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The application of smart learning systems during global pandemics: Taking Spanish teaching course as an example

Bo Lan[1], Nan Li[2], Xinying Yan[3], Chenxi Li[4], Chao Luo[5,*]

[1]*School of Foreign Studies, Jiangsu Normal University, Xuzhou, Jiangsu, 221116, China*
[2] *Faculty of History Arts, University of Granada, 18011, Granada, Spain*
[3]*Autonomous University of Madrid, Madrid, 28040, Spain*
[4]*Guangdong University of Foreign Studies, Guangzhou, Guangdong, 510420, China*
[5]*Shanghai Jiao Tong University, Shanghai, 200240, China*
[*]*Corresponding author*

Abstract: *The teaching and learning environment have changed significantly over the last decade with the integration of an increasing amount of information and communication technologies, especially in distance education due to global pandemics, total lockdowns, isolation, and quarantine periods. The number of numerous virtual and non- virtual tools involved in educational processes is growing day by day. In terms of technological innovations used in learning environments, many researchers and educators are trying their best to bring more creative ideas into the technology- based learning environments. Although higher educational institutions have greatly benefited from the growing number of hardware and software resources in the educational process, they have also faced some setbacks that have harmed the learning processes. These technologies have in turn complicated some of the processes in the learning atmosphere. There- fore, we take Spanish teaching course as an example to present the challenging smarter teaching and learning systems that higher educational institutions face today.*

Keywords: *Smart Learning Systems; education; COVID-19; Spanish teaching*

1. Introduction

The term ‘smart’ is commonly used to describe technological developments in all areas of modern society. The term ‘smart learning’ itself best refers to the use of technological feedback used to enhance personalized learning in a smart virtual and non-virtual environment. By ‘Smart Learning Systems’ scholars generally mean all technological, virtual, and non-virtual tools that are widely used in the modern education system [1]. Smart learning environments include “intelligent tutoring systems (ITS)”, “adaptive learning systems”, “technology-enhanced learning”, “web-based learning”, “mobile learning”, “context-aware ubiquitous learning using sensor technologies” [2]. These tools are used to meet the requirements and improve the teaching and learning environment not only in the classroom but also virtually. Although this need for a smart academic environment existed long before the global pandemics, it was not given enough attention until the urgent need for smart facilities knocked on the doors of all educators and learners [3]. Thus, the goal of a smart educational environment is to make traditional learning and teaching methods in higher education smarter. The need for smart learning and teaching management systems is on the rise again due to the unexpected challenges that higher education is facing day by day.

To meet the demands of the changing learning environment, we needed to research and absorb useful information about new important virtual tools and try to offer other users to implement them in the current educational environment. The aim of this article is to realize the idea of introducing smart learning tools to capture the modern requirements of virtual and non-virtual learning for the benefit of educational goals through the use of existing and emerging smart technologies, one of the central problems in the system of higher education. The main goal of our research is to improve the use of Smart Learning Systems in higher education. With the support of smart facilities in education, the existing and emerging Smart Learning Systems have become an integral part of higher education and occupy a large space in the learning environment. The focus of our research was the interaction between teachers and students in the Spanish teaching courses, from which we could obtain all the data needed to answer the personal needs of each side in a learning environment.

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2. Background

2.1. The Fall of Traditional Educational Systems and the Rise of Smart Teaching and Learning Environments

Many researchers have tried to shed light on traditional learning and how it can be improved, but few have tried to clarify how Smart Learning Systems can best be used in modern educational environments [4-5]. Therefore, there is an urgent need to investigate the ability of online learning innovations to improve teaching and learning systems. The need for smart learning systems existed long before the global pandemics, as the emergence of smart cities and smart technologies created the critical need for smarter innovative educational and learning environments. The unexpected events of 2020 called for further urgent investigation of innovative online teaching and learning methods and their backgrounds [3]. Within a year, the teaching and learning environment changed drastically. To meet all the critical needs of the tetrad (e.g., teachers, learners, learning environment, learning content) that the traditional education system was trying to meet, smarter education systems along with supporting virtual tools began to appear on the educational horizon. Consequently, Smart Learning Systems become an important scientific research subject. Models and tools for virtual education systems are developing rapidly and researchers need to investigate the advantages and disadvantages of this or that smart learning system because they need to improve the way they are used for learners worldwide.

