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Perception of Digital Skills and The Right to Education During Covid-19 in Undergraduate Students from A Private University

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Abstract

The purpose of this research was to analyze from the perception of university teachers, the digital competences of undergraduate students in the mediated use of information and communication technologies (ICT) and their right to education during the covid-19 pandemic. The methodology was qualitative in approach, with bibliographic analysis and hermeneutic phenomenological design. The key informants were seven (07) university teachers with master's and doctoral degrees. A semi-structured interview guide was used as a data collection tool, and for the processing and analysis of the information it was done through the application of the Atlas ti software. As main result, the adaptive process of students in the use of technologies in their transition from face-to-face to virtuality was noticed, as well as the need to require digital competences to face their learning process. Finally, it was reflected on certain conditions that affect their right to education due to a marked digital gap existing due to the lack of internet connection, economic situation to acquire a technological device, lack of electricity, among others.

Keywords: *Digital competencies, right to education, university students, digital divide, technological resources, covid-19.*

Introduction

The massive use of information and communication technologies (ICT) during covid-19 has become par excellence the most essential instruments for carrying out academic activities (Huerta, 2022), in addition, it has revolutionized all areas and activities of our society (Bilbao-Aiastui, 2021). The inevitable innovation by technological advancement has forced people to adapt and progress (Levano-France et al., 2019).

According to ECLAC (2020), it is a challenge for Latin American States to undertake policies that involve technology-mediated development and access to education in accordance with international human rights treaties. In our country, Article 16 of our 1993 political charter guarantees the right of access to educational services. In the context of the pandemic, institutions offering educational services were not prepared to face this transformation (Gómez-Arteta and Escobar-Mamani, 2021). The impact caused significant changes in the learning process (Hernández, 2017) requiring students to enable themselves with certain digital tools and resources that allow them to adapt to this process (García, et al 2022), as well as to appropriate digital skills so as not to be affected in their fundamental right to education.

UNICEF (2020), cited by Cotino (2020), pointed out that the emergency situation due to the pandemic, although it forced States to prioritize the right to life and health; He stressed that in the same way at this juncture, the effectiveness of the right to education as a human right must be maximized. Studies from an international scope report that during Covid-19 the lack of technological skills and resources in

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the professional training of university students have affected their right to education, so their learning must be facilitated and empowered in digital skills and that for this education must be inclusive and adapt to this new context within a framework of values and fundamental rights responding to the diversity of different generations differentiated in children, adolescents and young people (Castillo and Cabrera, 2021; Burgos-Videla et al., 2021; Bilbao-Aiastui., et al 2021; Serrano, 2021 and Balladares-Burgos, 2018).

Research at the national level shows that in a pandemic virtual education has increased educational and digital inequality, showing itself invisible to certain social groups that do not have the conditions to connect to the internet or a computer. In a virtual education, digital tools, skills for their use and connectivity are vital for the development of quality education, being a need for universities to develop training programs for their students and for their teachers in order to achieve the transformation that allows facing the rise of the current digital landscape to guarantee in the educational offer the competences related to the use of technologies in their target audience. (Huerta-Soto et al., 2022; Gómez-Arteta and Escobar-Mamani 2021; Narcizo, 2021 and Levano-Fancia et al., 2019). The disruptive transition from face-to-face to virtual in public and private education in Peru has made an evident difference at all levels, therefore, this study is focused on analyzing how the lack of internet connectivity in homes, the lack of technological resources, as well as the absence of training in digital skills can hinder the continuous learning process of students, affecting their right to education.

Digital skills in the XXI century

In the present century, digital skills play a significant role in the training of students and professionals (Cobo and Moravec (2011). In this era, the overwhelming digitization of information has implied substantive changes that hardly the student community does not finish adapting (Levano-France, 2019) so it is essential that in our society students are digitally competent while the applications of digital media are related to modes of production transformation, innovation and creation of new environments (Reis, et. al, 2017).

