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Digital competence of the university student in times of COVID-19

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Abstract---Background: In times of covid 19, digital competence provides various skills to students such as faster, more efficient and practical information search, which generates greater ease and accessibility to different sources for a better method of learning acquisition with new literacies. Objective of the study : The objective of the research was to compare the digital competence of university students from two universities in Lima. Method: It was a quantitative, non-experimental, cross-sectional study; A sample made up of 466 students (75% women and 25% men) from two fifth-cycle private universities in Lima aged between 21 and 28 years, selected under an intentional non-probabilistic sampling, was used. Results: It was observed that, of 233 students from private university 1, in terms of digital skills, 38.2% obtained a low level; 60.1% obtained medium level

and 1.7%, high level and, in relation to private university 2, 9.4% obtained low level; 72.1%, medium level and 18.5%, high level. There are significant differences in the level of digital skills in students from two private universities since the level of significance calculated is $p < .05$ and the Mann Whitney U is 12156,000. Conclusion: In times of covid 19, digital skills are of great importance; therefore, they are present in university curricula since they allow students to develop new cognitive abilities and innovative skills that will be useful in their academic lives.

Keywords---digital competence, digital literacy, COVID -19, student.

Introduction

Currently, the pandemic caused by covid-19 has paralyzed the entire world and brought with it consequences in the labor, health, economic, social and academic fields. The academic sector has been one of those affected by the lack of preparation for virtual education ¹. Today, Latin America not only registers problems based on confinement in educational issues; but it is still afflicted by problems in the educational system unrelated to it, which have helped to place greater emphasis on various issues such as existing socioeconomic gaps, one of the main causes within the educational system, since it is directly linked to progress and welfare of the peoples. The economic commission focused on Latin America and the Caribbean indicates that the educational agenda that is followed on the challenges of the new 21st century, linked to the achievement of a society emphasizing knowledge and progress in technological issues that are being executed ².

However, it does not leave aside the outstanding aspects of the 20th century, such as coverage, access, progression and, finally, the completion of all levels of education. For its part, the Organization of Ibero-American States (OEI) intends to unify two educational agendas in a single program in order to recover the educational delays of the 20th century that, in turn, can help to face the challenges of the 21st century in the same project ². The diverse socioeconomic situations have generated a series of transformations in the universities. However, globalization and technology are tools that facilitate access to information and communication, which allow an improvement in previously unimaginable educational production processes, which leads to a series of teaching processes according to the current situation ³.

In the university context specifically, face-to-face activities have been suspended, taking the sessions to an online modality that is a challenge for all university teaching teams and for students, who are looking for a way to comprehensively redesign the subjects that were carried out. in person ¹. There is no doubt that students who belong to generation Z are digital natives and are linked to technology through electronic devices and multimedia platforms, which are used in order to interact, share and produce information. Despite this, it is known that students carry with them traditional education methodologies, where teachers are

responsible for bringing information to class.

It is for this reason that students do not have a personal research initiative on the topics that could be handled in class ⁴. Therefore, this study was carried out at a private university in the city of Metropolitan Lima, where virtual sessions have been one of the great challenges for students and teachers. The imminent adaptation of online learning in a pandemic and the implementation of virtual classes have forced teachers and students to adapt to the new 100% virtualized education, which brought about changes in learning and teaching strategies, even with new vocabulary, in addition to that the teacher has the role of a tutor.

The transformation of the traditional role played by the teacher as a reliable source of information becomes that of a counselor facing an infinity of sources that the student brings to class. In addition, the teacher also plays the role of counselor, developer of learning strategies, preparation of materials, technical function and knowledge of information and communication technologies (ICT). As for the student, he no longer only plays a passive learning role; but he becomes an apprentice; that is, it ceases to be just a receiver of information and becomes a constructor of concepts guided by the tutor ⁵.

Likewise, digital skills, in the academic field, have been positioned as fundamental tools in students due to the current reality. The profile that is required of a professional today is that of a student with a high level of ICT management to adapt to a technological world with adaptive needs in digital issues ⁶. Although students must work on these digital skills, it is the teachers who must teach the use of technology in a safe and critical way both at work, leisure and communication. The use of these tools will facilitate the student's autonomous access to the use of their investigative skills for the collection of necessary information and the development of online sessions, as well as a future job that is more suitable for the reality in which they live ⁷.

