

Virtual education in times of COVID-19: bibliographic review

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Summary

This paper presents an analysis of virtual education as a new process of learning and transmission of knowledge through modern communication networks, defining its advantages and disadvantages, bringing with it the adaptation of students and teachers, seeking new strategies of teachings and learning. The objective was to analyze the theories of virtual education during the confinement by COVID-19. The method used was the bibliographic review in different databases, including Scielo, Dialnet, Scopus, Google academic. The search strategies that have been used to collect the information shown in the article were by keywords, between the years 2015 and 2020. It is concluded that virtual education is a good alternative to the emergency situation of education caused by the pandemic; however, in Peru, the digital divide has caused a lack of equity and limitations in digital resources, accompaniment in university education.

Keywords: virtual education, pandemic, e-learning, students

Introduction

The health crisis that has hit the world due to the COVID 19 pandemic has had a notable impact on all sectors of the country, being the most affected after the health sector, the education sector. Universities have had to adapt their study plan to the new regulations with an educational modality that implies significant changes in the form of how to offer a better quality service? How to implement new learning strategies? How to transform a classroom into a virtual

classroom?, but above all, how to support the student emotionally?, among others (Mujica, 2020).

The current situation has opened up the evidence of different social, cultural and economic inequalities, revealing, in turn, all the deficiencies that the educational system presents (Martens, 2020). Likewise, the implementation of the new virtual modality has brought with it new opportunities; however, it has also presented challenges and problems that, in turn, have harmed thousands of

children and adolescents residing in rural areas who suffer the consequences of the educational and economic gap (Martens, 2020). In relation to this, the United Nations Educational, Scientific and Cultural Organization (2020) highlights that approximately 70% of the world's students have been affected.

Regarding the digital divide that is happening due to COVID - 19, the International Institute for Higher Education in Latin America and the Caribbean of the United Nations Organization for Education, Science and Culture (UNESCO IESALC, 2020), documents how the fraction of higher education students and their stakeholders have been harmed by the current situation. It focuses on teaching in this sector, on the impact generated by the crisis, its effect and how they face the problems that have arisen this year; it also comprises a variety of principles, which are based on the exit plan.

The evolution of virtual education is a constant development, since it has been updated for decades thanks to technology. Currently there is a distance education system due to the chaotic situation we are experiencing. One of the historical antecedents is going back to ancient times when the methods to acquire knowledge and communication were through letters, without any other type of medium, which has been updated over time. According to research by Valdés and Gangas (2020), who, through studies, classified phases of development in education depending on the type of technology established, which implies being an important milestone in the history of education, updating data, thanks to modernity, today there is better distance education, due to the technological tools we have to carry out virtual studies, which provides greater

ease of access to develop the activities proposed by higher university institutions.

The objective of this research is to publicize the adversities and skills that university students develop in a health crisis, which seeks to provide knowledge and a respective analysis on this topic, knowing the academic skills that need to be developed to face and guarantee the good academic development. It is considered that the work is an important contribution to science, it will help to know the theoretical bases of virtual university education, adversities presented by the current situation in the university environment in times of pandemic.

Method

The method used was the bibliographic review, which allowed to update on the achievements that have been achieved on virtual education in times of pandemic. The methodological guidelines that were used for the scientific article, the review of different databases was carried out, including Eric, Scielo, Dialnet, Scopus and Redib; taking terms such as COVID-19, pandemic, virtual education, e-learning as references. Likewise, a search was made for articles written in Spanish and English during the period 2015 to 2021 in the global context, resulting in an international horizon on virtual education in times of pandemic according to current research criteria.

Higher education and COVID-19

According to the estimates of the International Institute for Higher Education in Latin America and the Caribbean of the United Nations Educational, Scientific and Cultural Organization (2020, as cited in Pedró ,

2020) it shows us that the temporary closure of the Higher Education Institutes affected approximately 23.4 million students; and 1.4 million educators, with regard to Latin America and the Caribbean, before the end of March of this year. From this, it can be said that this figure represents, approximately, more than 98% of the population made up of teachers and students of higher education. In addition, the United Nations Organization (2020) referred to the crisis that the education sector has had to face, seeking innovation quickly for the well-being of students in their education and training, being of great importance, and of possible solutions for long-distance classes, the use of television and radio for educational purposes. It is worth highlighting the help provided by governments around the world, since solutions for long-distance education were promoted, as well as the contribution of UNESCO.

