

# Scientific Journal of Applied Social and Clinical Science

## TECHNOLOGICAL BARRIERS IN VIRTUAL LEARNING FACING THE PANDEMIC IN MARKETING STUDENTS OF: `` UNIVERSIDAD DE SONORA ``

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## INTRODUCTION

The habits of behavior and interaction changed in the members of a family, parents adapted to a way of earning income, some companies had staff cuts and reduced their workforce, others had low income because employees were reduced. hours of work and, therefore, their income decreased.

Changing to digital form is an unprecedented fact, because countries had to adapt to this methodology, although it is not new, it has already been applied for decades, but for all institutions to function in this modality, it has never happened. With this leap to digital mode, many processes were simplified and other forms merged to stay.

The ``Universidad de Sonora`` has been approaching the virtual modality for years, teachers are trained to use platforms; In advance, the ``Universidad de Sonora`` already had a platform for all students and teachers to be able to carry out classes remotely.

## THE PROBLEM OF VIRTUAL CLASSES IN ISOLATION

Given the confinement due to the Covid-19 Pandemic in Hermosillo in March 2020, its inhabitants took shelter, including businesses and schools. For students, having many hours of study in a single space and in a single ergonomic posture, the time spent looking at a monitor, the reduction in physical activity, among others, caused consequences such as depression, anxiety and eating disorders, among others. others.

This study aims to describe the deficiencies and problems when carrying out virtual classes, to know what the options of young people were when being in a virtual system, to know about the effectiveness of the virtual and in-person modality and as well as the solutions given to the deficiencies in virtual classes.

## THEORETICAL FRAMEWORK

Current generations such as Millennials or Generation Z, the Crystal Generation (the children of Generations streaming, mobile applications and virtual reality mean that they have a certain early acceptance of isolation conditions due to the pandemic.

Hyperconnectivity in recent generations is a necessity, they want to always be informed and by being connected to several devices at the same time they follow digital trends at the moment. The streaming service offers the security of using when, how and where you want to see that content. With mobile devices, social networks, videos, as well as basic aspects are at hand.

Entrepreneurship and preparation is an important point to highlight with the most current generations, in some way it is to be expected, economies are globalizing, the level of studies in the world in general is becoming standardized, added that technology allows us to be communicated everywhere. moment and be informed of everything that happens in any region, therefore young people have interests in creating new markets, creating businesses that meet new needs or modified needs.

Coupled with new businesses, but with the problems faced in the pandemic, the new generations have needs to be met, such as doing work flexibly, working from home, recognition of their work by functions and not by seniority are some requests made by new talents.

Given this, globalized companies make changes to work demands and join in creating new ways of working and forms of evaluation both for their way of working and achievements achieved.

## DISEASES OF THE 'MILLENNIAL'

Guillen explains that vision problems, hand and mind fatigue are some of the consequences of using mobile devices, young people have addictions to technology and consequently new evils. There are at least three and up to 6 hours of daily use of digital content, according to studies carried out by Nominalia and TNS Global, portals that carry out market research, including digital.

Guillen et al, states that the Millennial generation has an interest among which is keeping the greatest number of photographs, since memories are an important point, another factor is that the lack of modesty conditions it in the new generations, causing them to exhibit private life, 'serfis' are part of the culture that is currently lived and part of the socioeconomic system, important points are aesthetics, leisure and novelty as well as beauty and fun; being a pathology that young people experience as a consequence of a more globalized world.

Next, Guillen mentions the most common pathologies:

Nomophobia, referring to the fear, anguish and obsession that young people suffer from not having a mobile device or internet connection within their reach, obsession with hyperconnectivity, spending up to seven hours in front of the mobile phone.

Permanent consumerism, novelty and sharing experiences called 'When What Where, Want' mentioned this way since it is related to immediate purchases making hasty decisions.

Visual fatigue, vision problems due to excessive hours spent by Internet users in front of device screens, fatigue of fingers, wrists and hands are part of the pathology of using the virtual keyboard.

Dysmitia refers to depression, but in a milder but chronic form, with worsening moods.

Fan phenomenon, the unhealthy idealization that young people have towards others, platforms like Tik Tok, the same Facebook with more followers praises people who stand out from nowhere with a certain identity, becoming 'Influencer' in their lifestyle. At the same time, there is the phenomenon of 'haters', the counterpart of fans where they try to highlight the non-positive characteristics of people, products, companies and government.

