



“Perception of the Dental University Community of the Autonomous University of Coahuila on online teaching during the COVID-19 pandemic”

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SUMMARY

At the end of 2019, a new pandemic was caused by the SARS-CoV-2 virus, causing radical changes in society, forcing the stoppage of daily activities. The suspension of in-person activities at all levels also affected the Faculty of Dentistry of the Autonomous University of Coahuila Unidad Torreón (FOUAdeC), forcing classes and patient care to be interrupted. The purpose of this study is to evaluate and determine the perception that both scholars and pedagogues have about these types of classes. A questionnaire was provided to 103 students and 20 teachers under the Technology Acceptance Model (TAM), using the Likert type scale in order to determine what improvements can be made so if in the future a similar situation happens there is a better way to carry out the education for future professionals. Both teachers and students agree that they worked in the best way possible during the pandemic and that they made the most of it, although there are still aspects to be improved.

Key words: SARS-CoV-2, schools, classes, education, questionnaire, students, teachers.

I. INTRODUCTION

The pandemic caused by the SARS-CoV-2 virus that began at the end of 2019 radically changed the lifestyle to which we were accustomed. The social impact reached every city in the world, also causing changes in the education field. At the beginning of the pandemic, in-person classes were suspended, and had to be developed with a hybrid modality. These educational changes also applied to FOUAdeC, they were forced to interrupt classes, interrupt the care for its patients,

and teach classes virtually through different platforms such as Zoom, Google Classroom or Microsoft Teams.

Teachers and students of the faculty had a great challenge in having to adapt to the new modalities. These new standards were dictated by the WHO and aims to avoid the risk of spreading the virus, thus protecting the education community and the patients.

The objective of the research is to understand the scope and level of learning acquired at FOUAdeC during the COVID-19 pandemic. This was done through the use of TAM to identify the use of Information and Communication Technologies (ICTs), using the Likert scale to determine how effective the education provided/received during the pandemic was and to analyze the use of new tools for the teaching-learning process in an innovative way.

Materials and methods

Participant requirements

- Undergraduate students who have received hybrid classes
- Be a registered student of the FOUAdeC in the following years, 2020-2022
- Undergraduate students who are willing to participate in research
- Teachers who have taught virtual and in-person classes
- Professors who are willing to participate in research

Not eligible to participate.

- Students who have only received classes virtually or in person in the period 2020-2022



- Undergraduate students who are not willing to participate in research
- Teachers who have taught virtual classes only
- Teachers who have taught face-to-face classes only
- Teachers who are not willing to participate in the research Questionnaire for students and another for teachers under the TAM so that the student identifies how they perceive the ease and use ICTs.

and responding using the Likert scale. (Table1), (Table2)

II. RESULTS

The surveys were administered to 103 students whose ages ranged from 18-27 years, 72% female and 29% male.

Table 1. Survey Results from FOUAdeC UT Students.

Statements	I totally agree	I agree	Undecided	I do not agree	I strongly disagree
I consider the use of virtual platforms for classes to be simple.	33%	42%	13%	11%	1%
I have no problem finishing the semester with the use of virtual platforms	15%	19%	33%	20%	13%
Online education has motivated me for my learning	1%	13%	28%	28%	30%
I would enjoy virtual classes more if a greater number of tools or dynamics were added	22%	42%	22%	9%	5%
I consider that I have the same capabilities as if the entire degree had been in person	3%	4%	18%	33%	42%
It was easy to adapt from the process of in-person classes to virtual classes	12%	21%	22%	35%	10%
I consider that through virtual platforms I can have the same communication with teachers as in person.	4%	8%	17%	45%	26%
Virtual theoretical classes are more effective than in person	4%	9%	17%	38%	32%



Even though you can return to face-to-face classes, you can continue using virtual platforms	28%	46%	13%	9%	5%
Returning to face-to-face classes brought a radical change in my way of working at school	31%	51%	12%	4%	2%
Using virtual platforms made me improve my skills in the use of digital devices	11%	50%	19%	17%	4%
Professors have the appropriate knowledge to teach classes virtually	6%	19%	33%	23%	18%

Most of the student community 75% agrees that the use of virtual platforms for classes is simple, and that there is no major problem in using them, although a smaller percentage 13% think otherwise.

