distance modality, in 2016, a period of seven days was established between the first and second exam sessions. In the current course, it has finally been possible to set the exam sessions with two weeks of separation (*Reglamento para la docencia en titulaciones oficiales de la Universidad de León en modalidad a distancia*, University General Council agreement of 3 March 2016, article 5). Exams are still held on weekends, to make it easier for students to sit them without interrupting their work schedule. The general criteria for the adaptation of face-to-face teaching at the University of León to the non-face-to-face format (University General Council agreement of 8 May 2020) establishes the possibility of evaluating students in the following ways:

- Synchronous tests: all students connected at the same time while performing the following activities:
 - Questionnaires with groups of students
 - Oral defense by videoconference
 - Moodle questionnaires, controlled by video through another device
- Asynchronous tests (recommended): each student carries out the activities in a time frame proposed by the professor
 - Deliverable tasks
 - Forum discussions
 - Evaluation with elements external to the Moodle virtual campus, such as Microsoft Teams
 - Evaluation questionnaires
 - Qualifier integrated and downloadable to Excel

Conclusions

The success of the Degree in Information and Documentation at the University of León has evolved through the efforts of its teaching staff. The initially tepid response of the ULE has changed as its success has

been observed. The improvements required for the adequate evolution of online learning have been implemented incrementally. However, 2019–2020 saw a total acceleration. It has been seen that the university community must be ready for this approach to teaching and learning. In this regard, there has been an exponential growth in the development of regulations regarding online teaching.

However, the Degree in Information and Documentation has also benefited from new resources for training on handling of new tools, and barriers have been removed.

The *Yo Trabajo en Casa* (Work from Home) space has been created, offering a series of facilities.⁷ Among these, one should highlight the work of the ULE Library in making a wide catalog of services available to the university community, including its web portal called *La biblioteca ULE desde casa* (The ULE library from home),⁸ which includes a collection of resources and services offered by the library to the whole academic community to enable access from home, and the Resource Portal for Online Teaching, which includes recordings of webinars, tutorials, and guides on the use of different digital tools, etc.

Despite all these improvements, the administration of ULE still places a higher value and level of prestige on face-to-face teaching, as opposed to online modalities, and face-to-face is still the most preferred method of course delivery. Continuing work is needed in order to fully realize

the potential of online delivery which the COVID-19 pandemic brought to the forefront.

Data availability

Data will be made available on request.

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⁷ *Yo trabajo en casa*. <https://www.unileon.es/yo-trabajo-en-casa>

⁸ *La biblioteca ULE desde casa*. <https://sites.google.com/unileon.es/recursosonline/página-principal>