International Journal of Multidisciplinary Research and Development
www.allsubjectjournal.com
Online ISSN: 2349-4182, Print ISSN: 2349-5979
Received: 07-07-2021, Accepted: 22-07-2021, Published: 03-08-2021
Volume 8, Issue 8, 2021, Page No. 19-24

UPGM teachers and virtual teaching during isolation at the time of COVID -19

Gladys Del C Velázquez-López, Alexander Vargas-Almeida, Susana Pérez-Santos
Universidad Politécnica del Golfo de México, Carretera Federal Malpaso-El Bellote, Monte Adentro, Paraíso, Tabasco, México

Abstract
The effects produced by the COVID-19 pandemic have reached all sectors of the population. Education has not been the exception, even when actions were generated to give continuity to academic activities, which although it is true they mitigated the school backwardness, they also brought consequences for students and teachers. This paper presents the results of a survey that was applied to the professors of the Polytechnic University of the Gulf of Mexico (UPGM). The main objective is to know the impact generated on professors by working in virtual mode due to the COVID-19 pandemic, and the way in which they have implemented their didactic strategies during the periods: May-August (2020-2) and September - December (2020-3). A questionnaire of 27 questions was designed using the online platform Google Forms and a sample was selected, with the data collected a qualitative-descriptive analysis was carried out.

Keywords: virtual class, face-to-face class, teaching strategies, teachers, COVID-19

Introduction

The COVID-19 came to change everything and education is one of the sectors facing the challenge today, providing solutions to this time of crisis. On March 20, 2020, the schools interrupted their face-to-face activities, initially for a period of one month. However, due to the rapidity of contagion of the virus that was unleashed throughout the country, no return to face-to-face classes occurred and activities continued online. To avoid sources of contagion in schools, the Ministry of Public Education (SEP) rethought strategies to give continuity to the school year at all academic levels and thus not postpone the teaching-learning process. However, UPGM teachers and students have made efforts to adapt to this new normal and migrate from face-to-face education to virtual education in a few weeks, implementing strategies to continue with academic activities. Although the work of teachers is arduous, there are issues of personal training that cannot be taken virtual, issues such as: the digital divide that exists in the area of influence of the University, the motivation that students have towards the sudden change of modality in their education, the educational model itself and the difficult adaptation to the digital world make the teacher's work difficult.

It was considered important to carry out an analysis to know the situation that UPGM teachers are experiencing and the impact that the change from face-to-face to virtual classes has caused on them. It is expected that the university authorities of the UPGM are aware of these difficulties that teachers go through, caused by working from home, and take them into account to develop a useful strategic plan for future situations, since the pandemic has shown that the majority of teachers experienced difficulties with virtual teaching.

Background

In Bozkurt,'s work [1], it is stated that distance education is an old term, since it has been present since the beginning of correspondence courses in the 1930s, discs and tapes for learning a language in the 1950s and 1960s, telesecundarias of the seventies, or the rise of the open university in the eighties and nineties. In these instances it is observed that various pedagogical strategies are determined by the technologies available at any given time. The first two examples suppose the autonomous and independent study, while that of the Open University, as the author points out, and has an important element of public policy to offer the educational good in an inclusive way [2].

Until before the pandemic, Virtual Education was adopted as an innovative strategy to support learning processes, a trend or fashion that was not in a hurry to enter the educational system [3], although it was implemented progressively [4]; today virtual education is a pressing need that implies rethinking the traditional ways of teaching and learning, reviewing the role of the teacher and increasing the technological infrastructure to meet the requirements of higher education with quality [5]. In addition, the teacher must be considered as a key element in the professional training process of the university student, whether he interacts virtually or in person with his students [6].

Human beings face a series of challenges today [7], which indicates that it is necessary to be prepared to keep up with the times and the changes that are required in modernity. Education must go according to social, economic and technological requirements to meet the demand of a globalized world. The COVID-19 pandemic has radically changed daily life, and although in the near future the ways we interact will be different; it has taken time to adjust to the situation. This time of forced confinement has generated interesting paradoxes. Isolation has become a valuable practice and distancing almost a synonym for health [8].

