The Transition from a Face-to-face Subject of a Formative Nature to Online Classes: Analysis of the Experiences of Teachers

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Received September 08, 2022; Revised October 10, 2022; Accepted October 22, 2022

Abstract  Faced with the challenge initially posed by the confinement due to Covid-19, educational institutions had to move from an educational model with a predominance of face-to-face, to one online. The objective of this research was to investigate how teachers of a first-year medical subject in Mexico faced this transition and what emotions they experienced. A descriptive cross-sectional study was conducted, where 53 teachers answered online a questionnaire developed to obtain information on the use of technological resources and didactic strategies, their training needs, their opinion regarding online education and the emotions experienced. Descriptive, sex-comparative, and correlational analyses were performed. The majority of teachers reported using Zoom (77.4%) to teach and email (84.9%) to communicate with their students. While more than 90% expressed a positive attitude towards online education, 66% required more preparation and 70% felt it was better to give face-to-face classes. Between 30% and 50% experienced positive emotions, while nine to 30% reported negative emotions. No significant differences by sex were observed in the study variables. The information obtained has not only allowed teachers to obtain greater technological resources and accompaniment based on their specific needs, it has also highlighted the relevance of investigating the impact of these changes on the emotions of teachers, since the management they make of these will affect, in addition to their quality of life, their professional performance.

Keywords: online education, Covid-19, teaching experience, medical school, emotions

Cite This Article: Beatriz Zamora López, Joaquín Gutiérrez Soriano, Mariana Fouilloux Morales, and Ileana Petra Micu, “The Transition from a Face-to-face Subject of a Formative Nature to Online Classes: Analysis of the Experiences of Teachers,” American Journal of Educational Research, vol. 10, no. 10 (2022): 612-617. doi: 10.12691/education-10-10-4.

1. Introduction

The confinement forced by Covid-19 raised the need for schools to move quickly from a predominantly face-to-face educational model to a virtual one, for academic continuity through various stages of preparation, design, implementation, and evaluation, with an intensive use of technology [1]. This has required teachers to make an effort and commitment to learning and using different technological resources to fulfill their mission of educating [2], promoting critical thinking and shaping values in their students [3]. Therefore, from basic to higher education, institutions have given themselves the task of investigating how the process of transition from face-to-face to virtual teaching has impacted on teachers.

Teachers of basic and secondary education have reported that one of the biggest challenges has been the long-distance evaluation of their students [4]. In bachelor's degrees, teachers have addressed the changes in the teaching modality in different ways, there are those who reported that, although they considered themselves competent in the use of different technologies: a) they had doubts about their ability to teach their skills to their students in new environments [5]; b) few could explain how the technological resources used facilitated the learning of their students, as well as share their applied activities and adjust them according to feedback with their peers [6]; and c) they had to find a way to sustain the teacher-student relationship [7].

On the other hand, higher education teachers in Mexico have expressed agreement that the adaptation of academic work to the current situation was inescapable, for which they required: a) greater preparation, both in pedagogical and technological strategies; b) the infrastructure necessary for educational activities to flow smoothly, such as the availability of digital and information media on the use of technologies in education, improvement of institutional processes, pedagogical accompaniment, technical advice and information on institutional resources [8,9]; and c) a more efficient management of their time to cover the multitasking that the virtual modality of education implied [8].
Based on the research of experiences and alternatives of teacher reorganization, medical schools have proposed a series of proposals to maintain the training process of their students, mainly related to the incorporation of alternative scenarios, the intensive use of technology at a distance and multiple mechanisms for communication and feedback between students and teachers, as well as a reinforcement of the social mission of medical education [10,11,12]. It is considered that, if the teacher is able to design attractive classes that manage to capture the attention of his students, the latter will be motivated to continue inquiring about the topics reviewed, in a collaborative or self-taught way [13].

In the case of the first year of medicine, the situation is complicated because teachers must continue the training of a student population that, in addition to facing changes in their learning process from a fundamentally face-to-face modality to one with virtual predominance, the students are in a process of transition from high school to university, which implies a greater degree of demand in any career, but more when it comes to medicine. Therefore, it is essential to know the way in which our teachers are facing the challenge, what technological and didactic resources they have, what supports they require and how this change has impacted on the perception they have about teaching at a distance.