Similarly, Velásquez (2020) mentions that the educator in charge must ensure that their students master the digital environment that is used; in order to be able to guide them about the correct use and proper functioning of chats, institutional emails, among others. Likewise, it indicates the importance of the academic function, which emphasizes that teachers must master the subject. On the other hand, it also talks about the organizational function that is responsible for the correct execution, development and explanation of the rules that are going to be used during the virtual course; In addition, it mentions the social function, which refers to the fact that the teacher must be aware of the different situations that their students may be going through, situations such as isolation, the loss of someone close, among other circumstances. Finally, it clarifies that the

guiding function is within which the educator must be the one who is in charge of giving personalized advice to his students.

Therefore, the work carried out by teachers is essential for optimal development in education. Those professionals in the education sector require help, providing them with training. Equally important, the changes that occurred in the wake of the pandemic exposed the significant value of learning, with the purpose of leaving no student without an education. Otherwise, there are groups of children and young people who have low economic resources to access technology and platforms in search of optimal learning (ONU, 2020).

Virtual education

According to Crisol et al. (2020) virtual education is a strategy that has a high impact on improving coverage, relevance, types of training and educational quality with respect to all levels. This is because it has multiple hypertext and interactive features. On the other hand, Crisol et al. (2020) tell us that virtual education promotes the use of various platforms and web applications that are used from management systems that give students the ease of achieving their educational goals. It is extremely important to take into consideration accessibility in virtual environments, in order to favor learning processes and interaction within the digital system based on equal opportunities where everyone has participation.

For Mujica (2020), virtual education, in a country like Peru, established as the only solution is a utopia, since the facilities to access technology in various homes in the country are very dissimilar. After the first

week of isolation and mandatory social isolation, several public and private schools have used digital resources such as virtual classrooms, streaming multimedia courses and e-learning platforms, as well as other means of distance education such as the one imposed by the Ministry of Education, which announced on March 20, the strategy entitled "I study at home", which seeks to combine various digital media, such as television, radio and web pages, so that education is brought to at least ten native and sign languages. In principle, this initiative can be considered very positive, since the search for technology-based strategies to close the educational gap is a sign of progress.

However, with the implementation of virtual teaching, new challenges have been encountered not only for educational authorities, but also for teachers and students, who have had to adapt to the multiple changes produced by the presence of the COVID disease. -19, having, in turn, to adapt to the new measures and provisions proposed both by the Government and by the educational institution to which they belong. With this, it is possible to identify a wide series of challenges that the agents mentioned above have had to face and those that, of course, must be taken into consideration for the timely application of this new teaching modality. These challenges involve aspects such as the proper management of virtual platforms, the use of an appropriate environment for studying and teaching classes from home, the availability of the Internet, the adaptation of study programs for virtual teaching and, almost indispensable, the technological, academic and psychological support provided by the educational institution (Aquino-Canchari and Medina-Quispe, 2020).

In addition, virtual education is not just about digitizing traditional classes, since these were actually designed for a face-to-face format that is unfeasible in quarantine. Therefore, the challenge lies in adapting the educational system to the new teaching modality and the way of learning that students currently have, proposing new strategies and constantly innovating. Likewise, this crisis, by taking the traditional system completely off guard; Many parents, both from public and private institutions, have been receiving an extensive list of activities and contents for students to carry out at home, without having obtained prior training or guidelines about the type of environment and organization necessary. Regarding this, Mujica (2020) maintains that, in the midst of an economic, labor and generalized stress crisis, burdening parents with obligations that fall under the educational system should be avoided, since delegating the educational process to parents does not It is virtual education.

Likewise, Estrada et al. (2015) state that virtual education should not be based solely on uploading and downloading files from a virtual platform, but rather on providing students with tools and information with the help of designing a study plan that is adapted to the new demands that result from this new modality and, through these scenarios, find a way to create new strategies that are didactic and with which students can strengthen the content made in class.

Similarly, it is known that with the recent health emergency and the implementation of this new form of distance education, numerous shortcomings and inequalities that are present in society have also been revealed, where differences between students are evident. who have the availability to acquire all the necessary

means to carry out the virtual study and the students who, unfortunately, do not have these possibilities and that, consequently, their opportunity to access and adapt to education is hampered. Likewise, it is possible to appreciate dissimilarities between the teachers involved, since not all of them have the same preparation and training necessary for the adequate transition towards this new modality of education (Alcántara, 2020).

E-learning in the university environment

E-learning, also known as online education, is the development of training programs whose place of teaching and learning is cyberspace, therefore, it is a form of distance education. Likewise, the pandemic has caused social distancing measures to be taken in the world in order to reduce the speed of contagion. Well, in the case of education, a large part of the academic sector has been totally affected and forced to change the form of pedagogy to adapt to virtual education. In order to maintain a correct functioning of teaching (Cifuentes-Faura, 2020).