When asked if there was any problem in finishing the semester through virtual platforms, the students gave answers that caused a triple tie. A third of the participants 33% did not want to finish classes through this modality, a slightly higher percentage, The majority 34%, have no major problem with finishing the semester with virtual class, and the last third 33% are undecided and did not know how to choose between yes and no.

More than half of the students 58% agree that virtual education has not motivated their desire to want to learn, and it's only a small percentage 14% who think that this modality has motivated them. If new dynamics or activities were added to virtual classes, most students 64% would enjoy this learning process more than traditional methods. although a few of the student 14% are fine with the way lessons are already taught. The goal was to teach virtual classes as normal as possible, as if the student was in a classroom, almost all future dentists 75% think they do not have the same capabilities they would have had if they would have been in in-person-class. only 7 people 7% think they have the same skills.

The jump from classrooms to screens was atypical, so almost half of the students 45% believe that it was not easy to adapt to this change. however, a third 33% affirm that they had no problem with the use of these new platforms.

Almost three quarters of those surveyed 71% feel that with the use of virtual platforms it is more difficult to establish good communication with teachers, and only a small sample 12% think the other way around.

Students prefer face-to-face classes, since more than half 70% think that classes are more effective in classrooms and not through electronic devices, unlike a smaller number 13% of people who think that virtual classes are better.

A large percentage 74% indicated that it would be a good idea to continue using virtual platforms even when classes are already taken in person, since they can still be of value. although some 14% do not want to know more about the cultural platforms and think they should not continue to be used.

Since the trend of online classes continued for more than a year and a half, when the time came to return to the classrooms, the vast majority 82% of students affirm that they felt a radical change in their way of working. which they were already accustomed to, and a small percentage 12% think that they did not have any change.

A great advantage of the pandemic was that it helped us all improve our skills in using electronic devices, that's what more than half 61% of students think, compared to a significant percentage 20% believing their skills did not improve. Although no one prepared us for the pandemic, just under half 42% of students estimate that teachers have the capabilities to teach classes through virtual platforms, and although a third 33% are not sure of their answer. it is only the minimum 25% of people



who think professors do not have the skills to teach classes virtually.

Regarding the surveys applied to teachers, there was a response from 20 of them, who range in ages from 33 to 65 years, with 55% being male and 45% female.

Table 2. Results of the survey applied to teachers of FOUAdeCUT.

Statements	I totally agree	I agree	Undecided	I do not agree	I strongly disagree
I consider the use of virtual platforms for classes to be simple.	25%	65%	10%	0%	0%
I have no problem finishing the semester with the use of virtual platforms.	5%	65%	10%	10%	10%
I consider myself capable of teaching classes virtually only	15%	40%	10%	30%	5%
I consider that the students have the same abilities as if the entire degree had been in person.	0%	5%	10%	60%	25%
It was easy to adapt from the process of in-person classes to virtual classes.	10%	50%	30%	10%	0%
I believe that through virtual platforms you can have the same communication with teachers as in person.	0%	15%	5%	55%	25%
Virtual theoretical classes are more effective than in person	10%	10%	15%	35%	30%



Even though you can return to face-to-face classes, you can continue using virtual platforms	35%	45%	5%	15%	0%
Returning to face-to-face classes brought a radical change in my way of working at school	15%	45%	10%	20%	10%
Using virtual platforms improved my skills in the use of digital devices	60%	25%	15%	0%	0%
Students have the appropriate knowledge to receive classes virtually	20%	40%	25%	10%	5%

90% obtained a positive response regarding the teachers' opinion that the use of platforms to teach classes was simple and easy, so they did not have any major complications in using them.

As part of the results of the following question, the majority of teachers 70% do not have any problem with finishing the semester through virtual platforms, however, a smaller but considerable percentage 20% does not agree.

Just over half of teachers 55% consider themselves capable of teaching virtual classes only. while less than half 45% do not think the same way and do not think they are capable of teaching classes only virtually.

The majority of professors 60% believe that students acquire the same skills in their degree by learning virtually as if they had received classes in person, however, a smaller percentage 30% thinks this is not the case.

Half of the teachers 50% had no major problem adapting to the transition from in-person to virtual classes, while some 30% are not sure if it was easy, and a lower percentage 20% definitely think This change was not easy.