Digital competence

Digital competence is defined as the set of values, knowledge and attitudes to properly use technologies, including programs and the Internet, where it allows and enables the search for information in order to build knowledge ⁸. In addition, digital competence is considered a human right and goes beyond technical competence, assuming that it includes areas of competence such as information management, collaboration, ability to communicate and share information, creation of content and knowledge, ethics and responsibility, evaluation and problem solving and, finally, technique ⁹.

Digital competence requires knowledge related to the specific language, decoding and transfer guidelines. This leads to knowledge of the main computer applications. On the other hand, it leads us to the access to sources and processing of information about the people who assist in the digital world ¹⁰.

Dimensions of digital literacy

It is the result of the intersection of three dimensions as the technique in the digital civilization manifests itself to possess certain operational and technical skills so that ICTs are used both with learning and in daily tasks. Similarly, the cognitive dimension is grouped with the ability to think and evaluate digital information, since it is important to have the ability to evaluate and use software properly so that an activity that is presented to each individual can be carried out; Likewise, in this dimension with respect to digital literacy, it is required that each individual or student has knowledge using tools that fit their needs. Finally, between the socio-emotional and cognitive dimension of digital literacy, it is considered that the internet be used responsibly to be able to learn, socialize and communicate, since it must be taken into account that a purpose be established in the specific training with adequate instruments. of a diagnosis to evaluate according to the capacity of the students ⁸ .

It is stated that there are three levels of digital skills in the set of tools for digital skills, which is important to take into account to obtain knowledge for each individual: the basic level where the proper use of software is made to create documents or download Applications; continues with the intermediate level, allows people to use digital technology in a beneficial and meaningful way to be acquired through study programs such as online tutoring; finally, at the advanced level, in intermediate of the most recent digital skills, is about virtual reality-digital entrepreneurship, cybersecurity, among others ¹¹ .

Methodology

This research is based on a quantitative, non-experimental, descriptive, comparative and cross-sectional approach. The universe was made up of students from two private universities of the fifth cycle of the health career. The sample consisted of 466 students (75% women and 25% men) selected under an intentional non-probabilistic sampling. The inclusion criteria considered were the following: regular students who gave their consent/assent to participate in the study. Students from the first, second, third, fourth, sixth, seventh, eighth, ninth and tenth cycles who presented some chronic pathology at the time of the study or who filled out the instruments were incomplete. For data collection, a digital competence questionnaire for university students by Gutiérrez et al. (2017); validated instruments containing six dimensions; but, for the present study, only four dimensions were considered: technological literacy, search and treatment of information, digital citizenship.

Results

A descriptive analysis was carried out to find out the level of digital competence present in the participants of the two private universities. Previously, the general internal consistency of the questionnaire was calculated, yielding acceptable levels as results.

Table 1. Distribution of comparative data according to the digital skills variable

	private university 1	%	private university 2	%
Bass	89	38.2	22	9.4
Medium	140	60.1	168	72.1
Tall	4	1.7	43	18.5
Total	233	100	233	100

In table 1, it was observed that, of 233 students from private university 1, in terms of digital skills, 38.2% obtained a low level; 60.1%, medium level and 1.7%, high level and, in relation to private university 2, 9.4% obtained low level; 72.1%, medium level and 18.5%, high level.

Table 2 . Distribution of comparative data according to technological literacy

	private university 1	%	private university 2	%
Bass	100	42.9	30	12.9
Medium	117	50.2	151	64.8
Tall	16	6.9	52	22.3
Total	233	100	233	100

In table 2, it was observed that, of 233 students from private university 1, in terms of technological literacy, 42.9% obtained a low level; 50.2%, medium level and 6.9%, high level and, in relation to private university 2, 12.9% obtained low level; 64.8%, medium level and 22.3%, high level.

Table 3. Distribution of comparative data according to search and treatment of information

	private university 1	%	private university 2	%
Bass	93	39.9	Four. Five	19.3
Medium	121	51.9	138	59.2
Tall	19	8.2	fifty	21.5
Total	233	100	233	100

In table 3, it was observed that, of 233 students from private university 1, in terms of searching and processing information, 39.9% obtained a low level; 51.9%, medium level and 8.2%, high level and, in relation to private university 2, 19.3% obtained low level; 59.2%, medium level and 21.5%, high level.

Table 4. Distribution of comparative data according to digital citizenship

	private university 1	%	private university 2	%
Bass	97	41.6	22	9.4
Medium	105	45.1	110	47.2
Tall	31	13.3	101	43.3
Total	233	100	233	100

In table 4, it was observed that, of 233 students from private university 1, in terms of digital citizenship, 41.6% obtained a low level; 45.1%, medium level and 13.3%, high level and, in relation to private university 2, 9.4% obtained low level; 47.2%, medium level and 43.3%, high level.