Digital competences are those skills and knowledge in the use of Information and Communication Technologies (ICT) (Mena, 2020), these are related to the attitudes that the subject needs to use them responsibly that provide access to communication and information networks for their management (Martínez and Rodríguez, 2017) include the use in a creative way, critical and safe technologies that allow the development of employability and learning of the person in society (INTEF, 2017, cited by Bilbao-Aiastu et.al., 2021). Consequently, it enables subjects to perform activities, solve problems, communicate, create and build knowledge (Ferrari, 2012, cited by Henríquez-Coronel et al, 2020). For university students, the use of technologies, tools and digital resources are useful in their academic training stage, contributing to their integration into their learning process (Perea et al, 2022).

Digital skills include information literacy, communication and collaboration, digital content creation, technology security and technological problem solving. (Sánchez and Rodríguez, 2021). The expansion of the internet in different areas and especially education has aroused interest in acquiring skills and integrating them into the teaching-learning process (Lea, 2013, cited by Martínez and Rodríguez, 2017).

Right to education

The right to education is a social practice that has marked its presence in all social order, from the incipient primitive organizations to technologically developed societies, the purpose of the right to education is to form citizens within the framework of an ideal citizenship (Ramón, 2020). In the educational approach for the use of new technologies, the transmission of information implies its delivery in a multidirectional way, no longer linear as it was in face-to-face learning, therefore, the specialization in new competences of the actors in the teaching-learning process is necessary (Quintas,

2020). This same author regarding learning with the use of ICT, citing Ruiz Velasco (2012) noted: The incorporation of new ICT in the educational system has been characterized by the magnification of its benefits, creating great myths around its incompetence and obsolescence, and precipitating students and teachers to get involved in its use and management in an irrational way (p.105).

Although, it is assumed that young people, university students, are digitally competent because they know about new technologies by the fact of having been born in the era of the information society, this is not so true. In this regard, Chiecher (2020) argued that young people of this generation do not know everything in technologies since they have not homogeneously developed digital skills that guarantee their educational and professional insertion. It is clear that this age group has developed in a digital world, however, given multiple economic, geographical and social factors, it has not been feasible to acquire certain attitudes or skills to adapt to digital environments to the detriment of being affected in their right of access to educational services. During the pandemic, marked inequality was evident due to a technological gap that threatened the advancement of education at all levels (Centurión, 2021).

Method

For the present study, the qualitative methodological perspective has been considered because it is oriented to the search for information, which will be analyzed and duly interpreted in order to give a logical explanation of the phenomenon. The qualitative approach explores the environment to be investigated to obtain in-depth explanations of the situation, in order to understand the existence of the phenomenon shown in reality (Borda, 2013). The type of research is basic and hermeneutical phenomenological design to understand from the perception and experience of teachers about the digital competences of undergraduate students and how it is related to the right to education. For the collection of information, an interview guide was used as an instrument, which contains the items or questions on the subject of study. For the processing and analysis of the data, the software Atlas ti *was used.*

Results

Next, the results are presented as a semantic network where the study categories digital competences in university students and the right to education are integrated. During the reduction of the data by means of an initial analysis-synthesis (free coding) twenty-six (26) codes emerged (figure 1) that reflect the meanings and relationships between them, as well as the subcategories that imply it and the central categories that allowed to understand the phenomenon of study. In this way; In the second level of analysis (axial coding), the codes "adaptability", "accompaniment", "positive attitude", "student motivation", "training", "skills in the use of technologies", "digital literacy", "communication", among others, were integrated; allowing to inductively analyze the original adaptive process of the undergraduate university student to virtuality in a pandemic situation. Likewise, it was warned that the lack of digital skills in students can affect their learning and *per se* their right to education. Similarly, a third level of analysis (selective coding) was carried out, integrating the subcategories to the central categories and establishing their relationships and rooting of the citations. Finally, through the triangulation of data-document, the "consistency" of the emergent meanings has been validated, elaborating a Sankey digram (figure 8).

