Instructional Methods and Hybrid Learning in Preservice Teacher Education—Case Studies in Portugal and Spain

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The preservice teacher education assumes a predominant role in the quality of the educational process that must be assumed in public education policies, noting the importance of reflection on a variety of aspects, including the curriculum, teaching and learning methods, and pedagogical practices.
To this end, this article aims to: i) present and compare the curriculum and study plans of two preservice teacher education programs in Portugal and Spain; ii) study the instructional methods used and hybrid learning format in these programs in pandemic time; and iii) analyze how their pedagogical practices are developed in post-pandemic time, particularly about the use of digital technologies and online education. As result, it is intended to obtain a characterization of the Masters of access to the teaching profession and analyze the way their curricula and instructional methods are developed. We also intend to draw conclusions about the effects of the Covid-19 pandemic on pedagogical practices, namely regarding how technologies can enable motivation, facilitate learning, and have a positive influence on pedagogical practices.

Keywords: instructional methods, hybrid learning, preservice teacher education, secondary education, higher education

INTRODUCTION

In higher education, the quality of teaching practices in preservice teacher education is of particular importance, as these teachers who teach to teach will be an example for future teachers. To this sense, teacher educators need to understand the way multiple elements connect and interact in the classroom, in practice, and dynamic relationship between teaching and learning (Hordvik et al., 2020).

How teachers take ownership and manage the curriculum, the instructional methods they use, and according to Kaynardağ (2019), the consequent pedagogical practices, influence the quality of the teaching process and learning.

On the other hand, online teaching experience during the Covid-19 pandemic brought new challenges related to instructional methods with hybrid learning models in most countries around the world. Regarding possible education response, the following stand out: the need to maintain frequent communication among students to foster mutual learning and well-being, re-prioritize curriculum goals, innovate in teaching methods, and ensure devices and connectivity to students. It is critical to provide teachers with access to

resources and online platforms and promote teacher's professional development (OECD, 2020a). Thus, it appears the importance of ensuring that students develop critical skills, manage time effectively, skills to learn online and become self-directed learners, and engage in group learning activities, with a robust student support technology service (COL, 2020).

Pedagogical practices, especially during the Covid-19 pandemic, have undergone significant changes with the use of online teaching, with the necessary adaptations to the curricula and how they learn and teach. We cannot go back to the world as it was before, stressing the relevance of understanding education as a common good, considering the right to education, the value of the teaching profession, and teacher collaboration and availability of technologies to students and teachers (UNESCO, 2020).

This article presents a literature review on instructional methods and hybrid learning, illustrated with two case studies from the Masters of Teacher education in Portugal and Spain. On these are compared the programs and curricula, and analyzed the instructional methods, hybrid learning and pedagogical practices in pandemic and post-pandemic time, particularly about the use of technologies digital and online education.

THEORETICAL BACKGROUND

The Covid-19 pandemic revealed the need to rethink education, teaching models, instructional methods, and the pedagogical integration of digital technologies.

After the emergency remote teaching, it is urgent to define ways for the school of the future regarding these aspects, assuming that it will be important for teachers to take advantage of the lessons that the pandemic allowed them, as well as the combination of distance and face-to-face teaching in hybrid learning models.

The adaptation of students and teachers to emergency remote teaching and the use of instructional methods, in different countries and even within them, was very variable and dependent on several conditions, including economic and social status or the pedagogical and technological skills of teachers and students. In Portugal, a collective movement of teachers' self-mobilization through social networks, which involved thousands of teachers with the exchange of experiences and mutual help, stood out (Figueiredo, 2021). Equally relevant is the need to prepare pre-service teachers for online interaction and for critical reflection (Mumford, & Dikilitaş, 2020).

According to a study of 2718 students from different Portuguese higher education institutions, personal and contextual factors explained students' positive or negative adaptation to online teaching and learning. The main factors identified were institutional and pedagogical responses, individual self-regulatory and socioemotional skills, and adequate resources (Flores et al., 2021).