## CONSEQUENCES ON EDUCATION DUE TO COVID-19

World Bank Group focused on helping to improve education, published a study focused on knowing the impact of education and how the governments of different countries must respond. This study was carried out in May 2020, generally. Regarding the crisis in education, they are taken into account in several areas:

In the case of school closures, it affects two areas; The first are the directive educational costs: interruption of learning, greater learning inequity and reduced attachment to school. Regarding the impacts on people's health and safety, the nutritional situation of students is worsened, mental health is deteriorating, and students' increased vulnerability is highlighted.

The economic crisis has a deficiency in educational demand, where school dropouts increase with an emphasis on people with fewer resources, an increase in child labor, child marriage and an increase in transactional sex, as well as a reduction in parental investment in the educational aspect. Another area is the educational offer, in this aspect government spending on education is reduced, the quality of education decreases, there is less quality in teaching and the closure of private schools.

The long-term costs are relative to the increase in learning poverty, reduction in

human capital, increase in poverty due to school dropouts, greater inequality, increase in social discontent, and the cycle of generational poverty and human capital is reinforced.

To stop the damage and rebuild the damage, policies were created and grouped into three stages: The first is to confront the pandemic, it was planned to keep schools closed to protect health, safety and nutrition, try to avoid the loss of learning and take advantage of tertiary education (vocational or higher). The second stage is to manage continuity, the process of opening the centers to avoid dropouts, protect health and safety in schools, prepare for staggered and partial reopenings, prepare teachers to evaluate losses and reduce learning deficiencies, provide financing for recover what is necessary for vulnerable students. The third stage consists of improving and accelerating the learning process, in this section it is to take advantage of distance learning, teach at the correct level, monitor students at risk to avoid school dropouts, focus on rebuilding educational systems, while protect and improve education financing.

Planning for the future must begin, the opportunities at each stage must be taken advantage of to do things better, learn from innovations and emergency processes and this way adapt and implement the most effective solutions, this causes us to be more agile, resilient and efficient focused on recovery in real growth. Reconstruction to be better.

## **ONLINE EDUCATION ON ELECTRONIC DEVICES IN MEXICO**

The iabmexico.com portal carried out a study in 2019 to understand the use of electronic devices in Mexico while also knowing what happens with online education.

The general conclusions show that Internet users are less involved socially and digitally, likewise, 4 out of 10 people are in the passive

stage with the willingness to take an online course.

The average is low in terms of 'awareness', the awareness or sensitization of what is happening around in the digital environment, in the case of offers there is less and less interest.

In the case of students, they are interested in courses through mobile devices, with preference to using Facebook Messenger as follow-up. The prestige of the platform where they are used and neither is the language.

In the case of socioeconomic levels, the highest, there is a tendency to offer offers through recommendations on digital platforms and social networks, while at lower levels, advertising is positioned through printed matter such as magazines and brochures. Business entrepreneurship stands out at the middle level.

Medium and low socioeconomic levels are interested in bachelor's and master's degrees, while at a high level, they are interested in doctorates and MBAs.

Interest in course platforms is above studies of recorded classes and books. 70% of Internet users are more interested in advertising language courses than in conventional media, the most searched for on the Internet are programming, computing and web development. The reason for taking an online course is that they may have the opportunity to have a promotion in their jobs.

## **METHODOLOGY**

This research is descriptive since it tries to know the behavior of young people in virtual learning and their habits. The study was carried out in two parts, the first was exploratory or qualitative where, through the groups that were made for classes, they were formed as 'focus groups', exposing the complaints and opinions on the main problems they faced, and in the second part, a measurement instrument

by Forms platform to see the general opinion of the students.

**Mixed approach:** Qualitative techniques will be carried out with virtual focus groups and the information will be reinforced with a quantitative technique with a measurement instrument.

**Cross Section:** since it will only be generated once.

**Limit of the research:** The reagents of students only from the Marketing degree at ``Universidad de Sonora`` will be evaluated.

**Non-experimental design:** since only the phenomenon and its different consequences are observed

**Population:** 566 current students of the Unison Marketing program

**Sample:** for a population of 566 students with 95% reliability and 3% precision, there is a sample of: 152 items

**Method:** Survey

**Technique:** Sampling by conglomerate strata

Instrument: Questionnaire

Simple Probabilistic Sampling: The instrument will be applied to students per semester.

