The impact of COVID-19 in higher education: case study students of the Tecnológico de Estudios de Villa Guerrero bachelor's degree in business administration

El impacto del COVID-19 en la educación superior: caso de estudio alumnos del Tecnológico de Estudios de Villa Guerrero licenciatura en administración

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Abstract

The COVID-19 pandemic led to the temporary closure of institutions from elementary to higher education, which implied that students had to learn from home through digital platforms, this made education migrate to these channels, channels that not all students can easily access, so this work aims to expose the different academic situations that university students are going through in the midst of this pandemic in order to continue their education. Therefore, in order to carry out this study, a quantitative methodology was used due to the use of tools for the collection and analysis of statistical data. All the above to show that the students of the Tecnológico de Estudios superiores de Villa Guerrero of the Administration career do not have the digital, technological and even economic means to continue with their studies and adapt to this new learning modality.

Resumen

La pandemia por COVID-19 llevo al cierre temporal de las instituciones desde nivel básico hasta superior, lo que implico que los alumnos tuvieran que aprender desde casa por medio de plataformas digitales, esto hizo que la educación emigrara a esos canales, canales a los que no todos los alumnos fácilmente pueden acceder, por lo que dicho trabajo pretende exponer las diferentes situaciones académicas por las que los estudiantes universitarios están atravesando en medio de esta pandemia para poder seguir con su educación. Por lo cual, para llevar a cabo este estudio se utilizó una metodología de corte cuantitativo debido que se utilizaron herramientas para la recolección y análisis de datos estadísticas. Todo lo anterior para mostrar que los alumnos del Tecnológico de Estudios superiores de Villa Guerrero de la carrera de Administración no cuentan con los medios digitales, tecnológicos e inclusive económicos para dar continuidad con sus estudios y adaptarse a esta nueva modalidad de aprendizaje.

Higher Education, COVID-19, Management, Administration

Educación Superior, COVID-19, Administración

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Introduction

In the current scenario in which the whole world finds itself due to the effects caused by the SARS-COV2 pandemic (CORONAVIRUS OR COVID-19) has reflected the fragility of the universal management systems in industry, health, trade, economy, investments, education, policies and more elements of society, for this reason we will analyze in depth a system of high social impact, "education in times of coronavirus", where millions of students around the world have been affected by the drastic change of the educational model.

We must not forget that the ability to transform determines the effectiveness of an education system for its transformation and so, according to recent research, in first world countries it was observed that the effects have not been collateral, since their systems have the ability to evolve and adapt to drastic and sudden changes, however, in Mexico according to studies conducted by INEGI (2020), only 59.5% of the student population has been able to migrate to digital platforms.

The COVID-19 information search will be conducted with the aim of deepening the social impact that is generating, the negative consequences of school closures, among them highlighting that learning is interrupted and inequality is embodied when accessing digital education systems and increase dropout rates.

In addition, we will analyze the change that was generated in students by having to adapt to work under different digital platforms, since it is considered that we were not ready for a change as drastic as this, it is worth mentioning that this change has generated in students much despair to the extent of opting to temporarily leave school.

Literature Review

History of COVID-19

The detection and spread of any new respiratory pathogen is accompanied by uncertainty about its main epidemiological, clinical and virological characteristics and, in particular, its ability to spread in the human population and its virulence (the severity of cases). Such is the case of Coronavirus disease 2019 (COVID-19), first detected in Wuhan City, China, in December 2019.

Symptoms of the disease can vary greatly. Some people have no symptoms at all, while others become so ill that they eventually need mechanical assistance to breathe. (WHO, 2020)

But we must not forget that this virus is contagious, and the first indication by the authorities was to declare quarantine to avoid contagion, so a growing number of educational institutions around the world closed institutions and entire campuses as a precautionary measure against this pandemic that transformed the way they worked. (Tecnológico de Monterrey, 2020)

And like the economies and lives of millions of people around the world, the coronavirus crisis drastically changed higher education. Universities closed, classes were suspended and taught online. Academic conferences were also cancelled. People were even asked not to travel to countries affected by the pandemic and to avoid international travel altogether, and the immediate implications and inconvenience are expected to increase as the coronavirus spreads to more countries and affects more people.

What will be the implications of the coronavirus crisis for higher education in the medium and long term?

There are those who predict an unintended positive impact on this level of education, in particular the increase of online teaching and learning and a more diverse international student recruitment policy, moving away from relying so heavily on countries like China. Because the traditional trends in international higher education will indeed remain and the field of higher education will eventually return to its normal routines. However, perhaps the return will bring other problems such as less financial stability, which in fact has already been occurring in several countries (Altbach, 2020). (Altbach, 2020).