In this study, students who had previous experience of online teaching reveal a more positive student adaptation to the closure of higher education institutions and mentioned they would prefer a hybrid format. Students without experience considered that online teaching and learning was more difficult, they have difficulties in concentrating and showing fear/anxiety, tiredness and stress. Regarding students' perceptions about online assessment, the conclusion was that remote assessment was seen as more unfair and more difficult than face-to-face, especially when conducted asynchronous. An investment in teachers and students' preparation for a more successful use of online teaching and learning environments is also suggested.

In Spain, it was applied to 265 students from the University of Alicante, enrolled in various hybrid and distance education courses, the Distance Education Learning Environments Survey, in a study of Fernández-Pascual et al. (2015), based on the original English-language version of the instrument.

The results obtained highlighted student isolation as weakness of distance education, considering that students in blended (hybrid) learning environments with some face-to-face contact allows greater collaboration and cooperation among themselves. It is desirable to incorporate new tools that facilitate interaction between students in virtual teaching and learning and design virtual learning environments taking into account the instructor support, student interaction and collaboration, personal relevance and autonomy.

Hybrid education, when carefully planned blend of both traditional instruction and online learning activities, flexible and adaptable to different contexts, seems to be one solution to overcome the disadvantage between students with and without internet access and digital equipment, being able to make inclusion easier (Priess-Buchheit, 2020).

The issue of inclusion and equity in education in times of crisis was a major challenge to national education policies. To face them, most common practices have been the distribution of electronic devices with an internet, the distribution of free meals, and financial support for students and their families. Some countries allowed some schools remain open for students with particular needs, others created hotlines for counseling and psychological support, and in others, school leaders and teachers supported vulnerable students, distributing material to families, creating online resources and organizing WhatsApp groups, according to the OECD (2020b).

During school re-opening, there are policy responses that countries can adopt to ensure equity and inclusion, such as initiatives to address learning losses, accelerated curricula, and support to more vulnerable students.

A new learning space is the synchronous hybrid or blended learning environment in which both, in person and remotely, students can simultaneously attend learning activities. Raes et al. (2020) has done a study on this new concept that synthesized the best available evidence worldwide to provide an overview of the state-of-the-art regarding the benefits, challenges and current design principles to set up synchronous hybrid learning.

This study reveals that the most current literature is exploratory and qualitative and has focused on descriptions of students' experiences, the organizational implementation and the technological design. As suggested cautious optimism about synchronous hybrid learning. However, it showed that technology has great potential and can stimulate learning experiences, requiring a well thought-out policy for dealing with both pedagogical and technical challenges.

As organizational benefits of synchronous hybrid learning, this study highlighted the possibility of increasing the student enrollment numbers by flexibility in courses attendance and by these learning environments allowed to accommodate the study with job and family. Regarding pedagogical benefits, it should be noted that the hybrid virtual classroom offers the possibility to include expertise outside the institution, creating richer learning experiences and being able to strengthen the social relations among students and teachers. Combining the two delivery modes there is better support of the different learner characteristics, can help students to work better with technologies and give them a better sense of control over their learning.

About the pedagogical challenges from the teacher perspective, the synchronous hybrid learning environment requires important shifts in instructional methods and development of technological skills in learning activities. It also requires more coordination and focus from the teacher with an increased mental load.

From the student perspective, it is important that both face-to-face and remote students receive comparable learning experiences regardless of location format so that none of the groups feel neglected. Bearing in mind, however, that it may be more difficult to involve remote students, so they need to be encouraged to involved in the class activity, and the synchronous hybrid learning environment demands more self-discipline from them. The good conditions provided by technologies, in terms of vision and hearing, are also very relevant for maximizing the social presence of remote students (Raes et al., 2020).

This study concludes that change in instructional methods results in an increased workload, what means that it is important to provide sufficient training and support for teachers, both pedagogically and technologically, and for students. In synchronous hybrid learning environment the communication must be very clearly and a possible solution for engagement and frequent interaction with students must be sought, through oral questions, quizzes, using a virtual chat room or discussion forum.