Figure 1. Integrated semantic network of the categories digital competences and right to education

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Note: Own elaboration from *Atlas ti*.

Figure 2. Semantic network of the study subcategory Adaptability to virtuality

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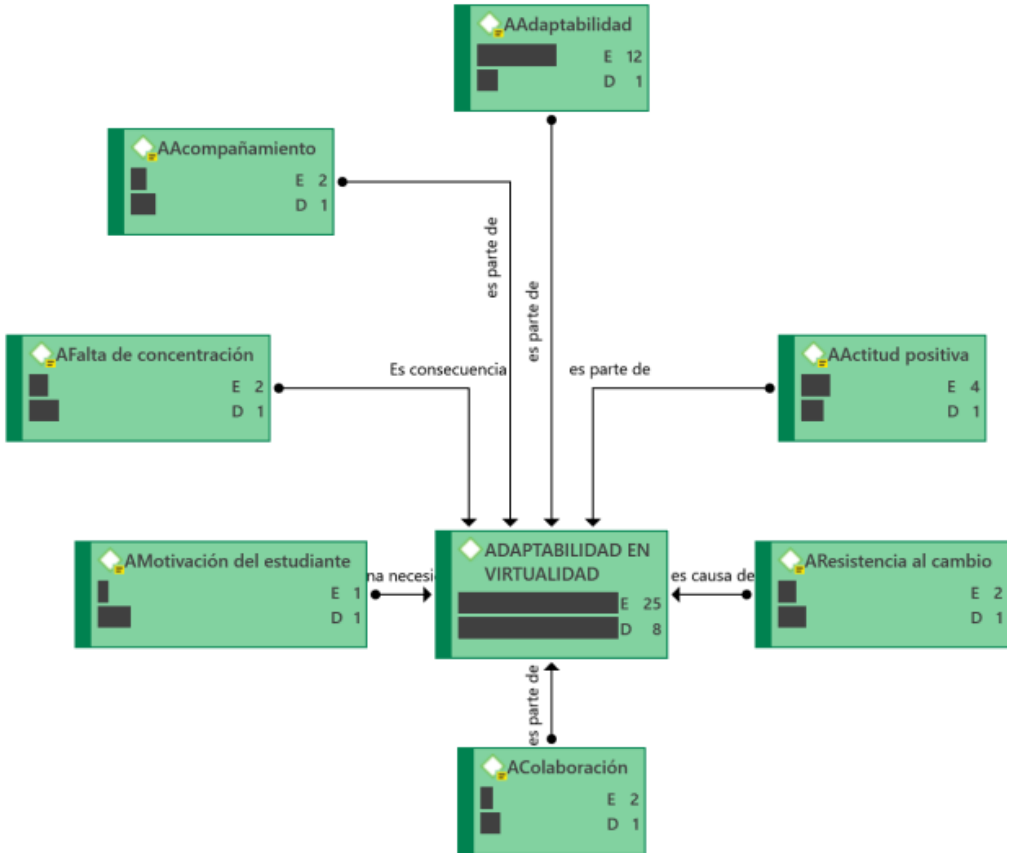

Note: Own elaboration from *Atlas ti.*

The changes that originated in the context of the pandemic forced university students to adapt to a new scenario with the mediated use of technologies. Although, in the beginning, it was complicated for some students due to the lack of internet connection or technological resources, during the process they were overcoming the obstacles due to a positive attitude and motivation of not wanting to miss their classes, as well as the effective accompaniment of their teachers or tutors and family members who helped them develop their activities in a normal way. Another factor contributing to this adaptation was collaboration and support among them. In the words of informants 5 and 6 they noted that: *"... Peer collaboration was important through digital tools"..."*... achieving its objectives with the support *"of those who did know about technology*". However, a consequence of this process was that students who achieved certain skills in the use of technologies took advantage of them to distract themselves in classes and affect their learning generating a lack of concentration,

A limitation of the adaptation to virtuality was the resistance to change on the part of older students who showed their preference for face-to-face versus virtual study using ICT.