It is also necessary to inquire about the emotional effect that the transition process has had on teachers, due to the relevant role that emotions have both in the personal and professional spheres. From the cognitive model of the valuation of emotions [14,15], these are defined as those that occur when the individual evaluates whether or not the demands of his/her environment overflow his/her resources to face them and whether or not this puts at risk his/her personal well-being. The assessment that the person makes their emotions allows them to be aware of their presents, understand them and react according to the way they are perceived, which will have an impact on their quality of life, in general, and in particular their professional performance.

Introduction to Mental Health is a subject taught during the first year of the medical career, by professors trained in psychiatry, whose main objective is to introduce the future health professional in the management of the psychological problems that their patients may face and, in the knowledge, empathy and skill that must be developed within the doctor-patient relationship. The purpose of this study was, then, to access how these teachers faced the transition from a face-to-face class to a virtual one (of a subject whose basic characteristic is to be formative and fundamentally associated with a close relationship with the students, to be able to discuss topics that may require a certain level of depth) and what emotions they experienced from this situation.

2. Methodology

2.1. Design and Participants

This is a cross-sectional descriptive study, involving teachers (all of them doctors, with a specialty in psychiatry) of 54 groups of first-year medicine of the subject Introduction to Mental Health (formerly known as Medical Psychology). The curriculum of the medical school where the research was carried out includes biomedical and sociomedical aspects, in the first two years, as well as clinical practice in hospitals, during the five subsequent semesters. Introduction to Mental Health has as its axis aspects of humanistic medicine, where the center of attention is the individual, who is able to feel, learn, symbolize, imagine, self-determine, as well as possess plasticity and passions; so, the professional practice of the doctor seeks to concentrate not only on the physical condition of the patient, but also in his spirit. Due to its content, this subject arouses a lot of interest in young people and the search for a greater approach to their teachers.

2.2. Measuring Instrument

Based on the literature reviewed and their experience in teaching, four academics and researchers developed a questionnaire with 41 questions: a) six aimed at collecting information on the characteristics of the study population (age, sex, whether the professor was a professor or assistant or both, years of teaching the subject and if he/she worked full-time in the teaching institution); b) 15 (nine with closed response format and six open) on the use of resources for the teaching and evaluation of the subject and communication with students, as well as the requirements for greater preparation in the process of transition from face-to-face to online teaching; c) 18 (11 closed, six open end and one mixed) aimed at inquiring teachers’ views on the benefits and limitations of online teaching based on his/her experience (such as how they develop communication with their students, how they manage to hold the attention and interest in the class, the possibility of feedback, the teaching of the thematic contents to be covered and the evaluation of their learning; as well as the role of the teacher); d) one item was directed at the emotional impact of the transition process from face-to-face to online teaching, with a mixed response format (the participant could choose between one or more emotions offered by the instrument, but also had the option of indicating others that did not appear in it); and e) an item (with an open response format) where teachers were asked to share aspects that they considered relevant to help us understand their experience in the face of the challenge posed by online education.

2.3. Procedure

Each of the teachers was invited (via telephone) to participate in the study, voluntarily and anonymously, to learn about their experience during the first month of teaching online classes. A request was then emailed to each one to answer the questionnaire via Google’s form application.

2.4. Analysis

Since the data were not normally distributed, for the descriptive analysis the medians, minimum and maximum values, as well as the frequencies and percentages, were calculated and reported; while for the comparison by sex, the Mann-Whitney U test was used and, for the correlational, the Spearman test. The significance level was set at \( p \leq .05 \), with bilateral hypothesis testing. Finally,
the information obtained from the open answers allowed to deepen the explanation of the results of the quantitative analysis.

3. Results

3.1. Descriptive

Of a total of 68 teachers who taught the subject Introduction to Mental Health at the time of this study, 53 (77.9%) answered the questionnaire, with a median age of 47 years, just over half were women, 22.7% attended two groups and about a fifth worked full-time in the institution (Table 1).

Table 1. Sociodemographic and labor characteristics of teachers (n=53)

| Variables                  | Values       | Median | Minimal | Maximum |
|----------------------------|--------------|--------|---------|---------|
| Age (in years)             |              | 47     | 31      | 78      |
| Teaching of the subject (in years) |            | 7      | 0       | 52      |
| Sex                        |              |        |         |         |
| Woman                      |              | 29     | 54.7    |         |
| Man                        |              | 24     | 45.3    |         |
| Position in the first group|              |        |         |         |
| Tenure professor           |              | 36     | 67.9    |         |
| Assistant professor        |              | 17     | 32.1    |         |
| Position in the second group|            |        |         |         |
| Tenure professor           |              | 9      | 17.0    |         |
| Assistant professor        |              | 3      | 5.7     |         |
| Full-time                  |              |        |         |         |
| Yes                        |              | 14     | 26.4    |         |
| No                         |              | 39     | 73.6    |         |