Goodyear (2020) also pointed out that well-designed and properly equipped learning spaces help in the creation of more organized and productive learning and teaching activities, with students often have an active role in adapting the learning spaces, tools and tasks.

Thus, in order for hybrid teaching to be effective, it is important to have flexibility in the instructional methods used by teachers and the development of autonomy skills on the part of students. It is also essential the pedagogical integration of digital technologies in the teaching, assessment and learning process by teachers and the development of technological skills in preservice teacher education. Namely with active methodologies focused on students, such as discussions, presentations and simulations of classes or remote sessions, with continuous formative feedback (Rodrigues, 2020).

During and after the Covid-19 pandemic, different instructional methods and teaching-learning strategies were used to support flexible blended learning, such as peer instruction or flipped classroom (Nerantzi, 2020), and different online teaching-learning modes (Mishra et al., 2020). In the long run, we cannot neglect digital transformation in HEIs, being essential to develop a curriculum in which the perceptible change in the content knowledge and learning experience of students as enable them to think critically.

In turn, the teacher education courses for technology integration seem to have effects on pre-service teacher knowledge, both the practical and conceptual knowledge into technology-integrated teaching and learning in PK12 classrooms (Wilson et al., 2020). In the design of such courses, developing a deeper understanding of technology affordances may be critical and teacher educators must understand their role about the influences they may have on issues of technology to fully support preservice teachers.

In addition, it appears that hybrid learning spaces can have effects in enhancing higher education students' employability, verifying that the hybrid learning spaces supported new understandings of employability development, namely when students and educators engage in online learning spaces in a community of practice and inform learning and teaching enhancements (Bennett et al., 2020).

METHOD

In addition to the literature review, a qualitative case study approach supported in the Masters of access to the profession of teachers was used, specifically in the master's degree in Economics and Accounting Teaching at the University of Lisbon and in the master's degree in Teacher Training for Compulsory Secondary Education and Baccalaureate, Professional Training and Language Teaching from the Complutense University of Madrid.

The use of comparative case studies is related to the fact that we can analyze similarities, differences, and patterns across two cases, allowing us to describe and analyze situations and contexts that can contribute to the study of the training programs in question (Yin, 2011).

One of the main advantages of case studies is that they observe effects in a real context, recognizing that context is a powerful determinant of both causes and effects (Cohen et al., 2000). They also allow, through participant observation, that researchers are used as "research tools and data collection" (Yin, 2011, p.122).

It is assumed that diversified data collection methods are used (Cohen et al., 2000), so documentary analysis based on the legislation that fits these Masters in Portugal and Spain was carried out with a focus on their prerequisites, curriculum structure, study plans, specialties, curricular units, and professional practice. Field visits with a participant and non-participant observation of classes were also conducted (Bogdan, & Biklen, 1994; Johnson, & Christensen, 2004), complemented with questionnaire and written unstructured interviews surveys by the research authors to students and teachers, respectively, recorded through online Google Forms and in field notes. These aimed to contextualize the cases in order to identify and analyze the instructional methods used and pedagogical practices implemented, namely about the use of digital technologies and online teaching. The unstructured interviews or informal conversations are view as opportunities to add "context" and "authenticity" to data and they can unlock otherwise opportunities to enrich data (Swain, & Spire, 2020).

In the data collection, the subjects taught by the researchers were selected, for convenience, and these data were analyzed and processed using the content analysis technique with the NVivo software (Bardin, 2011; Elo et al., 2014).

In the observation, ethical concerns were taken into consideration by the researchers, and the observation and data collection were carried out by them in their disciplines with knowledge of the students in a clear and objective form, and with "investigator triangulation" between them (Flick, 2004).

Ethics in educational research is more a moral process than an administrative one, according to Head (2020), so these issues have been constructed with real care and rigor in data collection and analysis, and with the protection of the participants in mind. The process of reflection on the ethical issues helps the researchers to think more deeply about the principles and considerations that may arise during the research process in order to ensure the quality and reliability of this qualitative research.