Figure 3. Semantic network of the study subcategory Technological Skills

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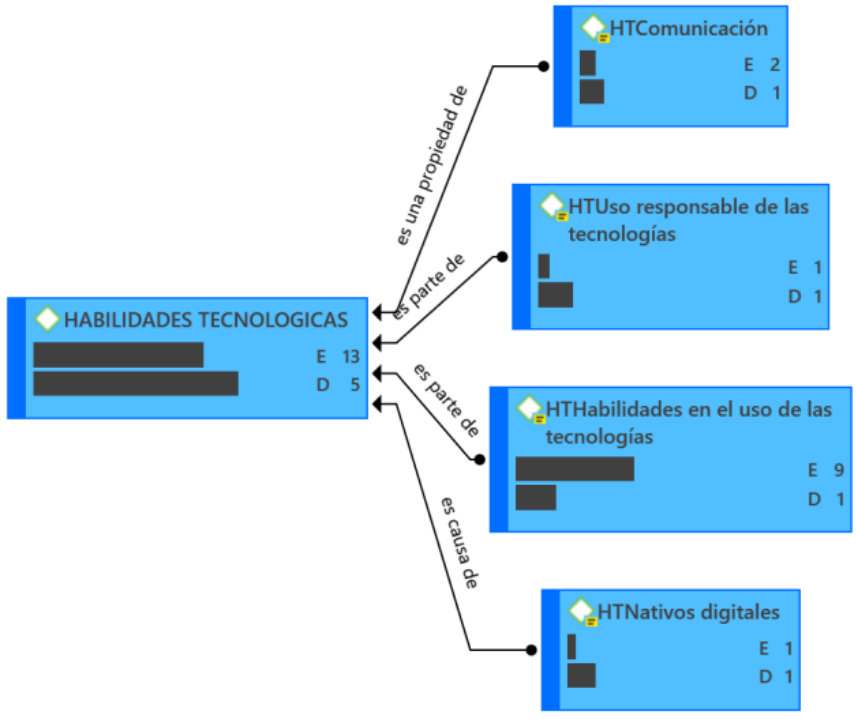

Note: Own elaboration from *Atlas ti.*

During the pandemic context, university students progressively developed skills in the use of technologies, generating their own competencies that allowed them to search and transfer information using various applications such as Google Scholar. These skills were used by students as digital natives; known as such according to informant 5 as *those "... that in a greater percentage belong to a generation that has grown up with technological resources..."* These skills also fostered in them communication, organization and systematization of information, awakening their creativity, critical thinking and responsible use of technologies. However, it was noted that in this process of consolidation the teacher and the university played an important role of support for the achievement of digital skills, as indicated by the informants.

Figure 4. Semantic network of the study subcategory Requirement to generate digital competences