Prior to the pandemic, learners and educators were accustomed to acquiring the necessary knowledge from such Massive Open Online Courses (MOOC) platforms as Coursera, EdX, Udemy, Future Learn, Shaw Academy, XuetangX. Zhihuishu, CNMOOC. Common to all the above online MOOC providers is that most of them are based on video delivery and repository systems, although supplementary reading materials and other bibliographic references are also provided within the course. The history of MOOC platforms dates back to the early 2010s. In October 2011, professors at Stanford University launched three online courses that were open to anyone. Gradually, such courses evolved into mass events with more than 100000 registrations per course. The term ‘MOOC’ was coined by representatives of the mass media. Since then, more than 1000 universities worldwide have offered both free and paid online courses accessible to everyone. The biggest MOOC platforms are Coursera and EdX, but many governments and ministries of education have also tried to start their own online education platforms. Some websites usually provide the necessary information about the growing number of different online courses offered by different universities. Usually, all the courses are organized by subject. According to the website, more than 180 million users have registered for online courses by the end of 2020. Due to the global pandemic, the number of registered online learners on MOOC platforms is increasing daily and 2020 is often referred to as ‘The Year of the MOOC’. The number of online learners will continue to grow with more than 35 MOOC platforms now offering a variety of educational opportunities. The success of these platforms so far has shown that video materials with real lecturers from reputed universities are best received by students. Most of these platforms also support learners with online reading materials and other necessary bibliographic references. Most of the courses are also based on peer reviews of the material learnt as well as discussion forums on the knowledge acquired. What most of them lack is live online interaction between learners and instructors. These interactive and innovative features of online learning are setting new standards for global education systems.

2.2. Global Pandemics and New Requirements of Modern Educational Systems

In 2020, all universities had to adapt to modern online learning environments due to global pandemics and total closures. Zoom became the most used online platform and tool to deliver online learning worldwide. One of the benefits and advantages of this new system on the Zoom platform was the online interaction between learners and instructors. Additional discussion forums and clubs were immediately created. A more creative approach to teaching by instructors helped ensure that not only unprepared first-year students, but also undergraduate students received the feedback they needed. Currently, a smart academic environment is one of the first necessities for all higher educational institutions, but the methods, resources, and facilities used have not yet been studied. Although there are many virtual tools, most of them have not been properly studied scientifically. With the help of questionnaires and related data obtained from learners of different higher education institutions, we have tried to integrate the best Smart Learning Systems and tools into the virtual learning atmosphere of a higher education institution.

So far, our research has shown that purposefully designed lectures have facilitated the teaching-learning process with the advancement of technology-based teaching tools. Previous video-based lectures from MOOC platforms have also had a positive impact on the pedagogical aspects of new online learning

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and teaching systems. Lecturers around the world who had no experience with online teaching could freely explore the necessary aspects of the video-based teaching materials that have served as the key to the success of these online platforms for almost a decade. This could also help them improve their traditional teaching approaches, make the learning environment smarter, and explore its impact on the overall learning experience and increase student learning potential.

Empirical research on smart learning systems could help determine the pedagogical and instructional advantages and disadvantages of online learning. As a result, in one year, many significant unexplored problems of online learning have remained unresolved due to the new challenges that higher education in particular faces on a daily basis. The demands are increasing as well as the setbacks that can harm the teaching and learning processes. Scholars still need to examine various sources to understand which tools best support modern educational needs. In addition to the Zoom platform, many universities have established their own online learning platforms where both learners and instructors can download the necessary material for peer reviews and group discussions. The question of how to synchronize all the existing approaches and take full advantage of different smart education sources is one of the main issues that currently needs more in-depth study. Over the year, MOOC platforms and other learning sources have tried to improve their methods to make the learning environment more interactive, the interaction between teachers and learners more effective, and the learning process more engaging.