Challenges facing students in Higher Education

According to data from the National Institute for the Evaluation of Education (INEE), in Mexico, this measure caused more than 30 million students in elementary, middle and high school to suspend classes for months to shelter at home. In this scenario, the virus has not only highlighted the shortcomings of our education system, which depends too much on a traditional system of face-to-face teaching, but also because of the inequality in access to technology, because in times of quarantine, one of the tools to keep afloat the country's education system could be digital or distance education.

Connectivity issues

According to the latest National Survey on Availability and Use of Information Technologies in Households (ENDUTIH), in Mexico there are 18.3 million households that have Internet through fixed or mobile connection, which represents 52.9% of the national total.

The geographic analysis indicates that Internet use is an urban phenomenon, since 73.1% of the total urban population are users of this service. This contrasts with 40.6% of the connected population in rural areas.

These figures represent a challenge for virtual or distance education to be successful in a country where not all the population has real access to connectivity.

In addition, schools would have to implement methodologies so that both students and teachers have learning skills outside the classroom.

New work confrontations for teachers

In an interview for El Economista (2020), Joaquín Guerra Achem, vice-rector for Academic and Educational Innovation of the Tecnológico de Monterrey, acknowledged that in general the country's educational institutions were not prepared for such a rapid change in teaching, although there were some that had to face major challenges to continue with their distance learning processes, coupled with the adaptation that teachers had to make in their classes to continue.

"This pandemic caught us all by surprise. Those of us who have been working with distance education for the longest time were able to mobilize quickly; however, the amount of things we had to change represented a great deal of work," said the Vice Rector for Academic and Educational Innovation of the Tec de Monterrey.

Methodology

To test the hypothesis of the present work, which is:

- COVID-19 has created challenges for students with new modalities such as on-line education, however, not all the student body has the resources to continue their education.

A quantitative cross-sectional descriptive research was conducted, because descriptive and cross-sectional research methods are adaptable to different types of settings and different types of contexts and are a means to understand the issues we have raised.

Information was collected using the survey technique, which was applied through Google Forms to students of the bachelor's degree in administration of the Tecnológico de Estudios Superiores de Villa Guerrero.

The survey design consists of the following sections:

- Respondent identification data.

- Objective of the research.

- Instructions.

- Information requested.

- Classification data.

It is made up of:

- 9 dichotomous closed questions.

- 4 closed multiple choice questions.

- 5 Likert scale questions.

This is based on a survey used by the University of Veracruz to determine pandemic education in that state.

For the application of these, the sample was determined by means of an on-line statistical calculator, with a population of 482 students in the Bachelor of Administration in semester 2020-A, with a confidence level of 90% and a margin of error of 5% giving us as a result that 175 students should be surveyed.

Once the responses were obtained we proceeded to analyze the data using SPSS statistical software, which is used for a wide range of statistical analyses, such as descriptive statistics (e.g., means, frequencies), bivariate statistics (e.g., analysis of variance, t-test), regression, factor analysis, and graphical representation of the data. (Question Pro, 2020).

Descriptive analysis (frequency tables and graphs) and a correlational analysis where the Pearson correlation coefficient was used.

Results

Next, the results obtained from the SPSS software are presented, by means of an analysis of frequency tables and then with a correlation analysis where the Pearson correlation coefficient was used, which indicates that; if there is a perfect positive correlation r=1. The index indicates a total dependence between the two variables called direct relationship: when one of them increases, the other also increases in constant proportion.

But if $0 < r < 1$ then there is a positive correlation and if $r = 0$ then there is no linear relationship but this does not necessarily imply that the variables are independent and if $-1 < r < 0$, there is a negative correlation and finally if r=-1, there is a perfect negative correlation. The index indicates a total dependence between the two variables called inverse relationship: when one of them increases, the other decreases in constant proportion. (Vinuesa, 2016)

Descriptive statistics

Of the 18 questions, the most representative of our research topic were chosen and will be explained below:

In the surveyed population it was observed that most of the students are women with 67.3%, equivalent to 72 female students and 32.7% men, equivalent to 36 men, giving a total of 108 students in all, of which 63.3% of the students do have updated equipment to carry out virtual learning, while 37.4% do not.

Do I have access to fixed Internet to carry out virtual learning?					
		Frequency	Percentage	Percentage Valid	Percentage Cumulative
Valid	Yes	68	63.0	63.0	63.0
	No	40	37.0	37.0	100.0
	Total	108	100.0	100.0	

Table 1 Do I have up-to-date computer equipment to carry out e-learning?
Source: Own Elaboration

Do I have access to a fixed Internet connection to carry out the virtual learning?				
	Frequency	Percentage	Percentage Valid	Percentage Cumulative
Yes	60	55.6	55.6	55.6
No	48	44.4	44.4	100.0
Total	108	100.0	100.0	

Table 2 Do I have access to fixed Internet to carry out e-learning?
Source: Own Elaboration

As it can be observed in the previous frequency table, the students confirm with 56.1% that they have fixed internet, on the contrary 43.9% of the students do not have fixed internet that helps them to carry out their learning virtually.