They are essential tools for education for the learning process where the teacher and student can exchange information as well as acquire it, it is necessary to have them to achieve distance learning, from here e-learning is born, the European Commission in 2001 defined it as the use of the Internet that increases the efficiency of the learning-teaching process by providing collaboration within a distance virtual space.

On the other hand, the students' attitude towards e-learning is important, which is motivated by its supposed benefits and weaknesses. This is why determining attitudes is imperative when researching

student behavior, as there is a deep relationship between behavior and attitude, as a result, students are more likely to accept the mode of learning if there is a positive attitude of the student (Dookhan, 2018).

Challenges of Virtual Higher Education in times of Covid-19

The impact of COVID-19 has shaken socioeconomic structures around the world, and higher education establishments have been no strangers to this. The solution alternatives distributed in the face of the situation, motivated the process of virtualizing the classes. In the situation of the universities, it forced the measures of tele-education teaching mechanisms, thus ensuring its operability and effectiveness. Vicentini (2020) also indicates that, as a consequence of the quarantine, in May 2020 the Inter-American Development Bank and Universia Banco Santander met virtually, with the different rectors of the Leading Universities of Latin America, the purpose being to debate the challenges or challenges of the different universities in the face of the pandemic. That is why, as a result of the forced digitization, various universities had to register the curricular material digitally, suddenly, oppressing the sufficiency of programming and complicating the sources of effective communication.

According to Vicentini (2020), the most outstanding challenges that were identified are the following: Inequality in the development of an expeditious technological infrastructure. In the universities where a digitization process was already known, positive results were identified compared to the situation. However, in universities where these previous digitization processes were not

known, problems were identified to immediately resolve the development of an efficient technological platform, involving educational systems and the higher education of various students. Indeed, a certain gap has been identified in the implementation and deployment of resources and skills. Another important challenge is the lack of instruments for student evaluation in a virtual education environment. While it is true, the virtual evaluation is different from the face-to-face one. Which causes the rush to develop new methods that correspond to the environment. Emphasizing that the virtual knowledge of the teacher is scarce due to the lack of experience and training in the situation.

Another challenge is the shortage of trained teachers for educational digitization and accreditation, as well as the accreditation of student knowledge is considered important, the didactic activity of digital teaching modifies the face-to-face, it was identified that in some circumstances the students were overexerted, due to the lack of knowledge of the new digital training of the teacher. That is why, due to the new virtual mechanism, teachers are committed to developing new methods of education and teaching.

There is also the challenge of limiting access to technologies. Several students in the area have problems accessing computers or some digital device, nor do they have a good connection provision on their respective devices, which causes a considerable percentage of dropouts by students. On the other hand, it also creates a psychological impact of the situation that makes it difficult for students to learn, since several students live in unfavorable environments, which makes it difficult for them to adjust to the new digital training, taking into account the

circumstances of their home, access to technologies and a good internet connection.

Likewise, the stagnation of the study of the pandemic is presented. Due to the prevention measures imposed, such as social distancing, it was necessary to investigate the case as an office of the universities. For this reason, clinical and experimental classes were necessary in person, which is a challenge to make them efficient. And lastly, one of the challenges, no less important, is the probable financial instability of the university, due to the fact that the delay in tuition payments and the desertion of certain students has caused financial instability.

Importance of virtual higher education

Higher virtual education supposes a systematic implementation of both technological and communicational resources that are useful for the facilitation and arrival of learning, in this regard Sanabria (2020) expresses the importance of virtual education as a possibility, for the student and the teacher, of transmitting and manipulating information resources with various means and technological forms, so that students can carry out activities and manipulate resources, in different formats and means, in this way students can have various resources and activities, choosing them according to their learning process. learning. Also, depending on the strategic limits implemented, they may even set up their own teaching tools. Within the technological baggage used in university indoctrination, teachers will be able to identify and select those resources that are most useful for their students, and visualize which ones are preferred by them.

According to Mera-Mosquera and Mercado-Bautista (2019), virtual higher education is achieved due to the essential support of technological devices with the use of the Internet, admitting the use and exchange of information acquired between professor and student in a virtual way, regardless of the means of technological information collection, through virtual means, so that students can review and download the material reached by the teacher, in addition to uploading tasks or working in groups in class.

The resolving characteristic before the problem of attendance that virtual higher education supposes, has led Yong et al. (2017) recognize virtual university learning as the one that facilitates the instruction of students who physically cannot regularly take the subjects taught by the educational institution, which is why cyberspace is used as the instrument par excellence to impart education.