Nowadays, millions of learners worldwide confirm that they have become accustomed to online learning systems despite the failures and setbacks that higher education has experienced. Moreover, most of them confirm that they enjoy learning online and have the privilege to learn about this or that subject on different platforms. By using such different devices as PCs, smartphones or tablets, they feel more connected to their educational goals. This amount of combined learning is the advantage of modern higher education. The number of potentially interested learners is growing day by day. Content-based education is becoming one of the most preferred aspects of online learning. This complex learning reality makes most of the lecturers to consider learner-centered approaches and try to improve the traditional teaching methods.

In the smart learning environment, not only the learner's behavior but also the instructor's behavior should be considered. So far, researchers have considered the behavior of the learner. This can be considered as the first step to improve the existing and emerging Smart Learning Systems. The second step should be to consider the teacher's behavior, which is no less important in achieving better outcomes in higher education. This can also help to improve the studies and try to manage and adapt the existing smart resources according to the requirements of the specific learning environment. In our opinion, comprehensive environmental awareness and adaptive teaching methods are the first steps to create and use smart educational systems and smart tools. The high priority of smart learning environment is undeniable, as it helps to improve the performance of pedagogical interaction between teachers and learners according to the requirements of smart learning in higher education.

2.3. Defining Smart Learning from Scientific Perspective

In 2014, some journals were launched with the goal of helping higher education institutions make their learning environments smarter and find the best supporting solutions for this emerging and evolving field. Researchers of smart learning environments first address the definition of the smart learning platform from the perspective of its advantages over traditional educational approaches and methods. Spector et al. believe that the development of effective learning environments be derived from fields such as psychology of learning, instructional design, human-computer interaction, communication theory, cultural anthropology, media studies, performance technology, etc. [6]. Meanwhile, Hwang et al. introduced the model of “smart education framework”, which identifies the core concepts for successful intelligent learning in the modern digital world [7]. Zhu et al. emphasize the importance of location awareness, context awareness, social awareness, adaptability, resourcefulness, and high engagement in the educational process of intelligent learning [8]. Furthermore, Koper et al. introduce the concept of human learning interface (HLI), a “set of interaction mechanisms that humans expose to the outside world and that can be used to guide, stimulate and facilitate their learning processes” [9]. Aforementioned studies on smart learning environments showed that there is a lack of background research in this area. This is also due to the fact that this field is relatively new and more practical approaches have been developed to improve smart learning management systems than theoretical approaches to support this field. We believe that regardless of the scientific considerations of smart teaching and learning management systems, one of the most important aspects is teacher-centered and learner-centered approaches based on flexible adaptability of the context as well as pedagogical insights modeled in the different learning activity models.

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2.4. Most used learning management systems

Technological solutions for smart learning management systems primarily target educational institutions. Teaching and learning management systems are designed to help instructors manage their educational goals in the virtual space. Most of them provide a single platform through which course material can be accessed online. The course material may include not only the learning content but also assignments, syllabi, quizzes, tests, multimedia files and assessment systems. This allows both learners and instructors to have a more connected and accessible learning experience. Instructors can also create their own digital courses, distribute course materials, and even assess learners' progress online.