Almost all 80% teachers think that through virtual platforms it is impossible to have the same

teacher-student communication as in person, and only 3 teachers 15% think that they do have the same communication effective.

In the premise about the effectiveness of theoretical classes virtually instead of in person, the results are almost the same, since almost half 45% believe that they are more effective, but slightly less than that percentage 40% thinks otherwise and does not believe they are as effective.

Almost all professors 80% agree that virtual platforms can continue to be used in the daily routine of classes even though they can return to face-to-face classes, only 3 teachers 15% believe that they cannot continue to be used.

After spending more than a year teaching classes from home, it was evident that returning to the classrooms again would bring a change to the teachers, and that is what more than half 60% think, however, a slight percentage 30% did not feel that big of a change.

Something good that online classes brought was that we had to get used to the use of new technologies, and almost all teachers 85% think that thanks to this they improved their skills with the use of digital devices, while no one 0% responded unfavorably.



Since the new generations have greater skill with the use of technologies, more than half of the teachers 60% believe that students have sufficient skills and knowledge to receive classes virtually, although a small group of teachers 15% think differently and do not believe that schoolchildren have the necessary skills.

III. DISCUSSION

In a similar investigation at the University of the United Arab Emirates (UAEU) they evaluated the level of satisfaction and attitudes of students during the pandemic with e-learning (electronic learning) and virtual classes, the results confirm that the level of satisfaction of students is high and positive during the pandemic.

This demonstrates the importance of having existing and adequate procedures and the provision of all necessary education and e-learning at a university level, so that student learning is improved while maintaining their safety at the same time. Although this teaching method still needs to be evaluated in the long term. (2)

Another perspective is an investigation done on the student population in Indonesia, which showed the duration of the study influenced the preference of the students. A greater number of first-year students preferred Distance Learning (DL) compared to their seniors ($p < 0.001$). Students preferred classroom learning for group discussion, as distance learning brought difficulties in communication and gave them less satisfaction with learning. Only 4 Distance Learning (DL) over Classroom Learning (CL), although they agreed that Distance Learning (DL) gave them a more efficient learning method 52.6%, It gave them more time to study 87.9% and to review study materials 87.3%. Challenges during distance learning (DL) including external factors such as unstable internet connection, additional financial burden for internet quota and internal factors such as time management and difficulty concentrating while learning online for a period of long time. (3)

As a result, thanks to the pandemic, new and innovative tools for teaching emerged, and although they are easy to use, prior practice is advisable to master their use. Students and teachers agree that the same theoretical skills can be obtained through in-person-classes as well as in virtual format, however, clinical practice is also required, and this must be exercised 100% in person.

Despite this, they express that the classes have the potential to be more didactic, since despite the tools provided by Information and

Communications Technologies (ICTs), it is not the same to see infographics of a topic compared to being able to be in a simulator practicing. After more than a year of maintaining the online class format, students resented the return to in-person classes, since they became accustomed to only being at home behind the computer all day.

The use of virtual platforms is a great advantage that was born from the pandemic, and although it has more advantages than disadvantages, at least for the teaching aspect of Dentistry, it only serves as a complement and cannot supplant traditional use of technology used in Classes taught within the school. the future of these tools are very encouraging but we must continue studying them to realize what potential they truly have and to be able to get the most out of them. These types of studies must continue to be carried out at a global level to corroborate how the tools evolve virtual classes and find out if they became more popular or fall into disuse.

IV. CONCLUSION

Without a doubt, the COVID -19 pandemic brought many repercussions in general, some negative, but many others were very positive. The latter is the case when it comes to the area of education. it is estimated, according to the National Institute of Statistics and Geography (INEGI), that many people sought to begin or finish their studies.

In the specific case of the Faculty of Dentistry of the Autonomous University of Coahuila Unidad Torreón (FOUAdeC UT), although virtual platforms were something new, they were able to adapt to continue with education, and as progress was made, new functions were found that helped make classes more dynamic and interesting for everyone. This helped us realize that the world has evolved and taken an important step, one that we must adapt to and understand the use of new technologies.

In a general sense we can understand that teaching during the pandemic was a success in which the goal of continuing education was achieved and although there is a lot to polish to get the most out of these platforms, we can understand that the mission was a success and that both students and teachers knew how to handle the situation perfectly.

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