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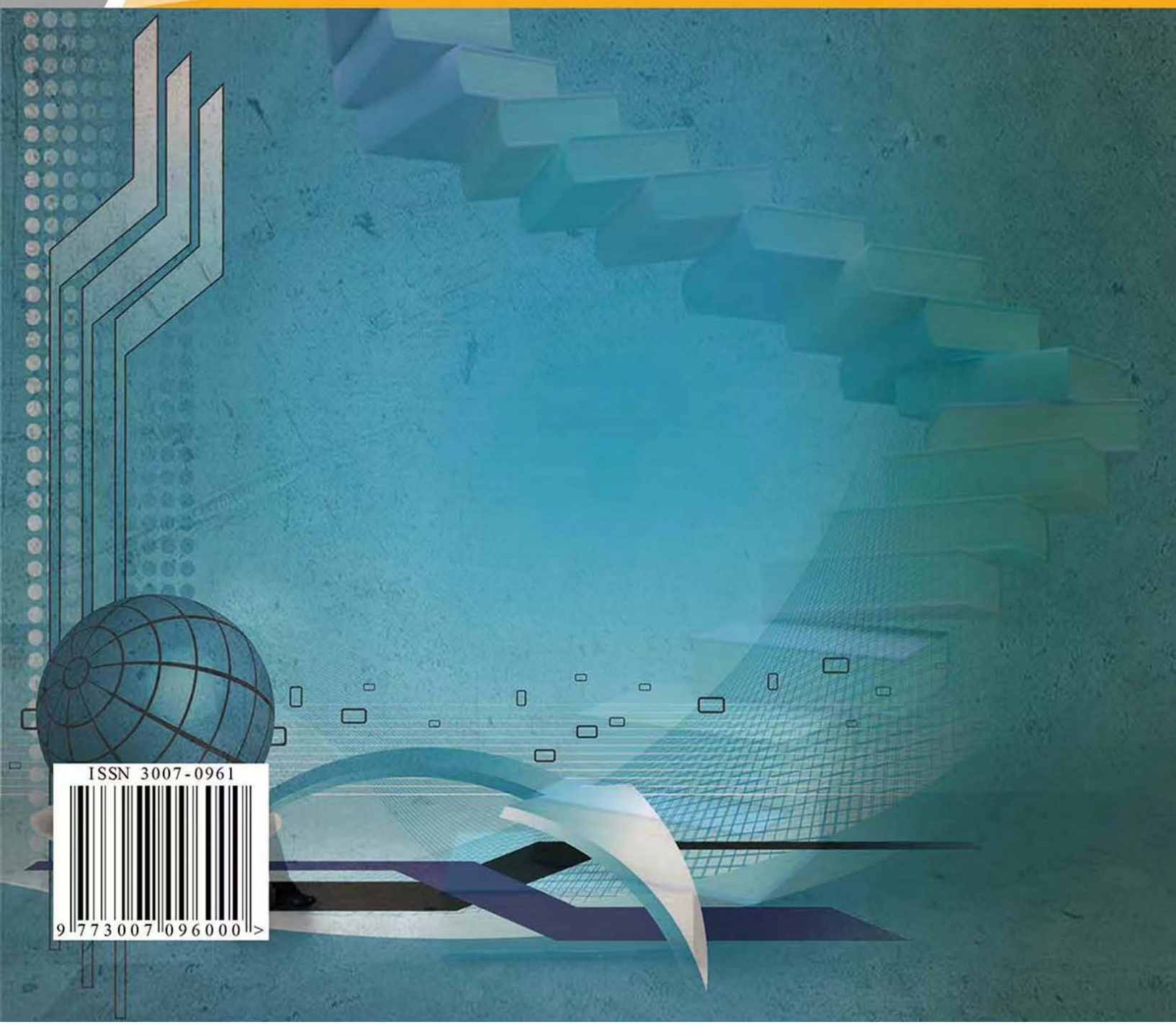

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The shift to online education: technology tools and skills

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ABSTRACT

The main objective of this article is to present part of the results of a research project on the Technological Skills for Learning (HTPA) of the English Language Teaching (LEI) students of the Facultad de Lenguas Campus Tuxtla (FLCT) of the Universidad Autónoma de Chiapas (UNACH). This study was carried out through the implementation of data collection techniques and the comparison of the degree of development of these techniques between two groups of different semesters. The project was carried out in two stages that spanned from November 2020 to June 2021 and from August to November 2021. Likewise, data collection techniques were designed and applied to know the HTPA of the students. The section of the study was mixed since the aim was to know the acquisition levels of the HTPA and present them as data that allow interpretations and the generation of future proposals for the required intervention, in addition to analyzing the change to online education due to Covid-19 and the technological tools and skills developed by the LEI students of the FLCT, UNACH.

Keyword: Online education; Technological skills; ICT

1. Introduction

The health crisis caused by the coronavirus (COVID-19) undoubtedly had an impact on all aspects of life. In principle, logically, in family, social and work life. It also had an impact on education. Education, as a social phenomenon, has allowed the formation of generations of citizens who, in turn, have had the task not only of applying their knowledge in their professional lives and thus contributing to the development of society and civilization, but also of training new generations of individuals.