Our research would lack background information if we did not refer to https://www.g2.com/categories/learning-management-system-lms which regularly updates its list of the best technology solutions not only for educational purposes, but also for businesses. The website also updates the information about the best learning management systems. Users openly rate the smart learning management systems based on their own experiences, which makes the list more objective. According to users' ratings on the website, the top 10 learning management systems are: 1) Canvas, 2) D2L Brightspace, 3) Google Classroom, 4) Blackboard, 5) Docebo, 6) Schoology, 7) TalentLMS, 8) Cornerstone Learning, 9) Edmodo, 10) Moodle. We took the first 3 for example:

Canvas, a widely accepted smart learning management system, is favored for its user-centric design, flexibility, customization, and reliability. Developed by Instructure, it simplifies the educational process and integrates seamlessly with other tools like Canvas Commons, Learning Object Repository, Canvas Catalog, and Canvas Network, which offers global online courses. Users appreciate Canvas for its consistency, cost-effectiveness, and smooth transition capabilities, especially during the pandemic. Instructors can share content and create videos within the platform, fostering collaboration. The grading system is robust, allowing detailed feedback on assignments. Canvas also features an in-app messaging system for constant communication and a user-friendly interface that leverages familiar educational platform features. It supports integration with other smart learning platforms, enhancing its educational value. Canvas stands out with its 24/7 support and comprehensive content editor, making virtual learning more manageable. Its calendar feature aids in tracking content publication and grading, while the platform's organization capabilities allow for curriculum creation and resource management in one place. All course materials, grades, and communications are accessible on a single page, streamlining navigation and curriculum management. The platform also facilitates communication between learners, parents, and teachers, enhancing the educational process. Canvas is recognized for its dynamic, flexible design, clear module layout, and effective time management tools, making it an ideal solution for instructors managing large classes. Its ability to automate course tracking and task management further solidifies Canvas as a top choice in smart learning systems.

D2L Brightspace is a comprehensive learning management system that offers a seamless, device-agnostic experience with mobile app support. It boasts award-winning accessibility features and an intuitive interface with templates that simplify course design and assignment grading. Instructors can easily incorporate multimedia content and external resources to enhance courses, while integrated video capabilities, such as video-based grading and web conferencing, boost learner engagement. D2L Brightspace promotes personalized learning experiences, allowing students to document their progress and earn recognition through awards and certificates. It facilitates content sharing via Google Drive and social media integration, and supports various teaching methods, including competency-based instruction. The platform provides inline commenting for feedback and a Class Progress Dashboard for performance analysis, with detailed grade statistics for students. Users appreciate D2L Brightspace for its ease of use, accessibility to assignments, and effective communication tools between instructors and learners. It features a highly customizable system for higher education and corporate training, with excellent customer service and a supportive community. The platform encourages interaction through a customizable interface and a community where users share ideas and solutions related to educational processes. D2L Brightspace also stands out for its integration of presence and virtuality, which has been particularly valuable during the pandemic. The platform is continuously updated to meet evolving educational needs, recently introducing a chat feature for tech support, allowing users to stay current with system updates or revert to previous versions as needed.

Google Classroom is a sophisticated learning management system within Google Apps for Education, designed to streamline assignment creation, feedback provision, and classroom communication. It is highly regarded for enabling efficient management of classroom activities, allowing both teachers and students to submit and assign work. The platform's backup feature mitigates potential challenges, and its intuitive navigation facilitates material sharing. Google Classroom also promotes collaboration, making

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virtual meetings akin to in-person ones and fostering idea exchange. It has been particularly valuable during the pandemic, providing a seamless transition to virtual learning and integrating well with other learning systems like Canvas, Moodle, and Blackboard. Despite its simplicity, which prevents user overwhelm, some users find Blackboard Learn's navigation challenging. However, it remains a scalable and robust platform that enhances online learning opportunities and promotes learner engagement. Users can manage content, personalize lessons, and foster collaboration through its engaging environment, with features continually being updated. Learners can organize materials, assignments, tests, and quizzes, while instructors can teach various courses, both in person and online, sharing materials with students. Both platforms allow for tracking the learning process and maintaining academic progress, even in the event of quarantine due to Covid-19.