FINDINGS AND DISCUSSION

Case Studies – Preservice Teacher Education Programs in Portugal and Spain

The case studies are based on master's degree in Economics and Accounting Teaching at the University of Lisbon, in Portugal, and on master's degree in Teacher Training for Compulsory Secondary Education and Baccalaureate, Professional Training and Language Teaching from the Complutense University of Madrid, in Spain.

These master's degrees are a necessary condition for teaching in secondary education, but it is not enough, and it is mandatory to have previously complete a degree or higher education in the specific scientific area in advance, such as Math, History, Economics, Technology or Arts.

In Portugal, the 1st cycle of higher education (undergraduate) corresponds to 3 years and the masters (graduate) to 2 academic years, while in Spain, the 1st cycle is 4 years and the master's is 1 academic year. These masters also present a differentiated curriculum, since the first is specific to a scientific area with some disciplines common with other Master's in Teaching in other specific areas, while the second is unified, presenting as an option the specific disciplines of the scientific area.

The master's degree in economics and Accounting Teaching at the University of Lisbon has its curricular structure and study plan defined with 120 ECTS (European Credit Transfer and Accumulation System) and duration of 2 years or 4 semesters, according to Order No. 7093/2015 of the University of Lisbon - Rectory (2005) that fits in Decree-Law No. 79/2014 of 14 May that regulates the legal regime of professional qualification for teaching in pre-school education and in basic and secondary education in Portugal (Ministry of Education and Science, 2014).

The University of Lisbon's master's in teaching aims to increase the general level of teacher education that deepens their initial academic training, focusing on the knowledge required for teaching in the content areas and in the specific disciplines of each scientific area. It includes training components in the area of teaching; general educational area; specific didactics; cultural, social and ethical areas; and initiation to professional practice, which culminates in supervised practice (Ministry of Education and Science, 2014).

The training in the teaching area focuses on the knowledge required for teaching in the content areas and in the specific disciplines, including deepening knowledge of the subjects. In the case of the master's degree in Economics and Accounting Teaching, these disciplines are Financial Management, Portuguese and European Economics, and Social Analysis of Education (University of Lisbon – Rectory, 2005).

Training in the general educational area covers the knowledge, skills, and attitudes of teachers relevant to their performance in the classroom, at school, and in their relationship with the family and the community. It includes the areas of developmental psychology, cognitive processes, curriculum and assessment, school as an educational organization, special educational needs, and classroom organization and management.

The training in specific didactics covers the content areas and the teaching of the subjects of the respective master's degree in teaching. In Economics and Accounting Teaching master the subjects are Didactics of Social Sciences, Didactics of Economics, Didactics of Accounting, and New Technologies in the Teaching of Social Sciences (University of Lisbon – Rectory, 2005).

Initiation to professional practice includes observation and collaboration in educational and teaching situations, supervised practice in the classroom and schools, and experiences of planning, teaching, and assessment. It takes place in classes of the different levels and cycles of education and teaching in the

specific area in a school, seeking the articulation between knowledge and the way to transmit it aiming at learning. It should be conceived in a perspective of professional development of preservice teachers and promotion of permanent improvement of their students' learning.

The training in the cultural, social, and ethical area encompasses awareness of the major problems of the contemporary world, including the fundamental values of freedom of expression and religion, and respect for ethnic minorities and gender equality values; the broadening of knowledge areas, including scientific culture, the arts, and the humanities; contact with the methods of data collection and critical analysis of data, hypotheses, and theories; and the ethical and civic dimensions of the teaching profession.

Of the total 120 ECTS, their distribution among the training components requires minimums, being 18 ECTS in the area of teaching, 18 in the general educational area, 30 in specific didactics, and 42 in the initiation to professional practice, which includes supervised teaching practice (Ministry of Education and Science, 2014).

The subjects in the components of the general educational area and the cultural, social and ethical area may be common to the different master's in teaching. The degree of master is conferred after approval in all subjects that integrate the study plan and the public act of defense of the report on the supervised teaching practice.

In order to develop the initiation to professional practice activities, including supervised teaching practice, cooperation protocols are signed with pre-school and primary and secondary education establishments, called cooperating schools.