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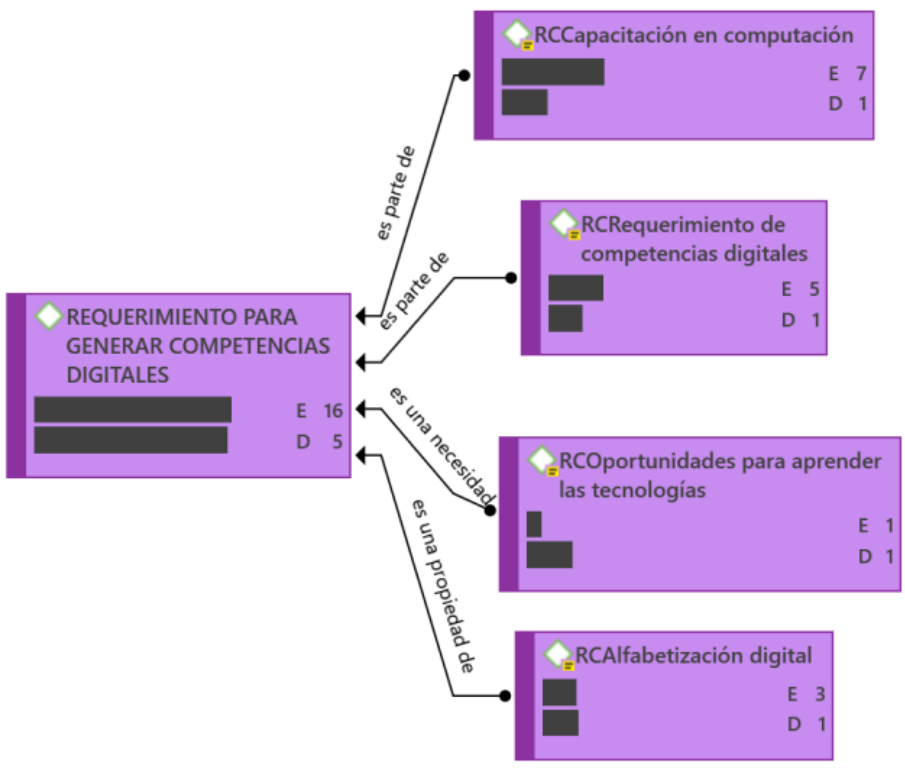
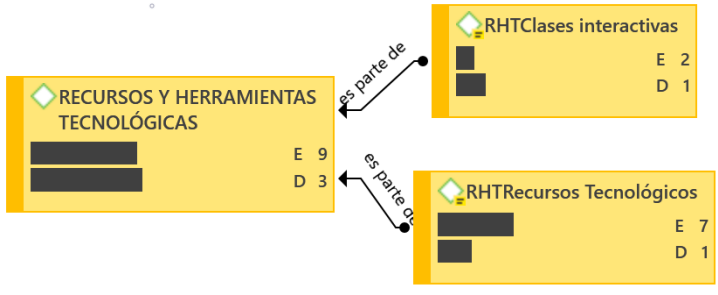


Note: Own elaboration from *Atlas ti.*

The skills in the use of technology by undergraduate students due to their condition as digital natives did not guarantee the digital skills necessary for them to achieve their learning objectives during the pandemic, requiring their training in computing, in the use of educational platforms and applications. The requirement of digital competences is oriented to their digital literacy, according to informant 7, they comprise: *"... Know all the digital language... communication and collaboration... content creation, security and troubleshooting..."*.However, in the context of the pandemic there were students who did not have the opportunities to learn the technologies, and this due to various deficiencies, of place (where there is no internet connection), economic situation (not having the means to acquire a PC, cell phone or tablet) and the lack of interest or motivation of the student himself, among others. Figure 5. Semantic network of the study subcategory Resources and technological tools



Note: Own elaboration from *Atlas ti.*

For the adequate development of the virtual learning activities of the undergraduate university student, minimum technological resources were required, which included either a personal computer (PC), a Tablet or telephone with internet signal. In this regard, the informant: 1 noted: *"... The first thing students need is to have a laptop or a good cell phone with high-speed internet..."* and other tools such as *"... WhatsApp, institutional platforms, email, canvas and others..."* (informant: 4). The classes became interactive allowing the extensive use of other resources for learning, such as YouTube, podcasts and digital books.

Figure 6. Semantic network of the subcategory access to education through ICT

Note: Own elaboration from *Atlas ti.*

Digital competences in undergraduate university students during virtuality guaranteed their right of access to education; however, the absence of them somewhat limited this right; However, they were progressively overcome due to a positive attitude of the student of wanting to learn. Other circumstances that reflected these limitations or hindered access to virtual classes were the lack of technological tools, failures and lack of connection to internet service, especially in places or rural areas where there is no signal or electricity service. In this regard, the informant: 7, said "... the economic factor is also important, from my experience I have had students who have had to listen to their classes from places where there was free WIFI signal since in their homes they had no signal, there are also students who live in places where despite being able to pay for the internet service, this service did not reach their area ..."