3. Smarter Ways of Spanish Teaching Course

3.1. The Smart Board - Interactive Whiteboard as Spanish Teaching and Learning Tool in Universities

The field of education has been significantly impacted, changed and improved by technological advancements in the last decade. A decade ago, teachers could only pass on their knowledge to their students using chalk on blackboards. Certainly, we cannot deny that this method was also effective in many ways and played a crucial role in the learning environment of universities. At the same time, we have to accept that this method led to endless, boring monologues where only the lecturer could speak and focus on the material being taught, resulting in a lack of interactive, collaborative learning. Lecturers mostly focused on the blackboards and writing with chalk rather than interacting with students. Later, white boards were introduced in the education sector. These boards were different from the old blackboards where lecturers could write with a marker. But this tool also had shortcomings that led to limitations in the learning process. Later, the advancement of smart technology systems led to the development and introduction of interactive whiteboards, which soon replaced the traditional white boards and blackboards in many universities. These whiteboards led to a more flexible interactive and conversational way of teaching and learning. This also resulted in more diverse teaching methods, including sharing content from various online and offline resources; more engaging lessons and discussions between lecturers and students; an easier way to share files and provide learning feedback; faster access to online resources.

The website https://mytechclassroom.com/best-smartboards-for-schools/#google_vignette which provides daily updates on the best solutions for integrating modern smart technologies in education, has recently updated its list of the best Smart Boards for educational purposes: 1) Vibe collaboration Smart Whiteboard, 2) 50 “Touch force 4K UHD touch screen digital display, 3) Smart Technologies Interactive Whiteboard with Projector, 4) Quartet porcelain whiteboard, 5) Ipevo IW2 Wireless Interactive White- board System, 6) Google Jamboard, 7) NIERBO HC40 Interactive Projector, 8) Epson BrightLink Interactive Projector, 9) GoTouch Basic 3.0, 10) eBeam Smartmarker Complete.

Studies indicate that Smart Board Interactive Whiteboards are highly effective in foreign language instruction, enhancing both the teaching process and uncovering students' learning potential. These whiteboards, connected to a computer and projector, allow for touch-controlled interaction, enabling students and teachers to navigate files, websites, and software applications together. They also facilitate note-taking, with the ability to save or print notes like regular documents. Interactive Whiteboards promote classroom interaction, aiding teachers in organizing lessons and encouraging students to present material, which fosters active engagement and dialogue. This focus on interaction and dialogue, rather than software operation, enhances language skill acquisition. The boards' widespread use in educational institutions has made them crucial for foreign language teaching, emphasizing the importance of conversation and interactive features like highlighting and underlining key elements. These features help learners and teachers concentrate on material that requires mastery. Students' presentation skills improve as they observe and emulate the teacher's use of the Interactive Whiteboard, learning to present material entertainingly, which is vital for cultural and language mastery. Oral interaction is supported through the exchange of opinions and ideas on presentation material. Interactive Whiteboards support foreign language learning by enhancing cognitive processes, with underlined and circled objects drawing attention and promoting concentration, thus aiding language acquisition. The interactive nature of writing and correcting mistakes on the whiteboard excites and motivates learners, fostering both personal and group enthusiasm for learning. Positive classroom attitudes, proven to be critical for learning, are bolstered by the boards' support. The innovative use of Interactive Whiteboards in language learning has

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become a valuable achievement in foreign language teaching, offering a dynamic and engaging learning environment that enhances cognitive processes and motivates students to acquire new knowledge.

The valuable approaches of researchers on the valuable use of Smart Board Interactive Whiteboards provide guidance to foreign language teachers not only to continue using interactive whiteboards but also to improve their implementation skills. In this stage of our research, we tried to use the method of anonymous questionnaire to interview learners and teachers from Spanish and other European higher education institutions and later analyze the results of the questionnaire. Participants of the online interviews were asked not only to provide their personal data, but also to answer five questions in the questionnaire:

- Have you ever used Smart Board Interactive Whiteboard in a foreign language classroom?
- How often have you used this smart technology tool?
- In what ways has this tool improved your studies?
- Have you encountered any challenges in using this tool in your classroom?
- Can you name the advantages and disadvantages of the Smart Board Interactive Whiteboard?