The teachers from the cooperating schools who collaborate in the training as tutors are called cooperating or mentor teachers. They must have training and experience appropriate to the functions to be performed and teaching practice in the respective level and cycle of education and teaching subjects never less than five years.

Regarding the pedagogical supervision process, it is important to create relationships and long-term partnerships with experienced teachers in the cooperating schools, from a perspective of effective collaboration, reflexivity and sharing of practices between various contributors – the preservice teacher, the university professor and the mentor teacher. In this way, the supervised practice will have an impact both on the training of new teachers and on the professional development of mentor teachers, through shared experiences of reflection, evaluation and critical analysis of praxis (Rodrigues, 2019).

The master's degree in Teacher Training for Compulsory Secondary Education and Baccalaureate, Professional Training and Language Teaching from the Complutense University of Madrid is characterized by having a professionalizing character and its main objective is the training for teaching, in its different specialties. This training allows access to regulated professions such as teaching the different subjects of Secondary Education, Baccalaureate, Vocational Training and Languages (Ministry of Education, Social Policy and Sport, 2008, 2015).

It also provides training directed towards teaching and education in the different areas of knowledge and specialties, and within the educational stages and fields that fall within its competence. This training, regardless of the type of space in which teaching may be exercised, provides not only a complementary knowledge of the area of specialization focused on the educational stage or field, but also an applied didactic knowledge and a training on the educational, social and personal context in which teaching will be framed.

With this training purpose, eighteen specialties are offered within this master's degree, among them: Geography and History; Economics and Business Administration; Training and Labor Orientation; Mathematics; Computer Science and Technology, etc. This master's degree has an inter-center character, and the classes of these specialties are taught in nine different faculties (Ministry of Education, Social Policy and Sport, 2015).

This master is offered annually for each of the specialties. It lasts one year and consists of 60 credits, structured in three modules: generic, specific, and practicum module.

The generic module is common to all the specialties of the Master with 12 compulsory ECTS. Its objective is to provide future teachers with the psycho-pedagogical knowledge they will need in their future profession. It comprises three subjects: Learning and personality development; Educational processes and contexts; and Society, family and education.

The objective of the specific module is to provide complementary training and didactic preparation adequate to the specialty. The organization of each subject varies in the different specialties and is composed of two subjects with 30 compulsory ECTS: Complements for disciplinary training; and Teaching and Learning of the corresponding subjects and Teaching innovation and initiation to educational research.

The practicum module includes the internship of the specialty in a secondary education center, with 12 ECTS, and the master's thesis, with 6 ECTS. The practicum is carried out in a secondary education center. Its objective is to bring students closer to their future professional practice, familiarizing them with the administrative and organizational aspects of the center, educational project, annual programming, teaching planning, teaching initiation, tutorial action, etc.

The master's thesis is intended to serve as a synthesis of the training received and must reflect the competences acquired by the student in relation to the chosen specialty. It is supervised by a university professor, who preferably coincides with the internship tutor, and is defended before a tribunal at the end of the course. In order to be presented, it is required to have passed the rest of the subjects of the degree.

The Department of Education and Research may organize training activities aimed at developing the competencies and skills of tutors to better support and guide students.

The practice in school context in the master's program in Spain is concentrated in 2 months with 30 weekly hours (Department of Education and Youth, 2020), while in Portugal it is distributed over the 2nd year, included in the disciplines of Initiation to Professional Practice III and IV of the 3rd and 4th semesters, with the preservice teachers having to prepare and teach in a supervised way a minimum of 450 minutes of classes. The disciplines of Initiation to Professional Practice have precedence, i.e., they can only be started after the previous one (University of Lisbon – Institute of Education, 2017).

Hybrid Learning and Pedagogical Practices in Pandemic and in Post-Pandemic Time

Considering the guidelines of the Portuguese Ministry of Science, Technology and Higher Education for the academic year 2020-21 to cope with the Covid-19 pandemic, a contingency plan for the Institute of Education at the University of Lisbon was prepared.