Quantitative method: The survey

The formula to determine the sample size of a finite population is described below (www.bioestadistica.com.mx):

$$n = \frac{N * Z\alpha^2 * p * q}{d^2 * (N - 1) + Z\alpha^2 * p * q}$$

Where:

N = Total population

Zα = 1.96 squared (if security is 95%)

p = expected proportion (in this case: 5% = 0.05)

q = 1 - p (in this case: 1-0.05 = 0.95)

d = precision (in this research 3%)

n = finite size sample size.

To determine the sample size for this study with respect to the quantitative study, that is, the number of surveys to be applied is detailed

below:

N= 566 students of the Unison Marketing program in the central area.

$$n = \frac{566 * 1.96^2 * 0.05 * 0.95}{0.03^2 * (566 - 1) + 1.96^2 * 0.05 * 0.95} = \frac{103.2814}{0.690976} =$$

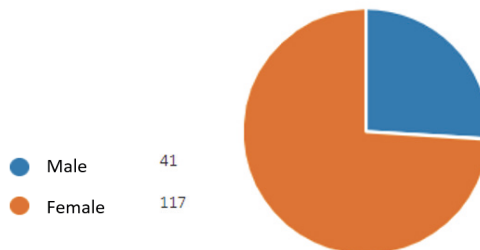
149 surveys to be applied

## ANALYSIS OF RESULTS

Through a survey carried out on the Microcroft Forms platform, 158 items were applied to students who are in the age range between 18 and 28 years of age in the Marketing program at ``Universidad de Sonora``, central zone.

The students are in the range of 18 to 28 years old, the most frequent ages are 19 and 20 years old. The highest percentage of students who took the survey are in their fourth semester.

### THE GENDER PROPORTION OF THE PEOPLE WAS AS FOLLOWS:

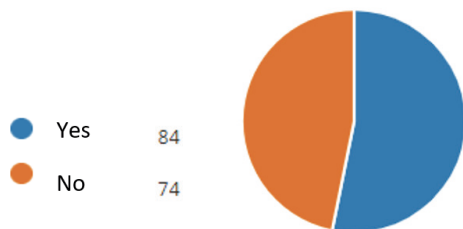


Graph 1. Gender

Source: own author

A total of 75% of the respondents are women and 25% are men, highlighting that the female gender is 3 times more than the male gender, prevailing that for women the marketing career is most important.

## BE PREPARED FOR VIRTUAL LEARNING



Graph 2. Virtual learning

Source: own author

Only 53% responded yes to being prepared versus 47% who do not feel prepared.

## PROBLEMS THAT STUDENTS HAD AT THE BEGINNING OF THE PANDEMIC IN (APRIL 2020)

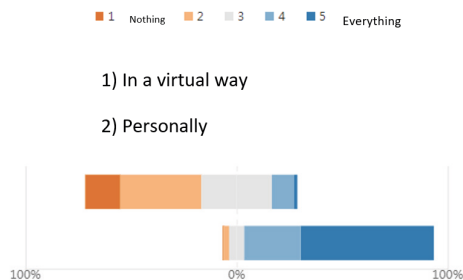
The main deficiencies that emerged in the beginning of using virtual platforms were: Deficiencies with the internet, problems with adequate spaces at home, of the sections with the least problems are electricity, computer equipment, in the case of general problems but Not so prominent are the use of platforms, content exposure.

## CURRENT PROBLEMS THAT STUDENTS HAVE WHEN TAKING VIRTUAL CLASSES (MARCH 2021)

After a year of using platforms, where efforts were made to change aspects that imply their application, adaptation at home prevails, deficiencies on the Internet continue to be among the most important to combat, the least problematic are computer equipment, adaptability to the use of platforms, electricity, are some of the safest services.

The conclusion of what arose at the beginning with the use of platforms to this day remains similar, just not as strong, the problems decreased with intensity, but the same ones prevail.

## EFFECTIVENESS OF VIRTUAL AND IN-PERSON MODALITY

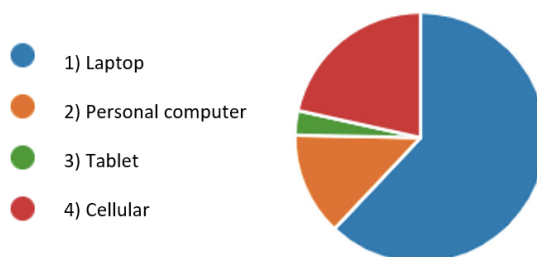


Graph 5. Effectiveness of virtual and in-person mode

Source: own author

The in-person modality to carry out classes continues to be preferred, according to the students' point of view. 67% responded that they agree and strongly agree with the in-person format.