During the survey, a total of 100 completed questionnaires were received. Of the 100 respondents, 50 (10 lecturers, 40 students) were from Russian universities and 50 (10 lecturers, 40 students) were from EU universities. Initially, the understanding of smart technologies on both sides did not differ and both sides agreed that the integration of Smart Board Interactive Whiteboard is one of the best options of the last decade. This has improved the learning process in the classroom and the conversational nature of reading aloud has led to more fruitful outcomes in the learning process. Lecturers indicated that the challenges they faced at the beginning of the implementation of this tool and the benefits their students derived from the foreign language learning process exceeded their expectations. We specifically surveyed lecturers to find out whether they were satisfied with the introduction of Smart Board interactive whiteboards in their university's educational processes.

Our study at this stage of the research was aimed at gaining detailed insight into the respondents' understanding of Smart Board interactive whiteboard for learning a foreign language. We present the results in analyzed form according to the answers given and according to the most frequently given answers.

1) Have you ever used Smart Board Interactive Whiteboard in a foreign language classroom?

We asked respondents this question to find out how often Smart Board Interactive Whiteboards are used in foreign language learning. The affirmative response of 90% of the respondents confirms that this is one of the most frequently used tools in the foreign language learning environment. We should also point out that the 10% indicating that the respondents are not aware of this kind of smart technology. This means that the educators themselves do not use this tool in their lectures.

2) How often have you used this smart technology tool?

Most of them (65%) used it every day, followed by several times a week, which represents the frequency of use of Smart Board interactive whiteboards. The following answer represents the less frequent use of the smart learning technology under study. It is worth highlighting that 10% of the respondents, most of them university students, admitted that they do not use technology as a means of smart teaching and learning.

3) In what ways has this tool improved your studies?

We analyzed answer according to the frequency of core notions:

- Flexible use of the tool - 28%
- Active participation in the learning process - 22%
- Easy learning process of a foreign language -14%
- More interaction with the lecturer -12%
- More dialogues with classmates -10%
- More class discussions - 8 %
- More presentations on cultural topics of the target language - 3 %

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- Establishing the important points of the subject matter -2 %
- Fun and entertainment during the activities -1 %

4) Have you encountered any challenges in using this tool in your classroom

Respondents were asked this question to highlight the difficulties they have in using Smart Board Interactive Whiteboards to learn a foreign language. 43% admitted that at first, they had some difficulties in using the software and the novelty of the application caused some kind of discomfort in using the tool, but soon they were able to find ways to deal with the application without discomfort. 67% of respondents indicated that this type of smart technology motivated them to use it from the beginning without a sense of awkwardness. In addition, a new approach to learning and teaching a foreign language served as a hopeful message for the collective determination to achieve their educational goals.

5) Can you name the advantages and disadvantages of the Smart Board Interactive Whiteboard?

We have received the following answers to this question:

- Advantages: more flexibility in content delivery - 40%, more diverse teaching and learning approaches - 24%, more face-to-face interaction during class - 20%, easy access to online and offline resources-10%, staying connected to our educational goals - 6%.
- Disadvantages: None-95%, imbalance and inconsistency with personal expectations - 5%.

The results obtained clearly show that Smart Board Interactive Whiteboards are extensively used in foreign language classrooms. The integration of Smart Board Interactive Whiteboards along with other smart technologies has changed and modernized the teaching and learning methods and approaches for foreign languages and other educational purposes in general. From the results of the questionnaire and the interview, we can conclude that modern foreign language teachers and learners are actively involved in the learning process and the facilitated process only motivates both sides to continue and achieve new educational goals. The dedicated courses combined with the use of the Smart Board Interactive Whiteboards make the teaching and learning process more flexible and comprehensive. The conversational and interactive aspect of using this technology is one of the key benefits, which is miles away from the boring methods of traditional chalk and blackboard teaching.