The social distancing measures to prevent the spread of COVID-19 have had devastating effects on economic activity globally [9]. The closure of workplaces has forced the adoption of new ways of organizing work and certain activities have been able to continue because workers can

carry them out from home; added to this is the speed with which information technologies have been adopted and used.

Many activities can be done from home but they depend on the sector to which they belong. In their estimates, Dingel & Neyman [10] show that the occupations that can be done from home in Mexico are less than 25% and that the sectors: educational, financial, legal and administrative, which carry out activities using ICTs, have the greatest opportunities to be done from home.

Teaching is one of the jobs that, despite the effects caused by the COVID-19 pandemic, can be developed from home. However, most of the teachers had to adapt and deploy all their skills and knowledge to continue doing their work at a distance. In addition to the above, the UPGM university professor and especially the full-time professor also have to face a series of tensions generated by carrying out their substantive activities. Students, teachers and administrators are silent actors in the educational process, rarely their opinions or feelings are heard or taken into account. From there lies the importance of recovering the voices and feelings of the main actors in higher education from the center of the training process. The direct actors of the training process in higher education are subject to various disadvantages, specifically: a) structural conditions, such as technological ones, number of devices available, geographic space and Internet connectivity; b) personal conditions: socio-emotional, new ways of learning, digital skills, communication and effective organization [11].

Materials and Methods

In order to carry out this work, a survey was prepared that allowed to gather the opinion of UPGM teachers regarding: a) the virtual education that caused the COVID-19 pandemic, b) the strategies they have implemented during the academic periods affected since the year 2020 to present.

To carry out this analysis, the database of the teaching staff hired during the 2020-2 period was requested from the UPGM's human resources department. The study population is made up of two types of teachers, see table 1.

To choose the sample size, the formula of a finite population without replacement of units and with a confidence level of 95% was used. The equation is:

$$n = \frac{NZ_{\alpha}^{2}pq}{d^{2}(N-1) + Z_{\alpha}^{2}pq}$$

Where,

N: Size of the population to be surveyed (N = 87)
Z_{α}: Confidence level (1.97)
p: Probability of success (0.5)
q: Probability of failure (0.5)
d: Maximum permissible error (0.06)

To choose the number of teachers surveyed, a stratification was made, so that each type of teacher was represented in the sample. Then the amount of ST and FTT was determined using a proportional allocation given by the formula, $n_i = n\left(\frac{N_i}{N}\right) n_i = n\left(\frac{N_i}{N}\right)$ Where Ni is the number of elements in each stratum i and $N = \Sigma_{i=1}^{L} N_i N = \Sigma_{i=1}^{L} N_i$ is the size of the population. Through a simple random sampling, a random selection was made and it was determined that 66 teachers would be surveyed, where 29% were FTT and 71% ST (See table 1).

Table 1: Stratified sampling and sample size

Teachers according to their classification	Number of teachers (population)	Percentage of population	Proportional allocation
ST	62	71	47
FTT	25	29	19
Total	87	100	66

To obtain the random sample of the teachers surveyed, a table of random numbers generated in Excel was used. Two databases were prepared according to the type of teacher (FT or FTT), using the table of random numbers according to the sample size requested in each stratum. The selection obtained consisted of considering the numbers in the table of random numbers down by columns, taking care of the fact that if the numbers were repeated, it would continue until a different number was obtained.

Once the list of teachers surveyed was obtained, the survey link was sent to them by email. The application of the survey was done through the online platform Google Forms. The instrument used to carry out this study was a multiple-choice survey made up of 27 questions, which aimed to provide information on knowing the impact that distance work has generated on teachers; as well as the strategies they have adopted in their virtual classes during the pandemic. Once the information was collected, the data were stored in a single database to carry out the work of a quantitative approach with descriptive scope.

Results and Discussion

In the 2020-2 semester at the UPGM there were 87 teachers, both ST and STT, of which 66 of them were surveyed, representing 76% of the total population. To obtain the information, through the surveys, a very friendly platform was used that they could access at any time and on any device they had at hand.