Regarding the management of the different resources offered by technology, most teachers reported using Zoom (n=41, 77.4%) to teach their classes, while another considerable number of them made use of Google Classroom (n=15, 28.3%) or Google Meet (n=10, 18.9%); 32 (60.4%) used a single platform and just over a third (n=19, 35.8%) two. On the other hand, as a means of communication with their students, professors highlighted the use of email (n=45, 84.9%) and WhatsApp (n=31, 58.5%); 26 (49.1%) used only one means of contact, while 24 (45.3%) reported driving two. Less than six percent said they use more than two technological tools, either to cover teaching or distance communication with their students.

During the process of transition to the online modality, the medical school where the research was carried out has offered various technological resources and advice to its teachers to face this challenge. Most of them expressed a positive attitude towards distance education and considered that the platform(s) they used, allowed them to cover several of the requirements of the subject, such as: teaching the thematic contents, capturing the attention of their students, communicating with them, as well as giving feedback and evaluating their learning. Although more than half felt it was better to teach face-to-face classes, most teachers planned to continue using online classes as a complementary strategy after the lockdown ended. Despite the benefits detected in the use of technology, some limitations or difficulties were pointed out, such as the fact of not being able to properly observe the students (because they did not turn on the camera or, if they had it activated, it was not possible to have a perception of their work and attention as is achieved in face-to-face classes) and the need for greater preparation in the management of the platforms by teachers (Table 2).

Of the aspects that teachers took into account to evaluate the learning of their students, they highlighted: participation in class (n = 49, 92.5%), attendance and extra-class tasks (n = 45, 84.9%), presentation of topics (n = 40, 75.5%), multiple choice exams (n = 34, 64.2%) and open-end questions (23, 43.4%), as well as self-evaluation (n = 10, 18.9%). More than half of the teachers (n=29, 54.7%) included four or five of these elements or others to carry out the evaluation, 14 (26.4%) used six or seven types, nine (17%) less than four, while only one person handled more than seven.

Table 2. Experience of teachers in the use of technological and didactic resources during the transition process

| Frequency | Percentage |
|-----------|------------|
| Yes       | 14 (26.4)  |
| No        | 39 (73.6)  |

| Values | D/SD | U | A/TA |
|--------|------|---|------|
| Positive attitude towards online education | 0.0 | 3.8 | 96.2  |
| Employed platforms satisfy the development of the class | 3.8 | 5.7 | 90.6  |
| Connectivity to platforms is adequate | 3.8 | 5.7 | 90.6  |
| The thematic contents of the course are covered | 1.9 | 15.1 | 83.0  |
| The use of online classes after the Covid-19 lockdown | 7.5 | 9.4 | 83.0  |
| The platform allows communication with students | 0.0 | 18.9 | 81.1  |
| You can evaluate your students in this modality | 7.5 | 13.2 | 79.2  |
| Platforms makes it difficult to observe students | 9.4 | 11.3 | 79.2  |
| Managed to hold on to his/her students' attention | 5.7 | 22.6 | 71.7  |
| It is better to give face-to-face classes | 7.5 | 22.6 | 69.8  |
| His/her role as a teacher has changed | 22.6 | 34.0 | 43.4  |
| Students lose interest with the online modality | 23.1 | 34.6 | 42.3  |
| The teacher is distracter by events at the students' home | 45.3 | 22.6 | 32.1  |

| Yes                                     |
|-----------------------------------------|
| He/she has been able to give feedback to their students | 94.3 |
| Believe that more preparation is required | 66.0 |

D/SD=Percentage of teachers disagree or strongly disagree with each reported experience; U=Undecided; A/TA=Agree or totally agree.
The challenge of online education has awakened in teachers a series of emotions, both positive (they occur when the situation is not perceived as threatening and those who experience it in this way consider that they have the resources to face it) and negative (they occur when the event is perceived as a threat and the person who considers it so, does not feel able to face it); among those opinions that stood out: the challenge of learning, experiencing enthusiasm and curiosity, as well as the fact of feeling at ease, with satisfaction and hope; but, at the same time, teachers expressed feelings of tiredness, anxiety or insecurity, difficulty adapting to change, and isolation (Table 3).