In the first semester, in addition to the rules and procedures for the use of spaces and the operation of services, it was considered that academic activities in general should continue in a face-to-face manner, with two types of pedagogical organization. In the courses with 15 or fewer students, the pedagogical work followed the modalities usually practiced in face-to-face courses, and in those with more than 15 students an adapted regime was followed. In this regime, the alternation of face-to-face work with autonomous work was conjugated, together with the alternation of the weekly presence of the students of each class.

The implementation of this model implied the division of each class into two independent units, which combined sequences of face-to-face work and autonomous work supported by technological resources, namely through Moodle and Zoom platforms.

In the second semester, due to the worsening epidemiological situation in Portugal and the extraordinary measures of the state of emergency, until March 30, 2021, all teaching activities took place in remote teaching. After this date, the hybrid regime of the first semester was resumed.

The teaching activities in remote teaching were carried out through synchronous sessions, aimed at all students enrolled in each class, using digital platforms and, always, at the times officially determined for each subject. The scheduling of synchronous sessions and the dissemination of the respective access links to students were managed by the professors. The availability of students' technological resources was also checked, and monthly monitoring of the activities developed was carried out, paying special attention to the difficulties experienced by students.

In the case of the Master's in teaching Economics and Accounting, in this academic year, the existing class of 17 students was attending the 1st year of the Master's, with less involvement with the cooperating school, since this master's only opens applications every two years.

The initial contacts with the cooperating school, namely the selection of the cooperating school, knowledge of the context and educational project, and the mentor teacher were mostly made at a distance, through email or videoconference. Since the cooperating schools are also operating in remote teaching,

students had the opportunity to attend distance classes taught by the mentor teachers to secondary school students, which under normal circumstances would not happen.

Although in this type of master's degree the face-to-face relationship is crucial, in this case, given the possibility that we had some face-to-face classes in the 1st and 2nd semester and that in the next school year we can in principle resume face-to-face teaching, especially in the contact with the cooperating school, the loss will not have been relevant, being compensated with the development of technological skills provided by the pandemic times.

In the last half of the 2nd semester, in the specific classes of this master's degree students were given the chance to choose to have the classes in a face-to-face format or to attend them live at a distance. That is, the class is given in person at the university but broadcast live, with the possibility of participation, through the Zoom platform. For the university teacher it is a demanding pedagogical exercise because she must focus on the students in the classroom and, at the same time, have the concern to be located near the computer and monitor the students at a distance, since the technological equipment in the classrooms are desktops.

With regard to instructional methods, direct instruction is used but privileging group work in cooperative and collaborative learning, with the flipped classroom in the analysis and discussion of texts and themes of the program with critical reflection on professional practice.

Also used were practical activities such as the development and evaluation of teaching materials and resources, game-based learning, and simulations of teaching-learning situations with feedback.

The most significant pedagogical activity was the simulation of online lesson for 15 minutes by the preservice teachers, framed in a teaching-learning proposal which included the lesson planning, the construction of the resources and the respective assessment. These simulations were carried out in seminars with the presence of the class through the Zoom platform, in which each preservice teacher taught the class, and the colleagues assumed the role of secondary school students. At the end of each simulation, a debate was held focusing on some relevant didactic aspects that had been highlighted, including feedback from colleagues and university teacher, always in a perspective of constructive criticism and reflection on pedagogical practices. The contents, methods and strategies were chosen by the preservice teachers within the ones covered by the official syllabus of the subject.

The persistence of the situation caused by the Covid-19 pandemic has forced the definition of a contingency plan for the 2020/21 academic year also in universities in Spain with different scenarios to be applied depending on the evolution of the pandemic.

At Complutense University of Madrid, the organization of teaching in the master's degree in Teacher Education has been structured on the basis of two criteria: presence and security. This master's degree has an inter-faculty character, so that teaching has been organized according to the reality of spaces and teaching staff in the different specialties.

At the Faculty of Education, the classes had been taught dividing the student body into two subgroups (50%). Students who make up each of the subgroups attended the classroom for alternate weeks, with live online connection for students who remain outside the faculty's physical space.