According to the results shown in Table 2, at the beginning of isolation due to health contingency, 59% of the teachers were familiar with the use of platforms, this indicates that the majority had notion of what tools to use to teach classes in a virtual. However, the percentage of teachers who had experience teaching virtual classes before the pandemic is very low, only 29%; while 62% were not prepared to teach classes virtually and only 38% said they know of technological resources to support their academic activities. In addition to the above, just over half (54%) of teachers agree that they do not have adequate space to carry out their academic activities at home. 83% did have internet at home at the beginning of the pandemic, while 17% did not have this service at home, because activities that required the use of the internet, such as answering emails, uploading notes and investigating, were carried out carried out in the facilities of the University. Table 2 also shows that as teleworking evolved, only slightly more than half of those surveyed currently have a space at home to carry out their academic activities. Regarding internet, the majority already

have the service at home, only 5% still do not have it due to the coverage of the services; so they have to use other alternatives to continue with their activities.

Table 2: Conditions that helped to adjust a face-to-face course to a virtual one.

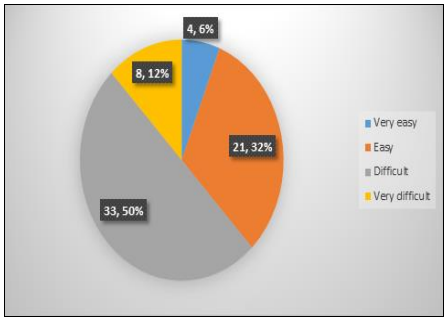
Before the pandemic you had:	Yes		Not	
Familiarity with the use of platforms	39	59%	27	41%
Experience teaching virtual classes	19	29%	47	71%
Knowledge of technological resources	25	38%	41	62%
Concentration space at home	30	46%	36	54%
Internet at home	55	83%	11	17%
You currently have:	Yes		Not	
Concentration space at home	36	55%	30	45%
Internet at home	63	95%	3	5%

Among the activities that the teachers carry out, in addition to connecting and interacting with the students during the class schedule during the week, there is also the development of didactic material such as: videos, manuals, slides, evidences, etc. They must also comply with procedures such as: filling out forms, procedures and attention to emails or WhatsApp. Table 3 shows that on average they are investing a maximum of approximately 6 hours per week for the preparation of teaching materials and approximately 3 hours per day for administrative procedures. The average time devoted to virtual classes on a daily basis (synchronous sessions) is between 2 and 4 hours.

Table 3: Time dedicated to the preparation of teaching material per week and daily virtual work

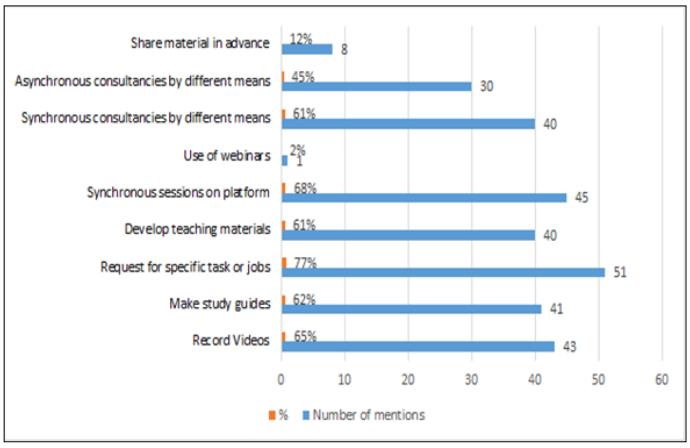
Time spent by the teacher in:	Total mentions
Preparation of teaching material per week	
1 and 3 hours	5
4 and 6 hours	28
7 and 9 hours	27
10 and 12 hours	5
13 and 15 hours	1
Administrative daily work	
1 and 3 hours	50
4 and 6 hours	15
7 and 9 hours	1
Virtual classes	
1 a 2 hours	9
2 a 4 hours	29
More than 4 hours	28

Graph 1 shows the difficulty encountered by the teacher when carrying out his various academic activities virtua