Table 3. Emotional experience of teachers in the process of transition from face-to-face to virtual education

| What they felt                        | Frequency | Percentage |
|---------------------------------------|-----------|------------|
| Positive Experience                   |           |            |
| To be learning                        | 42        | 79.2       |
| Excited                               | 26        | 49.1       |
| Curious                               | 25        | 47.2       |
| At ease                               | 23        | 43.4       |
| Happy                                 | 19        | 35.8       |
| Hopeful                               | 16        | 30.2       |
| With faith in the new generations     | 1         | 1.9        |
| To be living a new experience         | 1         | 1.9        |
| Negative Experience                   |           |            |
| Tired                                 | 15        | 28.3       |
| Anxious                               | 10        | 18.9       |
| Unsafe                                | 10        | 18.9       |
| Difficulty adapting                   | 7         | 13.2       |
| Isolated                              | 6         | 11.3       |
| Frustrated                            | 5         | 9.4        |
| Insufficient                          | 5         | 9.4        |
| Confusing                             | 5         | 9.4        |
| Forced                                | 3         | 5.7        |
| Boring                                | 1         | 1.9        |
| Depressed                             | 1         | 1.9        |
| Misunderstood                         | 1         | 1.9        |
| That group empathy is absent           | 1         | 1.9        |

3.2. Comparisons

When using the Mann-Whitney U test to compare the behavior of the variables studied between women and men, no statistically significant differences were observed.

3.3. Correlations

As a result of the Spearman test, it was found that most of the variables studied had a moderate correlation with statistical significance between them. It was observed that those who:

- expressed a greater positive attitude towards the fact of teaching remotely, expressed their intention to continue using the modality of virtual teaching combined with face-to-face, when the confinement ended ($r_s = .642; p < .001$),
- expressed that the experience of teaching online had made them feel more positive emotions (the challenge of learning, experiencing enthusiasm and curiosity, as well as feeling at ease, with satisfaction and hope), they thought they could properly evaluate their students online ($r_s = .439; p = .001$),
- considered that they could adequately evaluate their students online, reported that they were managing to teach all the topics of the subject to their students ($r_s = .469; p < .001$),
- reported that they were managing to teach all the topics of the subject to their students, found out how to make their students pay attention to the class ($r_s = .528; p < .001$),
- found out how to make their students pay attention to the class, did not think that, with the online modality, their students lost interest in the class ($r_s = -.466; p < .001$) and considered that the platform used allowed them to communicate adequately with their students ($r_s = .411; p = .002$),
- expressed that the experience of teaching online had made them feel more negative emotions (tiredness, anxiety or insecurity, difficulty adapting to change and isolation), believed that the platforms used did not satisfy the development of the classes ($r_s = -.454; p = .001$),
- stated that the platform made it difficult for them to observe their students well, they thought that their students lost interest in the class, with the virtual modality ($r_s = .444; p = .001$), and they tended to be distracted when they observed that their students attended other matters at home ($r_s = .413; p = .002$).

3.4. Descriptive from Questions with Open Answer Format

Information was taken up that allowed to deepen the knowledge about the opinions and experiences of the participating teachers, during the process of adaptation to the new demands posed by Covid-19 in the educational context:

- While about a third said they did not need more support, almost half said they required more practice to learn more about the platforms and said they felt out of place with this technology (for example, “I’m already too old for this”) or that everything was new to them but had been willing to learn immediately what to do.
- When asked about their personal attitude towards online classes, three groups were distinguished, who: a) resented not being able to give face-to-face classes, b) stated that they had to adapt to this situation or c) were interested in this new educational modality.
- Regarding the advantages and disadvantages of the distance and face-to-face educational modality, three groups stood out again, who: a) to a greater extent, reported missing the personal interaction with the students, since it favored communication; b) to a lesser extent, pointed out that both alternatives had their pros (for example, having technological resources that allowed the teaching and evaluation of the thematic contents of the subject at a distance) and cons (for example, not being able to easily share the emotions associated with the topics), so they considered that combining them could be better; or (c) were of the view that the subject could be given entirely online.
In regard to how teachers managed to maintain the interest of their students at a distance, it was found that three had not yet achieved it but were still in the search for strategies. Most agreed that promoting participation during class (such as, asking frequently questions randomly) had worked for them; one teacher noted that he used various resources such as videos and virtual classrooms for discussion, among others. There were those who expressed their concern because some of their students did not leave their camera on and could not tell if they were interested in the class.