The closing of schools or abrupt changes to the virtual or hybrid modality substantially modified educational practices and teachers had the responsibility, together with parents, to try to make the effects of school closures and the lack of valuable academic guidance in all institutions at different educational levels less harmful. According to the Covid-19 ECLAC-UNESCO report (2020), in the field of education, the

pandemic caused the massive closure of face-to-face classes in universities in 190 countries and affected about 1.2 billion students at all levels of education globally, as reported by the United Nations Educational, Scientific and Cultural Organization (UNESCO) (UN, 2020).

Thus, education gaps have widened in different countries and regions because they depend to a large extent on the situation in which each of them finds itself in relation to progress, achievements and specific problems. These gaps are most noticeable, according to UNESCO, in the results of education systems that have an "unequal distribution of teachers, in general, and of the best qualified teachers, in particular, to the detriment of countries and regions with lower incomes and rural areas, which tend to concentrate indigenous and migrant populations" (UN, 2020, p. 1).

Indeed, the Covid-19 pandemic has disrupted and changed lifestyles worldwide, including education. However, this pandemic has not impacted the different sectors of society in the same way, as there are a number of vulnerable groups: women, migrants, people with low resources, the elderly and people with various disabilities (Wenham and Morgan, 2020); which has led to an increase in the pre-existing gap between the privileges of society. All this has generated changes and new technological tools and resources have been implemented to go hand in hand with the new "automation" that has taken place during this pandemic (Hao, 2020).

In the educational context of the third decade of the 21st century, teachers are interested in the development of skills and abilities not only in their students (Betín et al, 2021; 2023), but also in their own teaching practices, by using teaching platforms and videoconferencing that, although they previously existed as information technologies, their role within teaching had not been developed to the maximum. This implies the need for continuous training of education professionals.

Online education is no longer an option, it has become a reality that will practically endure as a modality that was augmented by the health emergency. Academic life may have changed forever, at least in the way it deals with these crises, as well as from a technological evolutionary point of view.

A particular objective of our research was to determine how this pandemic has affected teachers and students. Teachers have had to prepare themselves at great speed and students as well, since those who are in a situation of limited financial resources have had to look for alternatives to acquire these technological resources or optimize those available in the family (PC, Laptop, Tablet or Smartphone).

On the other hand, the use of the Internet has become more than ever a necessity, almost firsthand, for families and educational institutions that do not have unlimited Internet access, nor infrastructure and technological equipment to receive or teach virtual, online or hybrid classes. Education in these modalities poses a different way of presenting and organizing course activities, which implies developing strategies for interaction with the group (between the teacher and the group and among the students or classmates). Thus, the need to develop technological skills for learning

(HTPA) has arisen.

All aspects of life were, if not harmed, at least disrupted by the crisis produced by the pandemic, which justifies the interest that this subject awakened in us as researchers. Education was one of the first to feel this sudden transformation in the way of teaching and in the way of solving problems. There were negative aspects, but there were also others that allowed the development of various strategies that might have been implemented, but in the long run and not with the same speed with which educational practices were innovated.

Reimers (2022) has noted that "although the net effect of the pandemic on education was negative, there were also some positive impacts. Importantly, educators developed a variety of innovations to maintain educational opportunities during the period when face-to-face education was suspended" (p. 4).

In this sense, it has resulted in a need in students to develop HTPAs, defined by the Ministry of Education of Chile (2013) as "The ability to solve information, communication and knowledge problems, as well as legal, social and ethical dilemmas in digital environment." (UNESCO, 2019, p. 5). These skills turn out to be necessary for the new and present generations affected as a result of Covid-19 and the technological transformation expected in the future workers of the world, including teachers as technological skills are one of the growing needs projected towards 2022 (Belachew and Surking, 2020).

It is these skills that allow the student to face the new reality where face-to-face classes are completely different and, in some cases, became non-existent. These skills served to overcome the challenges that the use of ICTs represented for the continuation of their studies and allowed, to a large extent, an awareness of the commitment to autonomous learning, realizing that a good part of the responsibility in the study and acquisition of knowledge depended on the effort made by the students themselves to fix their attention on: the exposure of content, taking notes or notes that would later allow the review or study of the information and the approach of all the new digital practices in which both the student and the teacher could be involved.

The situation of education in Mexico did not allow for a favorable climate to overcome these problems. On the one hand, due to the poverty of part of the student population, and on the other, due to the depreciation of life due to inflation, lack of employment and the economic crisis. It is worth mentioning that Mexico is one of the countries with the lowest mastery of technological skills, ranking 58th out of 60 countries evaluated with the Global Skills Index (Coursera, 2020).

According to the State Innovation Agenda carried out by Conacyt in 2020 and the latest data collected, only 16.8% of homes have a computer and only 10% of the population has Internet in their homes. With this, access to computers and internet in Chiapas homes are the lowest in the country, ranking 31st and 32nd respectively in relation to the rest of the states. Therefore, it was pertinent to know what technological resources the students had and the degree of development of their technological skills for learning, in order to have a more in-

depth vision of what the Covit-19 pandemic represented, to know how they faced the problems in order to reflect on the decisions to be made regarding the training of students from this health crisis, as well as where to direct the efforts and support by FLCT teachers in new areas of learning.