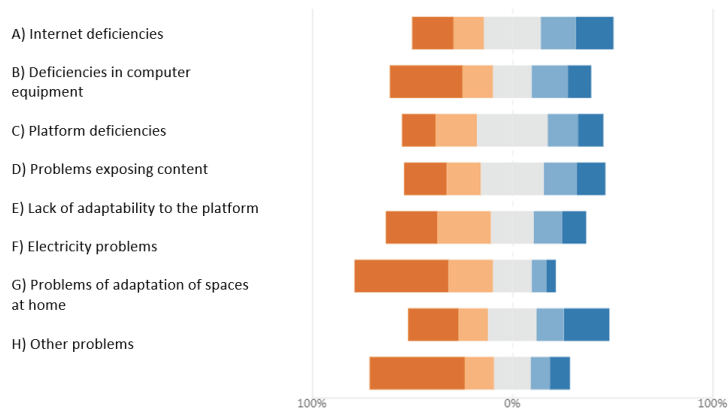
## MOST USED DEVICES FOR ONLINE CLASSES



Graph 6. Most used devices

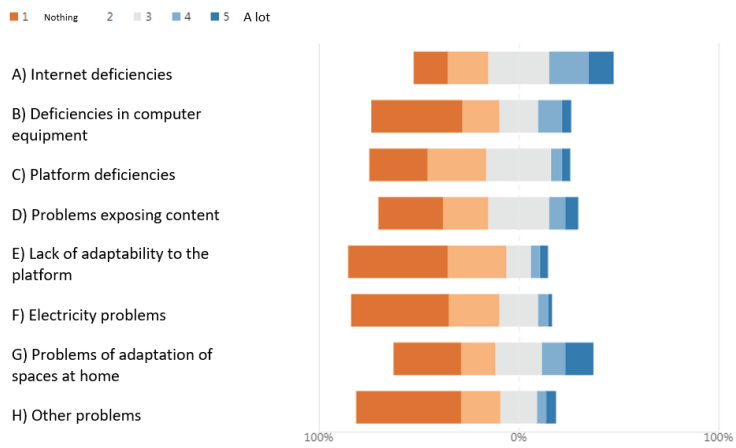
Source: own author

The most used device to carry out online classes is the laptop, a complete device as it has a keyboard, large screen and everything necessary to be used anywhere for convenience. The second most used is the cell phone, which is a revealing device of the current generations, being a mobile device but it does not help because of its small screen and it is the smallest of all the devices, even so, it is the second most used, it could be think that the personal computer would be the first or second option, in this case and for



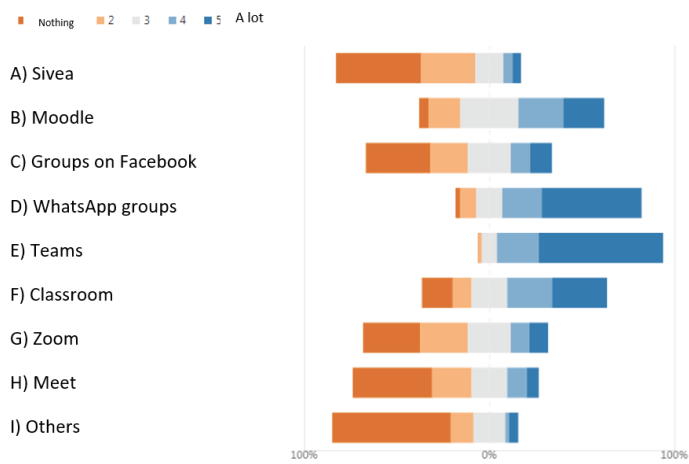
Graph 3. Problems at the beginning of the pandemic

Source: own author



Graph 4. Current problems in pandemic

Source: own author



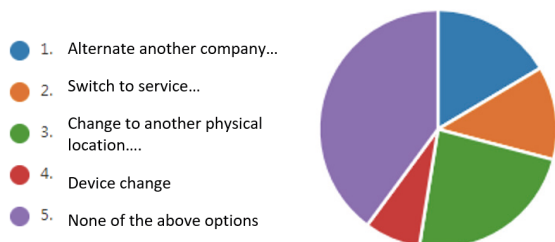
Graph 8. Platform evaluation

Source: own author



the generations that use it, the mobile takes ground and is above the tablets (which have a relatively large screen).