In the next phase of our research, we also conducted another online interview with various representatives of other institutions from other countries to find out what other purposes Smart Board Interactive Whiteboards can be used for besides language teaching and learning environment. The results of our research showed that a number of renowned universities have used Interactive Whiteboards for other educational purposes as well. The benefits of using Interactive Smart Whiteboards are accumulating every day. Some universities have installed an Interactive Whiteboard controlled by a central computer. These boards record and project all sessions so that students never miss a lecture, and makes it easier for instructors to record and display data and take additional notes during the lecture. Some medical schools are also using whiteboard technology for various academic and training purposes [10]. Users highlight that whiteboards have made the educational environment more digital, the educational process clearer, and students more willing to engage. They also mention that over time they need little assistance from specialists and can take full advantage of the technology used. For their part, students enjoy the interactive collaborative learning process achieved through the use of Smart Board Interactive Whiteboards. They believe that this is the best solution that their universities have been looking for their students. The students also mention that they can easily save files with necessary materials for future use and share them with each other for various educational purposes. The lecturers and students of the School of Medicine, University of St Andrews, highlight that the Interactive Whiteboards have complemented the teaching environment and made the learning process much easier. This solution was anticipated long ago for future hospital employees, as there are a variety of scenarios that the use of Interactive Whiteboards can serve in the hospital. These are just a few examples of how Interactive Whiteboards have been used by various higher educational institutions around the world and how they have improved the learning process in the modern education system. We feel that Interactive Whiteboards are a very innovative and irreplaceable support not only for language acquisition but also for other diverse educational goals. This is one of the greatest revolutionary technological achievements in the modern education system.

3.2. Smart Classroom Integration for Language Learning Purposes

The 2020 pandemic posed unprecedented challenges to the global education sector, forcing a rapid

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transition to distance learning. Secondary schools and higher educational institutions had to swiftly adapt to virtual classrooms, a significant shift for educators and learners. Despite initial struggles due to unpreparedness, the urgency of the situation necessitated the adoption of new e-learning systems that were service-oriented, easy to implement, and provided flexible interfaces. The initial phase was experimental, but over time, the integration of these systems became more manageable. A new approach to distance learning was developed, leading to the emergence of a new generation of e-learning systems that adapted to the new reality of education. These systems, such as Zoom, Moodle, and Smart Classrooms, became universal in their approach to teaching culture. Instructors could easily publish both online and offline content, allowing students to access material over the Internet at any time, leading to more flexible learning schedules and increased effectiveness of virtual classrooms. Research over a year of distance learning showed that these platforms were successful in meeting the needs of modern education systems, leading to the adoption of new learning modes by institutions. Service-oriented platforms received positive feedback, becoming a virtual education workplace that developed new trends in global education. The development of education-specific services continues to grow, helping to prevent future total lockdowns. Local learning systems cooperate for common goals, making platforms more interactive and integrated. The Open Smart Classrooms system is a significant advancement in modern educational technology, allowing university students and teachers to connect online daily, share learning material, and avoid cultural misunderstandings through online subtitles. This system is particularly beneficial for foreign language learners, as it brings together native speakers and learners for easy online communication, making the learning process more flexible and intercultural collaboration a privilege.

The next phase of our research was to conduct another interview with the same Spanish and other EU students to find out whether they had managed to adapt to the new reality of distance education and whether service-oriented educational platforms had improved their Spanish learning. In order to obtain objective results, the interviewees were asked to answer the following questions:

1) How well did the Zoom platform and other learning platforms meet your educational goals?

2) How quickly did you adapt to distance learning system?