Figure 7. Semantic network of the study subcategory Limitations in the use of ICT

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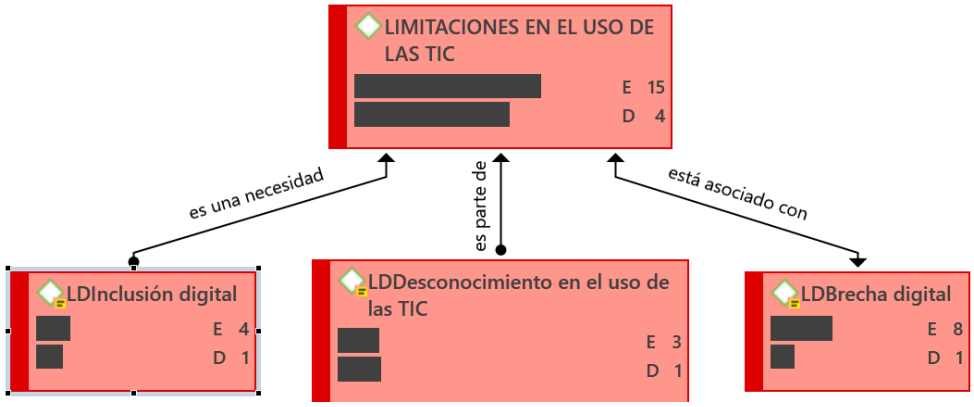


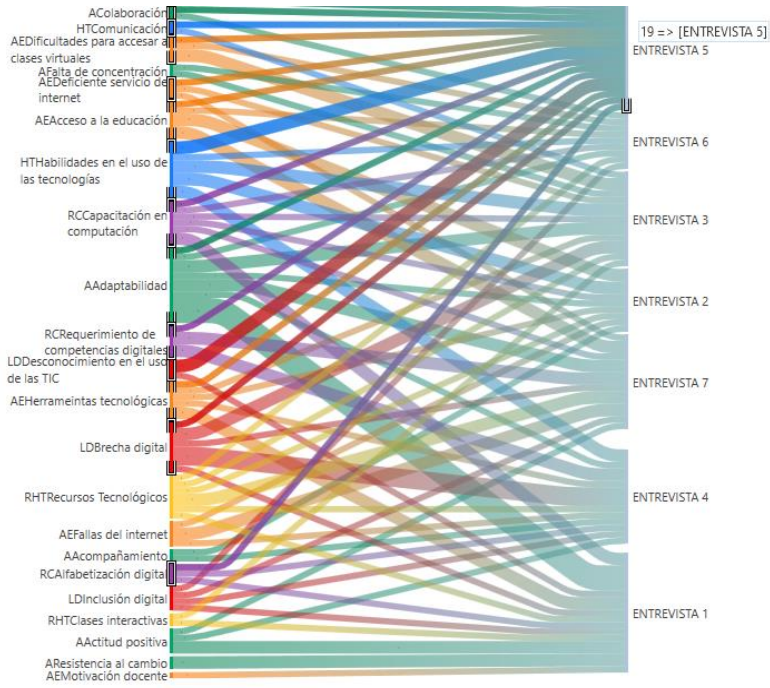
Note: Own elaboration from *Atlas ti.*

The visible limitations related to the right of access to education and reflecting inequality among students were shown through a marked digital divide. The lack of resources and technological tools to face virtuality was evidenced in the first order and as a consequence of this the generation of digital skills, so was the lack of internet connection. Other limitations noted had to do with adult students who did not wish to adapt to virtuality, others who had a disability that made it difficult for them to adapt and finally those who did not know about the use of ICT; Faced with this situation, teachers played an important role in motivating and encouraging their students to continue learning and achieve their goals. In the words of the informants: 1, 4, 5 and 6 stated the following: *"... while undergraduate students are more distant from provincial capitals (hamlets, population centers, etc.) they do not have access to computers, nor equipment that allows them to use ICTs ...", "... one of the recurring problems of students is the lack of internet on their digital devices ...", "I have had the opportunity to have elderly students and they consider that the use of ICT is very complicated and they do not present their work, which is why we must encourage these people to be ready for change ...", "... The ignorance of most students is concerning the hardware, because if they had technical problems they could not solve them, due to their poor management of office automation ..." ,*