Graph 1: Difficulty considered by the teacher when working virtually

In graph 2, 77% of the respondents agree with the assignment of specific tasks or activities as a way to reinforce and value the learning, abilities and skills of the students, since this strategy leads to autonomous and responsible learning, developing at the same time the capacity for research and analysis. Synchronous sessions and video recording are the next two highest scoring strategies. The first, by its nature, has the advantage of offering the student the possibility of clarifying their doubts in a timely manner, with the possibility that the class can be registered for later consultation, although at this point its value is less significant. Recording videos for its part represents another very good learning opportunity, since this is usually very well prepared material; without any kind of improvisation or distraction. Although it offers the student the opportunity to consult it at any time, its disadvantage lies in the null interaction between the teacher and the student. On the other hand, these two strategies provide the teacher with elements of great value to demonstrate their work in front of the administrative system of the University.



Graph 2: Communication strategies used by teachers to teach virtual classes

Table 4 shows the digital resources or platforms that UPGM teachers use to teach their virtual classes. 94% use WhatsApp; this is because most students only have a cell phone to be able to carry out their activities.
When teachers were asked about the platform with which they have identified the most and felt most comfortable teaching their virtual classes during the health contingency, the majority, 61% answered that Microsoft Teams. It can also be observed that the study population has the necessary and sufficient equipment to be able to carry out its academic and administrative work (See table 4).

Table 4: Digital tools and technological resources for the teaching-learning process that teachers use for their sessions

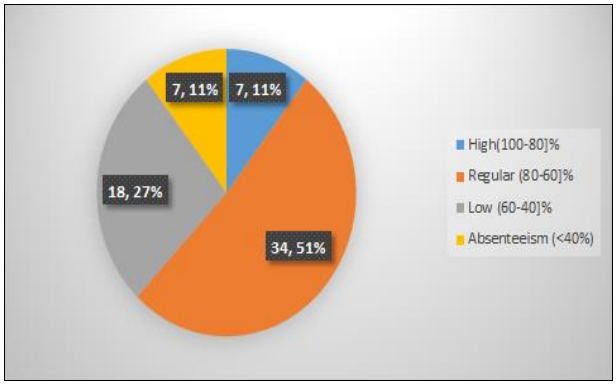
Digital tools and technological resources used during the pandemic	Total mentions	% of mentions
Platform used for virtual sessions		
Microsoft Teams	5	83%
Classroom	13	20%
Zoom	23	35%
Email	55	83%
WhatsApp	62	94%
Youtube	28	42%
Google Meet	7	11%
Facebook	5	8%
Skype	1	2%
Platform that you consider friendlier		
Microsoft Teams	41	61%
Classroom	10	15%
Zoom	8	12%
Google Meet	5	7%
Facebook	3	5%
Equipment you have		
Laptop	64	97%
Desktop	2	3%
Tablet	9	14%
Smart phone	51	77%

Table 5 shows the opinions held by UPGM teachers accustomed to working in face-to-face education in terms of working virtually.

Table 5: Teachers' opinion about virtual education

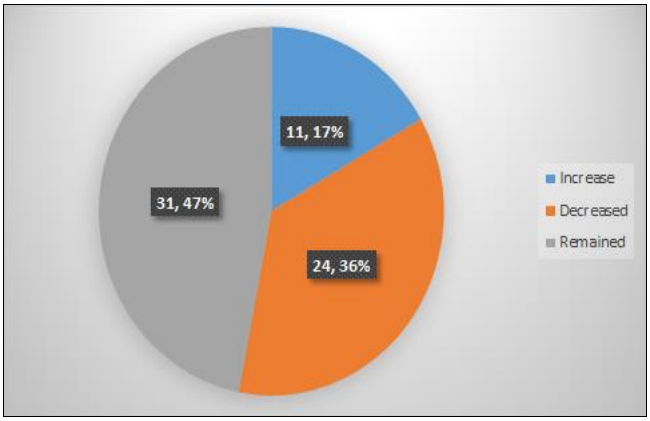
Comments about virtual classes	Yes		Not	
Do you consider they require more time?	58	88%	8	12%
Do you think the students have already been able to adapt?	23	35%	43	65%
Do you consider that the teaching-learning conditions are adequate?	26	39%	40	61%

The attendance of students to virtual classes during the period 2020-2 and 2020-3 is observed in graph 3. As can be seen, the students attended the calls of their teachers regularly.