The division was up to the coordinator of each specialty according to the Master Board of Directors. For example, in the case of the Geography and History specialty, the classes took place from Lunes to Jueves, at the Faculty of Education and Faculty of Geography and History, organized with 50% attendance with rotating shifts per week and online connection for those who do not attend the classroom.

In general terms, teachers adapted their instructional methods to the circumstances, maintaining the use of expository teaching with collaborative teaching and practical activities, and formative assessment was also reported. They mainly used the computer and projector in the classroom, and videoconferencing, digital platforms and email in remote teaching.

Thus, a hybrid learning scheme was used and different instructional methods were used in the different specialties of the master's degree in teaching.

For the analysis of this case, we selected the Geography and History specialty and Didactic of History subject, group B, with 27 pupils. Here we found that hybrid learning took the form of two groups at the same time conducted by two tutors. One group, with about 15 students, remained at home connected by

Collaborate platform. The other half attended at face-to-face way in the faculty, just in the "Hiper-aulas", a new space that incorporates new learning technologies for teachers training. Both professors addressed a cooperative learning approach with common exercises for all students. They worked in small groups connected by Discord and, if they preferred, WhatsApp as the main application they usually use. One of the most significant pedagogical activity developed required as assessment a cooperative video of about 20 minutes edited by teams of 4-5 students. The proposed goal was "improving History Teaching", looking for topics, technics, and methods according with this issue. The videos had to teach History using an original approach in each group. The use of self-produced videos by students has been tested as an interest way to disseminate soft skills as creativity, critical thinking, consistence, or communication in History Teaching (Alonso, & Castillo, 2014).

The starting point to elaborate these videos was not a direct proposal from the tutor. Instead of this option, the students took advantage of Jamboard, a Google App to be used as Digital Whiteboard, whose advantages and limitations has been showed in other research out History Learning (Sweeney et al., 2021).

Both face-to face and online attending students began the video production doing a Jamboard. Sticky notes were used to include ideas and features that all videos had to accomplish. The ideas were created by pupils, not by the teacher. This is a key point because the students defined their own goals as a way to improve participation between all of them. With all virtual sticky notes, the students were able to organize in the next dimensions:

TABLE 1
DIMENSIONS FROM STUDENTS JAMBOARD STICKY NOTES

Dimension	Number of included ideas
Feeling History Video	18
Fun History Video	17
Appropriated Contents of History	12
Well-Edited Video	8

Attending to this description, all videos had to include the four dimensions, this is, a video with a elevate level of historical contents, well edited to provoke a high level of affects. For three weeks, the students worked in their productions taking advantage of connection in the room and beyond, so students in a face-to-face way as online connections. The students wrote down a summary of each internal meeting to know how the videos were advancing. The videos' themes, objectives and methods are in Table 2 on next page.

The videos were presented to the classmates the last day of the course as a material for a general discussion about what History Teaching is and how promote hybrid dynamics in a Covid-19 context. To guide the discussion, each group elaborated a short talk (about 15 minutes) to explain the goals of their videos, sources of information, methodology, outcomes, difficulties, and final conclusions. An individual consideration about this task was included in each portfolio that the students delivered at the end of the course.

TABLE 2
THEMES, OBJECTIVES AND METHODS OF THE VIDEOS

Video	Historical Period	Objective	Method
Group 1: French Revolution.	End of XVIIIth Century	Teaching French Revolution comparing different perspectives.	Short-dramatized videos of different relevant character of French Revolution.
Group 2: Spanish Civil War: The Madrid battle	Spanish Civil War (1936-1939)	Comparative visions of the two sides.	Images and Videos with voices of the students talking about experiences of the Spanish Civil War in Madrid.
Group 3: Castilian Civil War	End of Medieval Ages (1475-1479)	Teaching the union of Castile and Aragon from the Civil War of Elizabeth I and Joanna "la Beltraneja".	Simulated interviews to the main character of the Castilian Civil War.
Group 4: Spanish Civil War	Spanish Civil War (1936-1939)	Explaining the Spanish Civil War	Vision of the War from the International Brigades.
Group 5: Letter from I World War	I World War: 1914-1918	Teaching the I World War Evolution attending to a micro-historical perspective.	Students wrote letter between a French soldier and his family explain the war evolution and their terrible sentiments about the War.
Groups 6: Madrid Streets from 1939	Madrid History: 1939-Actually	Teaching the evolution of different parts of the city in relationship with Spanish History.	Students researched about the name of the streets of Madrid to understand their changes along the time.