3) Do the online presentation options facilitate the learning process?

4) How do you rate the systems for downloading online and offline materials? Is this option helpful for a continuous access to the learning materials?

The details of our study results are presented below:

1) How well did the Zoom platform and other learning platforms meet your educational goals?

- It exceeded my expectations as it is very motivating and interesting - 55%.
- Although it was an awkward experience at first, it did not take long to get used to, so the learning process became more engaging - 30%.
- I see absolutely no difficulty in switching to e-learning because of the flexibility of the platforms used - 7%.
- I am still disappointed with this experience. The platforms lead to a less conversational mode of learning - 5%.
- It still needs improvement to meet my educational goals - 3%.

2) How quickly did you adapt to distance learning system?

- Less than a week - 70%
- A month - 22%
- More than a year - 8%

3) Do the online presentation options facilitate the learning process?

- Yes-83%
- Sometimes - 12%
- No-5%

4) How do you rate the systems for downloading online and offline materials? Is this option helpful

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for a continuous access to the learning materials?

- Certainly, it is one of the most useful options - 68%
- To some extent it is helpful - 19%
- No, there are other ways of accessing learning materials -13%

From the respondents' answers, it is clear that they have only positive attitudes and pleasant impressions of the virtual learning process. The respondents' answers confirm that the widely used Smart Learning Systems, together with the internal platforms, could easily replace the usual teaching and learning mode in the lecture hall. Respondents also have a positive attitude towards online presentations and downloaded materials that support learners' continuous access to all materials.

Educators could easily achieve their educational goals by cleverly exploiting all the available options of the educational platforms in use. Flexible learning time is also one of the privileges of virtual learning platforms. In any case, it would be reasonable to mention that learners mention that they understand the taught material better in the auditorium than in a remote classroom. Nevertheless, the responses of most students sound positive as they do not complain about misunderstanding the subject matter online. The discussion forums that not only the teachers but also the learners tried to organize during the total closure also proved to be very useful. This option also brings benefits to the educational platforms used. The smart spaces and smart learning environments of the distance education system illustrate the fruitful results in achieving the educational goals. Several technology companies are trying to improve educational platforms based on the setbacks that users and researchers are trying to spot recently.

4. Future directions

This article highlights the key features of the existing Smart Learning Systems, the challenges of which the modern education system is facing and trying to adapt to due to the global pandemic and lockdowns. New insights into the existing optimized smart educational systems, interactive whiteboards, smart learning environments, and other smart learning and teaching tools to find solutions for better outcomes are a step towards improving modern virtual and non-virtual learning methods. The critical importance of these smart tools is unquestionable given the current global situation. For their part, researchers are facing a new set of scientific challenges to investigate and find possible solutions to help learners and teachers achieve their academic goals. The focus should be on how to improve student engagement in the learning process, facilitate the teacher's tasks in classroom management, and enrich the conversational mode of learning in virtual environments. This kind of collaboration is important to make the lessons more interactive and avoid monotonous monologs on the part of the instructor. Finding solutions using smart teaching and learning management tools for face-to-face teaching is another issue that requires more scientific knowledge for future research. Improving digitized teaching methods and identifying the best solutions for the development of educational processes is an important task that lies ahead of researchers and educators. This is one of the reasons why this topic and this relatively new area of linguistics requires more scientific research.

5. Conclusion

Our research on Smart learning and teaching management systems revealed that the improvement of existing and emerging smart teaching and learning management systems is more than required, as they will help to develop smarter learning environments, tools and devices, virtual contexts, and future educational models focused on the teaching-learning environment. In this way, the teaching-learning process will become more open, purposeful, creative and universal. Obviously, such changes will not happen immediately, but scientific research in this area can also help to promote progress in smart education management systems. The development of better tools and techniques will lead to meeting all the requirements of modern higher education and improving the performance and behavior of the interaction between teachers and learners.

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