Table 5. Contrasting of hypotheses of comparison of the level of digital competences in students of two private universities

ranks				
digital skills	Cluster	N	average range	sum of ranks
	Private University 1	233	169.17	39417.00
	private university 2	233	297.83	69394.00
	Total	466		

Test statistics ^{to}	
digital skills	
Mann-Whitney U	12156,000
W for Wilcoxon	39417,000
Z	-10,314
Asymptotic sig.(bilateral)	,000
a. Grouping Variable: Group	

Table 5 presents the results to contrast the general hypothesis: the p score = .000 < .05 establishing significant differences, so the null hypothesis is rejected. The surveys to the students of the private university 1 obtained scores, digital competences with an average = 169.17 unlike the students of the private university 2 that obtained results with an average = 297.83. Affirming that there are significant differences, with higher levels of digital skills in private university 2.

Discussion

The present study aimed to compare the digital competence of students from two private universities of the fifth cycle. The results show that the students show significant differences since they are at a medium level with 60.10% at university 1; university 2 (72.1) is at the low level with 38.20% university 1 and university 2 (9.4), they also have a high level of digital skills (1.7%) university 1 and in university 2 (18.5), being consistent with previous results described in the literature.

These findings are consistent with previous research where it was shown that digital skills, or also called digital literacy, is the ability to manage technology through different skills such as knowledge, attitude and strategies for training and putting it into practice in the study. In this sense, the purpose of this research is to demonstrate that digital skills are essential for university students to be competent during their academic training. In this regard, in the dimensions of information and information literacy, the student shows a desired achievement of the skills of navigation, inquiry and information filtering. In addition, within the digital competence area of communication and participation, the student proves

an achievement in the process of the competition that collaborates with the relationship that exists in the midst of digital technologies, sharing information and digital content, this is given by the participation in the media of digital channels, etiquette and digital identity management ¹² .

In the 21st century, digital competence is essential for the university student population ¹³ . It refers to the fact that they are combined elements of abilities, knowledge, skills that are mobilized to integrate technological knowledge ¹⁴ . The ACTIC model (Accreditation of Competences in Information and Communication Technologies) for the development of the citizen's digital competence must develop digital competences such as digital participation, use of the computer and the operating system, navigation in the digital universe; development of written communication; development of graphic, sound and moving image content, development of numerical content, development of data and, finally, display of information, these being necessary to achieve their academic goals ¹⁵ .

Regarding the results of the technological literacy dimension, the students were at a low level with 42.9%. A study on digital skills aimed to give some results of the informational dimension, so the mastery and acquisition of concepts and use of information in digital fields will be measured. Regarding the results; it was obtained that the majority of students still do not master the informational dimension optimally; but they are in the process of achieving it, while only one eighth of students (12.5%) dominate such dimension ¹⁶ .

There are significant differences in the level of digital citizenship in students from two private universities, since the level of significance calculated is $p < .05$ and the Mann Whitney U is 13086.500 . In this regard, a study was carried out on the digital skills of university students. The results showed that students over 30 years of age have access to a computer that can connect to the Internet. His favorite form of interaction is the phone, browsing and using e-mail every day, he basically uses technology. The conclusion is that these students did not share the desired characteristics of digital natives: the generation, dissemination and consumption of culture through the Internet ¹⁷ .

Conclusions

Digital competence turns out to be essential in the students' learning process because it allows facilitation access in adapting to new needs due to the development of an active, critical and realistic attitude towards technologies, valuing the strengths, weaknesses and respecting ethical principles in its use. It can be concluded that digital competence in the university environment is of utmost importance because, with the passing of time and technological progress, it is necessary to implement and complement the daily work of the university student with the use of different multimedia devices.

The adaptations to the new needs allow to form a positive, critical and realistic attitude towards technology, evaluating its strengths and weaknesses, respecting the ethical principles when using them, then the virtual world is living immersed

in technology where telephones are so necessary to live. , where even in the student sphere it has been united with digital tools and the process of digital learning competition. Technological changes have shown, throughout history, an exclusive and centralizing behavior, where only these benefits have been focused on certain sectors, generating the digital divide and structural inequalities; however, in the face of so many changes that he faces, the student must have the ability to use technology productively, managing to take advantage of it for a personal and educational purpose.

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