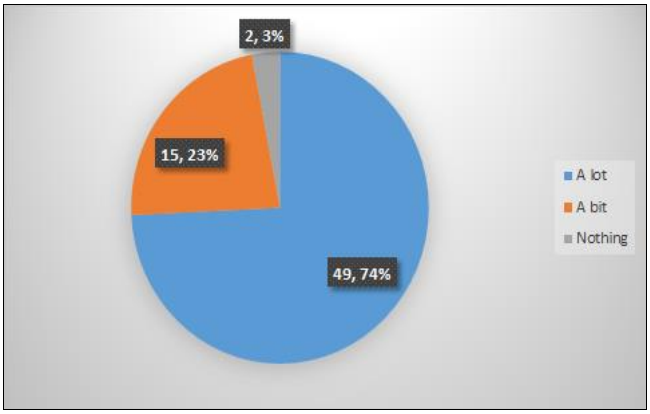
Graph 3: Frequency of interaction with students

According to the teachers' perspective, the failure rate under this modality remained constant, see graph 4,



Graph 4: Status of the failure rate under the virtual modality

When asked about the extent to which academic activities have interfered with their family and personal life during this period of isolation, the response was overwhelming, 74% of the surveyed population affirmed that these activities interfere a lot with their family and personal activities. See graph 5.



Graph 5: Level of intervention of academic activities in their personal life

According to the results obtained, teachers are dedicating most of their time to academic and administrative tasks that seem to be endless, added to this, the lack of adequate spaces in their homes, the internet, the little knowledge regarding technological resources; they are factors that make the job more complicated. Nobody had anticipated that they would be completely isolated from their work and although they now have more experience, the working hours in front of the computer are long and exhausting. Most of the teachers are parents who face responsibilities not only at work but also at home, and they are also citizens who are also affected by the pandemic.

The change from face-to-face to virtual classes has led to a change in work habits. The time that the teacher dedicates to the students has doubled, because he now uses his family and personal time to attend to the students when they request advice or require some tutorial attention. Despite having a working schedule, the conditions they currently live are of a "24/7 teacher" day. It is worth mentioning that due to the lack of experience in virtual education, most of the teachers feel the need to be more in contact with the students; which is tricky since most students have a cell phone to attend their sessions and commonly use data for their classes. In this sense, it is necessary to know how to understand and position ourselves regarding virtual classes at UPGM, since in virtual education; the role of the teacher contemplates planning and accompaniment in the student's learning process; in order to ensure that the objectives of the course are met. The virtual education teacher must facilitate the use of means in which the student can develop and thus take advantage of the platforms for educational purposes and not be connected through extensive videoconferences of lectures. Although at the beginning most did not have the experience in virtual classes, currently they already know and use platforms, although they use WhatsApp more to be in contact with their students.

In theory, virtual work should be more pleasant, because both the teacher and the student work at their own pace. However, the reality is different at UPGM; since the administrative burden is most of the time much greater than the academic work itself. Due to this situation, they consider that teaching virtually requires more time, however, they clarify that a factor that is negatively impacting their performance and well-being is administrative work such as: attending to emails, tutorial activities, refresher courses outside of hours labor as well as extensive and continuous meetings of academies; causing that most of the teachers are suffering: fatigue, stress and low academic performance.

The results show that although the teachers encountered multiple difficulties in carrying out their work, be they logistical, technological and material; adding an increase to the hours of work and little interaction on the part of the students, they carry out their work with pleasure despite being saturated. This finding will help institutional authorities reflect on the paths to follow after the pandemic and thus find alternative solutions to the wear and tear of teachers in future situations.