These student-centered teaching methodologies presented as examples sought the integration of digital technologies in the teaching-learning process, from a b-learning teaching perspective, as opposed to emergency remote teaching, which transposes face-to-face teaching to online teaching without the proper adaptation of instructional methods.

In these post-pandemic times, at the beginning of the 2021/22 school year, we return to face-to-face teaching and institutions, in view of the constraints suffered, tend to be more conservative given the perceived need for face-to-face teaching, issuing guidelines to enforce curricula in a totally face-to-face format.

Most higher education teachers also seem to prefer to return to a totally face-to-face teaching, some in the same format as before the pandemic, because they already have the planned classes and didactic resources that they used, while others are willing to improve and innovate some practices, although they consider that they already used some technological resources before the pandemic. In other words, teachers were divided as to whether they felt a significant evolution in technological skills and changes in practice, probably maintaining the same pattern of openness towards innovation.

However, preservice teachers show a higher degree of intention to use innovative instructional methods with technology considering the perceptions collected during participant observation in both cases analyzed.

In a brief online questionnaire administered at the end of the lectures given as part of the ERASMUS+ mobility of one of the researchers, in October 2021, 126 valid responses were obtained from students of the master's in teaching. In the last year, the vast majority had distance learning (44%) or hybrid learning (44%), only 12% had full face-to-face classes, and the main difficulties they mentioned were: difficulty in concentrating, lack of motivation, lack of personal interaction, problems with video call connections and a

heavy workload. As positive points, some were able to list: time saving in travel, use of new technological tools and development of technological skills, evaluation with more assignments and less tests, and more interaction with teachers due to the reduction of students per class.

In the future, the methods they plan to use with their students most mentioned were interactive games/gamification, flipped classroom, project based learning and collaborative teaching. They considered important the use of digital technologies and online education as a complement to face-to-face teaching in hybrid formats, allowing for more dynamic and participatory classes with the use of active learning.

However, despite the extraordinary experience in the educational context lived in the last 2 years with the Covid-19 pandemic, as before, there is still a need for deep reflection associated with professional training initiatives, both initial and continuous, at the level of pedagogical integration of digital technologies in the various levels of education.

CONCLUSIONS

The effects of Covid-19 pandemic on pedagogical practices were unavoidable during periods of confinement and sanitary restrictions, and different formats of hybrid learning supported by digital technologies were created.

It seems that technologies use in higher education allows to motivate, engage and facilitate student-based education and have a positive effect on teaching practices, and that they can improve the teachers 'own teaching practices (Mei, Aas, & Medgard, 2019). However, it is necessary to understand how, how often and how intensely we can pedagogically integrate digital technologies in order to improve the teaching, assessment and learning processes.

The curricula and instructional methods developed in the preservice teacher education programs in secondary education in two European countries, Portugal and Spain, were analyzed. Despite their formal differences, they have equivalent characteristics, objectives, and achievements.

The literature corroborated by the data analyzed in the case studies, allowed us to determine the importance of the design of virtual learning environments, considering teacher support, interaction, student collaboration and autonomy to be considered in hybrid education.

In this regard, it is important to reflect on the balance between face-to-face and distance education, the great potential of technologies to create learning experiences, the necessary development of technological skills of teachers and students, and the adaptation of instructional methods to this teaching format, including solutions to promote inclusion and equity in education.

Concluding, in hybrid education it is important that teachers adapt instructional methods and students develop autonomy, including the pedagogical integration of digital technologies, as well as an effective teacher education in these areas.

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