## SOLUTIONS TO INTERNET CONNECTION FAILURE PROBLEMS



Graph 7. Solutions to connectivity failures

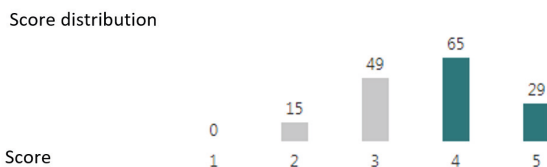
Source: own author

In this section, the answer to the fact that the alternatives offered for solutions to Internet connection failures exceeds the others with 63%, followed by 37% changing to another place that does have a connection and with 26% is that alternate or change internet provider company. It is established that the solution of being left without internet is not well defined in this section.

## EVALUATION OF THE PLATFORMS USED BY TEACHERS FOR ONLINE CLASSES

The ``Universidad de Sonora`` has confirmed that the Teams platform that it offers free of charge to teachers and students of all careers is one of the most efficient, it is the best rated, and young people also believe that WhatsApp groups also have an acceptable level thanks to the fact that With them you have more information and a list of tasks, exams and exercises set. The Moodle and Classroom platforms have very good acceptance, among the worst evaluated are Sivea and Facebook groups.

## ADAPTABILITY THAT YOUNG PEOPLE HAVE TO VIRTUAL CLASSES



Graph 9. Adaptability to virtual classes

Own source

The score is above half with a percentage of 73%, the important thing to decide if this amount is considered relevant in terms of being an acceptable score or not. Since in the course of a year we learned to use the current platforms. It is estimated that 59% are in the range greater than level 4-5.

## FINAL THOUGHTS

To carry out virtual classes, the main problems encountered are: lack of adequate spaces at home, internet deficiencies, as well as deficiencies in devices. The difficulties encountered with virtual classes are: learning methodology, distractions at home and sometimes the internet connection.

The most used devices in the pandemic in virtual systems are: Laptops with 62% and followed by the cell phone with 21%, which is relevant because the current generations who are attending university are using revealing devices, if the cell phone with a mini screen is more used than a tablet and a personal computer, indicates that users seek multifunctionality in their devices above all.

The best evaluated platforms are Teams, WhatsApp Groups, Moodle and Classroom, the worst evaluated are Sivea, Facebook Groups and the Meet platform. It is requested to unify the use of only some platforms, the tasks that are most difficult to carry out are: methodologies not adapted to the platform and



collaborative work, as well as the application of dynamics, games, to improve interaction, it is requested to vary the teaching formats.

### **PROBLEMS THAT STUDENTS HAD AT THE BEGINNING OF THE PANDEMIC IN (APRIL 2020)**

Some difficulties are: adaptation at home prevails, deficiencies in the Internet continue to be among the most important to combat, among the least problematic are computer equipment, adaptability to the use of platforms, electricity, they are among the safest services.

### **CONSEQUENCES OF USING DIGITAL PLATFORMS FOR CONSECUTIVE HOURS**

The main problems that students have when taking virtual classes are: Distractors at home (39%), The way of learning with 35% and the internet connection, which is essential with 16%.

### **ASPECTS ABOUT ADAPTABILITY OF THE VIRTUAL SYSTEM**

A reaffirmation that the problems persist is that the concentration to understand the class content is the main reason, space difficulties

and the internet connection are other important reasons.

### **DEGREE OF ADAPTATION THAT STUDENTS HAVE REGARDING THE VIRTUAL MODE OF CLASSES**

The average response is 3.68 out of a maximum value of 5, the score is above half with a percentage of 73% of adaptability or familiarity of the platforms.

### **MOST USED DEVICES FOR VIRTUAL CLASSES IN PANDEMIC**

The most used device is the laptop, a complete device as it has a keyboard, large screen and everything necessary to be used anywhere for convenience. The second most used is the cell phone, which is a revealing device for current generations, being a mobile device but not helpful due to its small screen.

### **VIRTUAL PLATFORMS BEST EVALUATED BY STUDENTS**

Teams is the best rated, another well-reviewed platform is WhatsApp groups. The Moodle and Classroom platforms have very good acceptance, among the worst evaluated are Sivea and Facebook groups.

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