Conclusions

Given the results found in this work, it is observed that both teachers and students have faced the transition from face-to-face education to virtual education with strength and resilience. Despite the fact that many teachers have invested more hours of their day in training on technological resources, it is considered that there should be a unique platform of the University where materials can be uploaded and have a reservoir for the future.

At the beginning of the pandemic, the majority, both teachers and students, were not mentally or technologically prepared; the change from face-to-face classes to virtual classes took everyone by surprise. So it has been difficult to adapt to this system; which is not the modality that UPGM students and teachers chose to take classes and work respectively. It is considered important that, given the health emergency that is being experienced, the teaching staff should continue to be supported with training in the use of information technologies and digital platforms in the various disciplines; above all, because the careers taught at UPGM are technological in nature that require the use of spaces such as laboratories, that is, the improvement of the teaching-learning process must be potentiated through new technological skills. It is urgent that administrative processes harmonize with academic processes, since it is not enough to prepare teachers in the use of technologies, nor their willingness to improve their teaching strategies, if the administrative burden is more difficult to attend to; given the lack of planning and the wrong idea of following as such the procedures of a quality management system designed for a face-to-face modality, evidencing the lack of empathy towards the teacher.

Although education is constantly evolving, for UPGM teachers virtual education is a challenge that arose unexpectedly and has caused uncertainty, there are still teachers who are not used to the use of ICTs in teaching and added to that: the conditions of the students in terms of connectivity, the existence of wide digital gaps, the custom to face-to-face classes; they are aspects that prevent a good development. Virtual education allows to achieve: cognitive and social skills, collaborative learning, but the fact of resisting change is what has generated a complicated process to this new reality that is being lived. However, the work of teachers and students is titanic because they were not prepared for such a sudden change, because day by day they face a new challenge of how to teach and learn respectively.

References

1. Bozkurt A. From Distance Education to Open and Distance Learning: A Holistic Evaluation of History, Definitions, and Theories. P. I. Global (Ed.), Handbook of Research on Learning in the Age of Transhumanism, 2019, 252-273.

2. Baptista-Lucio P, Almazán-Zimerman A, Loeza-Altamirano CA, López-Alcaraz VA, Cárdenas-Domínguez JL. Encuesta Nacional a Docentes ante el COVID-19. Retos para la educación a distancia. Revista Latinoamericana de Estudios Educativos, L, 2020, (96).
3. Almirón ME, Porro S. Los docentes en la Sociedad de la Información: reconfiguración de roles y nuevas problemáticas. IE Comunicaciones. Revista Iberoamericana de Informática Educativa,2014:19:17-31.
4. Burbano-Pantoja VM, Valdivieso-Miranda MA, Burbano-Valdivieso ÁS. El conocimiento didáctico del contenido sobre probabilidad en profesores de matemáticas de la educación básica secundaria colombiana, Espacios,2020:41(37):112-125.
5. Mendoza HH, Burbano VM, Valdivieso MA. El papel del docente de matemáticas en. Espacios,2019:40(39):3-16.
6. Burbano-Pantoja VM, Valdivieso-Miranda MA, Burbano-Valdivieso ÁS. Teletrabajo académico afectado por el coronavirus: una mirada desde un grupo focal de profesores universitarios. Espacios,2020:41(42):335-348.
7. Medina Zúñiga MG. La educación virtual como herramienta en la orientación educativa. RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 2012, 48-55.
8. Silas-Casillas JC., Vázquez-Rodríguez S. El docente universitario frente a las tensiones que le plantea la pandemia. Revista Latinoamericana de Estudios Educativos,2020:50:89-120.
9. De Los Heros-Rondenil MG, Murillo-López SC, Solana-Villanueva N. Satisfacción laboral en tiempos de pandemia: el caso de docentes universitarios del área de salud. Revista de Economía del Caribe, 2020, (26).
10. Dingel JI, Neyman B. how many jobs can be done at home. Journal of Public Economics,2020:189:1-8. doi:doi:10.1016/j.jpubeco.2020.104235.
11. Miguel-Román JA. La educación superior en tiempos de pandemia: una visión desde dentro del proceso formativo. Revista Latinoamericana de Estudios Educativos,2020:50:13-40.