2. Method

The research process to be used was mixed. The quantitative one allowed the collection of numerical data and the qualitative one, the analysis of these data to know the situation and its variables in an unknown situation such as the one generated by Covid-19. This was carried out with data obtained through the application of data collection techniques, more specifically, a questionnaire on their computational situation (related to ICT) and another questionnaire regarding HTPA, in which two researchers also participated: Cuauhtémoc Lara Díaz and Jorge Ley García, who collaborated with this research.

The first ICT situation survey sought to know the technological situation of students and later the HTPA survey was designed and applied to know the dimensions of students' ICT skills.The first ICT situation survey sought to know the technological situation of students and later the HTPA survey was designed and applied to know the dimensions of students' ICT skills. The survey was designed based on the specific guidelines regarding technological skills for learning (HTPA) in its four dimensions: information, effective communication and collaboration, digital and technological coexistence, based on the proposal of the Ministry of Education of Chile (2013).

The survey was applied with the purpose of collecting empirical data that are not always available and is one of the main ways of obtaining quantitative data. However, it should be taken into account that depending on how it is written and the type of questions it has this can provide data with a very high level of objectivity (Cárdenas, 2018) and the data obtained are a good basis to be able to be interpreted also under a qualitative view together with other information provided by the students in some questions with open answers about their strategies for the development of skills.

These instruments were applied, first, at the beginning of the regular course to a group of recent entrants to the LEI, UNACH (2nd Semester) which had a semester of online education in the period August-December 2020. This information was contrasted with the questionnaires applied to a group in the middle of their teacher training (5th semester) of the LEI, who carried out most of their university training in person and only had a last semester of online education and at the end complementary questionnaires were applied to contrast their situation in the different moments of the application of the questionnaires compared to their condition at the beginning of the semester and to obtain information that was worked with the technique of content analysis.

The quantitative data were entered into the SPSS 22.0 program with the application of descriptive statistics, under a mathematical verification and comparison through graphs, and it was determined in which educational model there was greater skill in the use of technology and access to ICT and to what extent there was

acceptance and use of the online education method.

3. Results

This work was of mixed cut with an ethnographic approach. As a result of the application of the first survey whose main objective was to know the technological situation of students, it was revealed that access to technological resources and Internet access were among the most important factors to consider. This survey revealed that, unfortunately, 78.3% of 2nd semester students do not have a desktop computer at home. A similar value was found in the information obtained from 4th and 5th semester students, where 62.5% did not have this benefit either. However, it was found that almost the same percentage of students have laptops or cell phones, 60% and 81.3% respectively.

Regarding access to an Internet connection at home, 95.7% of 2nd semester students assured that they have the service at home, although it is important to consider that 50% have affirmed that it is somewhat unstable.

On the other hand, with regard to Internet access by 4th and 5th semester students, 100% of them stated that they had an Internet connection at home and 43.8% considered it somewhat unstable and 25% very unstable.

This may be due to the fact that in both groups more than 50% of the students have cable Internet, i.e., they do not have fiber optic Internet service. This may explain why students consider it somewhat or very unstable, since the volume of data required for the new visual and entertainment demands generated by the Internet may not be fully supported by this type of service.

4. Conclusions

The information presented in this document comprises part of the advances of the referred research project, which has allowed us to see more clearly the situation of the undergraduate students at the Faculty of Languages Tuxtla Campus of the UNACH, in relation to the technological skills for learning (HTPA), as well as the technological and Internet resources they have worked with, in order to continue their learning from home. A first approach showed the lack of a quality Internet service (without interruptions and with optimal speed), which is the main drawback to follow up their online education.

Undoubtedly, the Covid-19 pandemic has transformed all educational activities. Also important are all the works being developed on this subject in the different universities and research centers, which will surely provide new perspectives and possible solutions to the various problems presented and will help us to face and overcome any other possible critical situation that may arise.

Continuing with the activities that allow us to achieve the learning objectives is a constant, but the experience and information that we now have, from this Covid-19 pandemic, will help us to move forward and face contingencies in a better way. On the other hand, knowing what technological tools students have and what are their abilities to use them will undoubtedly be a very important reference in the design of study plans and programs.

University life will increasingly tend towards digital environments and the use of new ICTs, as well as the development of autonomy in learning. Creativity and innovation will continue to transform teaching practices, based on the imperatives and crises that arise. The requirements and new technological forms will be increasingly important in these new educational modalities that are and will continue to modify our practices.

The results of the instruments applied show the strengths and weaknesses of the university study group in living the present critical situation as a result of the Covid-19 pandemic and the way in which they are developing technological skills for learning (HTPA).

It is believed that the final results of this research may be valuable and useful in the curriculum redesign of the P.E. Educational Program, as well as of interest to other teachers in the design and restructuring of their undergraduate and graduate curricula in the various institutions of higher education where they work.

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