Data-document triangulation

In order to validate the data (codes), the triangulation process was carried out with the interviews and under the saturation principle the consistency of the data (emergent codes) in the analysis-synthesis was verified. Next, the Samkey diagram is presented in which you can see the confluence of fluids (lines) of different symmetries, where it is observed that the thickest lines represent the strongest relationships between the codes adaptability, digital divide, positive attitude and requirement of digital competences and skills in the use of technologies, codes that correspond to each of the subcategories. This network of lines shows how the emerging codes are interwoven with each of the documents (interviews) affirming the validity of the study.

Figure 8. Sankey diagram



Note: Own elaboration from *Atlas ti*

Discussion and conclusion

This study sought to analyze how the lack of digital skills in undergraduate university students could affect their learning process and therefore their right of access to education in the face of the current situation due to the covid-19 pandemic. Among the most significant findings it was possible to know that although the majority of students presented skills in the use of technologies due to their condition as digital natives, it was not enough to guarantee their learning process while in virtuality greater skills were required due to the gamification of platforms and applications that deserved prior training. However, it was not an obstacle, for the student to manage to motivate themselves and learn from new technologies and not lose their classes, being an essential part, the support of their peers and the role played by the teacher and the university in this process.

In this regard, Chiecher (2020), pointed out that young people of this time, despite having been born and raised in digital environments where the information society predominates due to the use of ICT, are not properly trained in the use of new technologies because they have not developed in a homogeneous way the digital competences that enable them to insert themselves in education and in the professional field.

The disruptive transition from face-to-face to virtual during the health crisis demanded that undergraduate university students undergo an adaptation process, in some cases slow; for those who lacked some kind of skill in the use of technologies and for others fast due to basic knowledge in their use. In this regard, Levano-Francia et al., (2019) pointed out that the advance of technology has forced individuals to adapt to new digital environments, sincerely believing that students as a whole go through a process of progressive adaptation that does not end yet.

Another finding became the requirement for digital literacy to generate digital skills in undergraduate university students to face virtuality. This literacy includes the autonomous knowledge of information management, that is, searching, organizing, transferring and exchanging information through the mediated use of technologies, as well as to communicate and interact making responsible use of them. In this regard, Mena (2020) and Martínez and Rodríguez (2017), pointed out that digital competences in the use of ICT are skills that the subject requires to access communication and information networks to manage them in a creative and safe way that enables their development and learning as part of the community. Similarly, Sánchez and Rodríguez (2021) argued that digital skills include literacy, collaboration, content creation and technology security.

In the context of the pandemic, undergraduate university student learning was affected in some way due to the lack of digital skills that made it impossible to develop their academic activities in a normal way. Another factor that was noticed was the presence of a current digital divide, visualizing a marked inequality between those students who had technological tools and internet compared to others who did not have the resources to have any technological device or economic means to pay for an internet service and stay connected to classes. In this regard, Narcizo (2021), argued that the problem of access to technological resources due to the covid-19 pandemic is global, that although this situation hindered the right to education, it put on the table the inequality between social groups that did not manage to develop their classes remotely.

It is the obligation of every State to guarantee the right of access to education at all levels and especially in those institutions and universities where educational services are provided through the mediated use of technologies. According to ECLAC (2020) and UNICEF (2020), it is a challenge for Latin America, in line with international treaties, to undertake public policies that enable access to education, and the effectiveness of this right must be maximized as a human right, fundamental to every person, seeking its digital inclusion without discrimination.

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