4. Discussion and Conclusions

The objective of this research was to investigate how teachers of a first-year medical subject in Mexico faced the transition from a predominantly face-to-face education to an online one, and what emotions they experienced in the process. There was agreement between the teachers of our study and those of other research in terms of effort and commitment in learning and using different technological resources to fulfill their mission of educating [1,2]. What was pointed out in another research on the difficulties that could be when waiting for reflective thoughts and communication [5], we also found similarities with our teachers, who reported that in many cases communication was not as fluid as they wished, given that the synchronous virtual presence of students was often not possible due to problems with the internet.

The different ways in which teachers responded to the challenge of distance learning leads us to consider that, like everything in life, everyone thinks and reacts differently to the same situation and that novelty can cause uncertainty, expectation, and anxiety. For some, this new way of teaching classes involved a greater effort in the search for alternative ways to do it and that was motivating; others accepted because they felt compelled by the circumstances, with no other choice; while there were those who missed the close participation with the students because they considered it indispensable to support them in their training journey as future health professionals.

It can be observed that, although our teachers expressed positive attitudes towards the use of technology and worked effectively in teaching, they indicated that they preferred face-to-face, as well as close interaction and not at a distance with students, a phenomenon that we can consider normal given that they had not yet adapted, in the first month of online classes, to the changes and challenges that were presented to them.

From the results of this research, we can conclude that:

- Despite the uncertainty that the transition from a face-to-face to an online class modality has caused in the teachers, they have accepted the challenge and are doing the classes remotely, in order to cover the program properly; that is, to comply with the teaching of the main thematic contents, within the stipulated deadlines, so that the students achieve the learning objectives of each unit.
- While teachers expressed a positive attitude towards online classes, most would like to have greater reciprocity with their students to convey their professional experiences and more easily solve the personal problems expressed by their students.

In agreement with Casacchia & col. [16], we observed that although the teachers expressed a series of positive emotions (the challenge of learning, experiencing enthusiasm and curiosity, as well as the fact of feeling at ease, with satisfaction and hope, among others) regarding distance education, which accounts for a positive attitude towards this modality of teaching; they also reported negative emotions (tiredness, anxiety or insecurity, difficulty adapting to change, isolation, etc.) that can be considered normal in a situation of this nature, but that it will be important to follow up to define whether additional support is required in case these do not decrease over time or even intensify.

- The way in which teachers reported addressing the educational challenge in the context of the confinement by Covid-19, leads us to consider that their work in this situation, together with the institutional support required by them, will bring the transition process to a successful conclusion, and will allow the continuity of the training of students in the distance modality, for as long as necessary.

This research has some limitations such as the small sample size and the fact that, when the application of the questionnaire was carried out, teachers had only taught online for one month; that is, they were at the beginning of the process of adaptation to the new educational modality, which allowed us to know their opinions and emotions regarding their experience in the face of the changes and demands of their academic work due to Covid-19, but not to follow up on them.

Despite the limitations of this study, it allowed us to understand how our teachers were approaching the changes in the educational modality online and what they required (apart from the technological and training resources offered by the faculty) to be able to carry out their work. Based on this specific information, we have searched or developed material (abstracts, videos, PowerPoint presentations, learning and self-assessment activities, etc.) and platforms (for example, development of an asynchrony virtual classroom designed for teachers and students to access at any time, with a variety of materials, strategies and resources specifically designed to support the learning and evaluation of the thematic contents of Introduction to the Mental Health, in a way that is simple and attractive to them) aimed at facilitating their work, as well as promoting constant communication between them and the teaching supervisors of the faculty, to provide them with help and support in the challenge posed by this process of adaptation to the online educational modality. As Mote-Signoret [17] mentioned, we still have to consider the possibility of continuing with on line studies after the Pandemic ends. Likewise, it is expected that these resources and accompaniment will reduce the negative emotional impact that changes in academic life have had on our teachers.

Finally, in addition to corroborating that, like the educational institutions of other countries with more or
less infrastructure, [18] ours has tried to respond as soon and effectively as possible to the requirements of a transition from a predominantly face-to-face modality to an online one, through the use of similar resources and strategies: This paper provides information on the effect that the demands of an exclusively on line education, previously hardly handled by most teachers, has had on their emotions. And it is that these have been left aside in the reviewed scientific literature, due to the interest in responding immediately to the demands of giving continuity to the training of students. However, we believe that emotions should be included in studies of this nature because of the relevant role they acquire both in the quality of life and in the professional performance of each individual, because they guide their lives, inform, communicate, motivate and invite action to satisfy needs; they are functional, unless the person who experiences and processes them considers that he/she cannot cope with the situation and, in that case, the emotion can be accentuated to the point of losing personal control [14,15].

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