Does the educational institution have the appropriate educational platforms to favor the teaching-learning processes?				
	Frequency	Percentage	Percentage Valid	Percentage Cumulative
Yes	93	86.1	86.1	86.1
No	15	13.9	13.9	100.0
Total	108	100.0	100.0	

Table 3 Does the educational institution have adequate educational platforms to favor the teaching-learning processes?
Source: Own elaboration

A minimal part of the sample mentions that the educational institution (TESVG) does not have adequate platforms to favor the teaching-learning processes, specifically 13.1%, the other 86.9% confirms that it does have the appropriate platforms.

It is positive to note that most of the respondents have the possibility of learning under the virtual modality, with a percentage of 63.6% in favor, while a very small part mentioned that they do not have the possibility of learning under this new system, with an average of 39%.

Did the educational authorities carry out a diagnosis to identify whether students have the possibility of learning under the virtual modality?				
	Frequency	Percentage	Percentage Valid	Percentage Cumulative
Yes	68	63.0	63.0	63.0
No	40	37.0	37.0	100.0
Total	108	100.0	100.0	

Table 4 Did the educational authorities carry out a diagnosis to identify if the students have the possibility of learning under the virtual modality?
Source: Own Elaboration

Do you consider that with the virtual teaching method you have obtained knowledge that will allow you to be a quality professional?				
	Frequency	Percentage	Percentage Valid	Percentage Cumulative
Agreed.	11	10.2	10.2	10.2
Somewhat	59	54.6	54.6	64.8
Disagree	29	26.9	26.9	91.7
I do not learn anything at all	9	8.3	8.3	100.0
Total	108	100.0	100.0	

Table 5 Do you consider that with the virtual teaching method you have obtained knowledge that will allow you to be a quality professional?
Source: Own Elaboration

According to the results obtained, it can be seen that only 10.2% of the students consider that they are sure that they have a quality education, a very small part of the sample argues that they do not learn anything at all, while 27% of the students confirm that they do not agree.

According to what is observed in the table, the results show that 43.9% are making a high effort and more work, others argue that the dedication is average with 39.3%, 11.2% say it is low, while the remaining percentage of 5.6% say it is null.

The virtual education modality represents more work, effort and dedication				
	Frequency	Percentage	Percentage Valid	Percentage Cumulative
Null	7	6.5	6.5	6.5
Low	12	11.1	11.1	17.6
Medium	42	38.9	38.9	56.5
High	47	43.5	43.5	100.0
Total	108	100.0	100.0	

Table 6 The virtual education modality represents more work, effort, and dedication
Source: Own Elaboration

It is of vital importance to know with which tool the students interact the most and above all with which one they have to carry out their education, obtaining that 62.96% of the students have a cellular device, 36.11% have a laptop or pc, and only 0.93% have a tablet.

Has the quarantine confinement affected me emotionally?				
	Frequency	Percentage	Percentage Valid	Percentage Cumulative
Null	13	12.0	12.0	12.0
Low	33	30.6	30.6	42.6
Half	40	37.0	37.0	79.6
High	22	20.4	20.4	100.0
Total	108	100.0	100.0	

Table 7 Has the quarantine confinement affected me emotionally?
Source: Own Elaboration

The change in lifestyle and the confinement of all people and that for reasons of this study, we are interested in knowing if they have been affected emotionally by the mandatory quarantine imposed by the federal government by covid-19, where it was found that 37.04% have been affected moderately by the confinement, 30.56% have been affected at a low level, 20.37% have been affected very much by the confinement and 12.04% have not been affected at all.

It is important to know the emotional effects on young students at the higher level, since these effects have an impact on their professional development.

Pearson's Correlation

According to the results of the correlation table, the hypothesis is accepted since the questions Do you consider that with the virtual form of teaching you have obtained knowledge that allows you to be a quality professional? and Does the virtual form of education represent more work, effort and dedication? show a negative correlation index value of -.110, however considering the interpretation of descriptive graphs the mentioned questions that talk about the level of learning, performance and effort that students bring to their academic responsibilities, 54.63% of respondents say that the new learning mode requires more effort to get a good quality learning.

The weightings show that students reject the idea of becoming self-taught, according to the results of the correlation between the variables Do you use general information search engines (Google, Yahoo, Bing, Ask, among others) in support of the teaching-learning processes under the virtual modality? and Do I use collections of scientific academic journals that provide quality digital information (SCOPUS, SCIELO, JCR, REDALYC) in support of the teaching-learning processes under the virtual modality? which show to be negative by a valuation of -.010, however when compared with the variable of Do I use cloud storage platforms (Dropbox, Google Drive, Cloud, among others) in support of the learning process under the virtual modality? with the previous variables, there are positive results in both cases, so it can be deduced that students request information mainly through the internet and make use of magazines and physical media information in a low percentage, using and storing the requested information only at the time it is required and not to be used in the near future.