Factors that influence the quality of virtual higher education

For Martelo et al. (2020), key factors to contribute to an improvement in virtual education are: a) Self-management of learning content, which refers to the way in which the student meets their proposed objectives based on what they have learned academically, b) Didactic timelessness and task completion, which is based on the time invested and speed, which the student proposes to complete the assigned work, c) Quality of content, which mentions that the educational material presented must have aspects useful, reliable and timely according to the assigned course, d) Internet quality, referring to the speed of the service provided, e) Empathy with the environment, which indicates the ability

to understand people in the same environment, f) Flexibility of the course, based on the possibility of adapting to the schedules and thus also prioritizing the proposed content, g) Work methodology, methodology provided by the educator for the development that education entails, h) Educational platform, digital tools that contribute to education being established in a single space, i) Follow-up of students, which refers to support for students to be able to verify that they are acquiring adequate knowledge in the new virtual teaching and finally, j) Solid teacher training, is based on the skills of teachers to be able to encourage students not to drop out of virtual education, despite being complicated for them, so the adaptation is difficult, in addition to different personal factors that they may be going through.

Discussion

Virtual education is a teaching-learning process where time and space are not obstacles to continue with the academic development of the student, based on the use of the Internet network, being an innovative learning through information technologies and the communication. However, the pandemic caused the emergency implementation of this education by replacing it with the traditional one, benefiting from the aforementioned advantages as well as being affected by the absence of these tools (Cueva, 2020).

Along the same lines, students' positive or negative feelings about participating in e-learning activities through computer use will directly influence their behavior to use online learning to study (Mehra & Omidian , 2012).

On the other hand, Pozas Rivera and Navarrete Sánchez (2021) mention the non-statistical significance between men and women, the connection devices and the degree of the participants. It was concluded that the students present a neutral attitude with a deviation towards the positive. Likewise, Hernández Godoy et al. (2018) conclude that students with previous experience in technology, with an easy-to-use system, and who receive adequate technical support feel little stress and have a positive attitude towards e-learning.

In this regard, Miguel (2020) points out that virtual education highlights the challenges both administrators, teachers and students are exposed to in the current context, although for the administrative part its main objective and challenge is to offer quality education, to Teachers and students, the change has implied a continuous process of learning and rupture and the need to acquire new skills, such as self-learning, autonomy and socio-emotional skills.

Castro et al. (2020) Higher education in the time of the Covid-19 pandemic In this research, an analysis of the impact and immediate consequence of the pandemic in Ecuadorian higher education was carried out. After the accelerated expansion of the virus with the various impacts in the economic, social, health and obviously education. The measures that were carried out as an alternative to maintain the functioning of teaching were the technological tools and resources, obtaining results that require careful analysis. While the recovery, adjustment and achievement of university processes, positive and negative consequences of the entire stage of the pandemic were observed. Likewise, an assessment of possible stages or phases of development

was carried out with the idea of determining said results. Implementation in order to strengthen Information and Communication Technology for students and teachers to improve their performance.

Roman (2020) tells us that teachers have experienced a new challenge in education, this new virtual modality has completely changed teaching and has generated changes in the methodology that was used before the pandemic. However, teachers have had to reinvent themselves and use new academic activities and make the classes more didactic to get the attention of the students. Also, he refers that these sudden changes that teachers have suffered have generated anguish, uncertainty and fear and above all the daily routines that they have to go through in front of their computer, to this is added the social isolation that we are going through, the changes that the Like the students, most teachers are experiencing the stress of an atypical life. Not interacting with students face-to-face is very difficult for teachers in this new modality, since some are advanced in age and for teachers to go to school. university being in the classrooms generated a great distraction.

Finally, Fernández (2020) mentions that during this time of pandemic and changes, there are also processes of adaptation to new teaching methodologies that are mainly given by students, taking into account interests, expectations, planning, identity, and intervention. , Teachers, understand their new role, the change from face-to-face to videoconferencing, time management and teaching style and digital content, the management of digitized information.

Conclusions

The virtual modality is a good alternative to the emergency situation in education caused by the pandemic, however, in Peru the economic and digital gap has caused a lack of equity and limitations. Worldwide, governments implemented remote education, causing changes in students at a psychosocial level, because the interaction between teachers and students does not occur smoothly. Different figures show us what the pandemic has caused to education, such as children who have been withdrawn from their classes online and young people who did not have access to some platforms to study.

The recommendations for the student in virtual education: manage the time and study schedule in advance, have an adequate organization regarding assignments and evaluations, it is important to have reading routines to reinforce the learning given in the virtual class, have a good organization and group communication with classmates, take advantage of the resources that are provided on the network and avoid distractions during virtual sessions.

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