On the other hand, the negative correlations again between questions 12.- Does the modality of virtual education represent more work, effort and dedication? and 13.- What tools (devices) do I have to carry out distance higher education? With a value of -.104 show that the students require a little more effort to carry out the monitoring of distance education, as well as it also implies an increase in costs little noticeable or very low, however it can be perceived that not all students have the necessary resources to cope with the new mode of distance education as 63% of respondents only have a cell phone to stay active for the activities that are requested, given the hypotheses and results found we can say that 57. 41% of students feel stressed by distance education.41% of the students feel stressed and pressured by the new modality of distance work.

Conclusions

As we have seen in recent days the CORONAVIRUS, became an endemic disease that affects the proper functioning of education in Mexico and the expected learning at all levels of education because it went from classroom learning to online learning, which caused students to experience various emotions.

The number of people who present emotions that are not suitable for educational development is very high, so it can be assumed that the strategy, tools and in general the distance education developed by the TESVG, is not resolute nor does it present educational quality in the learners.

And it could be perceived that not all students have the necessary resources to cope with the new distance learning mode because 63% of respondents only have a cell phone to stay active for the activities that are requested and it is important to analyze the above point because the applications that will be the direct means of communication, should have a more accurate version and better functionality for cell phone devices as students have more with this item.

So given the hypotheses and results found we can say that 57.41% of the students feel stressed and pressured by the new modality of distance work, which causes dissertation and null learning on their part.

Annexes

Survey applied

Technological College of Superior Studies of Villa Guerrero

Bachelor's Degree in Administration

Research Project: The Impact of COVID-19 in Higher Education: Case Study students of the Tecnológico de Estudios de Villa Guerrero Bachelor's Degree in Administration.

Objective: To gather information to know the impact of the COVID-19 contingency on the students of the TESVG Administration course.

Directions: Read the question carefully and choose the answer that most identifies you.

1. Do I have updated computer equipment to carry out the virtual learning?

    a) Yes b) No

2. Do I have electronic devices (printer, scanner, camera, among others) to carry out the virtual learning process?

a) Yes b) No

3. Do I have access to fixed Internet to carry out the virtual learning?

    a) Yes b) No

4. In case you do not have access to fixed Internet, what alternatives do you take to carry out your school activities at a distance?

    a) I go to a cyber.
    b) I borrow the equipment from a family member or friend.
    c) A colleague sent it for me.
    d) Another.

5. Does the educational institution have the appropriate educational platforms to favour the teaching-learning processes?

    a) Yes b) No

6. Prior to the contingency, did the educational institution carry out training on the platforms to be used?

    a) Yes b) No

7. Did the educational authorities carry out a diagnosis to identify if the students have the possibility of learning under the virtual modality?

    a) Yes b) No

8. Do you consider that with the virtual teaching method you have obtained knowledge that will allow you to be a quality professional?

    a) All right.
    b) A little bit.
    c) Disagree.
    d) I don't learn anything at all.

9. Do you use general information search engines (Google, Yahoo, Bing, Ask, among others) to support the teaching-learning processes in the virtual modality?

    a) Yes b) No

10. Do I use collections of scientific academic journals that provide quality digital information (SCOPUS, SCIELO, JCR, REDALYC) in support of the teaching-learning processes under the virtual modality?

    a) Null
    b) Under
    c) Middle
    d) High

11. Do I use cloud storage platforms (Dropbox, Google Drive, Cloud, among others) to support the learning process under the virtual modality?

    a) Yes b) No

12. Does the virtual education modality represent more work, effort and dedication?

    a) Null.
    b) Under.
    c) Middle.
    d) High.

13. What tools (devices) do I have to carry out distance higher education?

    a) Cell phone.
    b) Laptop or PC.
    c) Tablet.

14. Does it represent additional expenses to my family to carry out the education under the virtual modality?

    a) Null.
    b) Under.
    c) Middle.
    d) High.

15. Do I have medical insurance from the academic institution, so that in case I get infected with the COVID-19 virus I can be treated?

    a) Yes b) No

16. Am I aware of the protocols established by the educational and health authorities in order to be treated in case I catch the COVID-19 virus?

a) Yes b) No

17. Ha the quarantine confinement established by the ealth authorities affected me emotionally?

    a) Null.
    b) Under.
    c) Middle.
    d) High.

18. What is your emotional state according to the previous question?

    a) Sad.
    b) Happy.
    c) Stressed.
    d) Pressed.
    e) Frustrated.
    f) Animoso.

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