

Appropriation of skills in students who migrated from traditional education model to an online education model, derivated from COVID-19

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Abstract— As a result of Covid-19 at the beginning of the year 2020 the need to migrate teaching from face-to-face model to an online has brought as consequence the lack of skills in students from the University of Guadalajara to perform in an online educational environment. For this purpose, first we point out the differences between virtual, online, and distance education in order to establish the type of educational model that is operating in the current circumstances. Subsequently we identify and define those skills which are basic to carry out the teaching-learning process virtually and online. The selected skills were time management, responsibility, digital skills, and self-management. The methodology used in this research was a combination of the qualitative and quantitative approach. A survey of 21 items was apply to 197 students in calendar 2020 B. Later, in the next section we proceed to the analysis and discussion of the result obtained. Finally, we return to the most relevant points of each section, we relate them, we contrast them and we reflect on the information that the survey yielded and in this way we reach the conclusions.

Keywords—appropriation of competences, online education, student, evaluation, traditional modality

I. INTRODUCTION

At the end of 2019 China informed the United Nations (UN) about the emergence of COVID-19, a new infectious disease. Weeks later, in January of this year, when there were only 82 cases outside of China, the UN declared COVID-19 a public health emergency [1]. On March 11 2020, the UN deeply concerned about the alarming levels of spread of the disease and its severity classified COVID-19 as a Pandemic, and asked all countries to take the necessary measures.

Among the measures that were taken to prevent the spread of the virus was to avoid activities in which there were concentrations of people which led to the closures of shops, cinemas, restaurants, and borders, and others. The education given in schools and institutions was no exception and face-to-face activities were ordered to be suspended.

So that school activities were not affected, important last minute changes had to be made in order for students to successfully complete the school year. These changes consisted of migrating from the traditional educational model to the online educational model.

However, let us not forget that “all technological innovation to be successful, must be a significant part of an educational project” [2], to put it more simply it is require to have as much information as possible.

The consequences that we observed derived from the research [3] were the following:

First, in order to fulfill their academic work, it is been demanded that students have the technological and connectivity devices and tools that are essential for virtual education to occur. It is evident that not everyone has the facility of these Information and Communication Technologies (ICT).

Second, students have had the need to adapt to the new dynamics and ways of learning that are provided and coordinated by teachers through online courses.

Third, students and teachers have had to develop and put into practice skills, abilities and knowledge that are required in the online education modality.

Now, regarding the first point, it is convenient for teachers to consider the specific situation of students in terms of availability and access to technological devices to plan courses, schedule activities, evaluate work, and in short, accredit the lessons learned.

Concerning to the second point, it is necessary for teachers to be very explicit, specific, clear and precise when designing and presenting the course, and to take into account any unforeseen situations that may arise. In this regard, in the document “Teaching in times of Covid-19”, it is indicated that in the new stage the teacher’s activity will be linked with the pedagogical use of digital technologies; the deployment of synchronous and asynchronous communication strategies and the design of plans or work guides to develop autonomous learning [4].

In this situation, it is important to adapt, as far as possible, to the circumstances and needs of the students. To achieve this, two concepts are key: diversity that allows generating an important range of options; and the other is flexibility, to be willing to make the changes that are required, even when the course is already underway. In other words, the course, no matter how well designed it may be, it is essential that it is also viable for all who participate in it.

In respect of the third point, we consider that it is very important that students become aware that the online learning modality demands different skills from those they normally develop in the face-to-face learning modality.

It is at this point where the objective of this work is located. Respectively, in relation to the results derived from the research work [2] the answer obtained from the

perception of the students when studying online was that they did not have the desired competencies, unlike the face-to-face modality.

Likewise, they considered that to achieve satisfactory learning in online education one must have specific skills such as time management, responsibility, self-management and digital skills.

Precisely, the present work informs the results of the second stage of research, in which we worked to form a diagnosis that would allow us to assess the level of appropriation of the skills in the students after eight months of change their educational modality. The purpose of getting this information is to know if the students have manage to appropriate the skills required to carry out their academic activities adequately.

II. MATERIALS AND METHODS

The present investigation has a qualitative approach, the method used was longitudinal [5] mention that the purpose of this type of research is to analyze changes over time in certain concepts, variables, or the relationships between them; For this research, it was required to evaluate the students perception regarding the development of certain skills that are required from their point of view for the acquisition of knowledge in online education.

A student community of 197 respondents from the high school and higher education level was explored using the survey technique, the instrument was applied online through a link that was sent via email and mobile device.

The instrument is made up of 21 items focused on the evaluation of the skills of students who are in the second scholar calendar of the online modality.

This methodology allowed us to identify the present situation that is being lived with the changes in education and the problems that students are facing, so the results are exclusively valid for the time and place in which this investigation was conducted.

III. RESULTS

The results obtained from the survey carried out with the students gave us the following data.

In the Fig. 1, the most relevant data of the surveyed students in relation to the impact of change of modality, corroborates that 50% have tried to do their best when working in the online educational program, 23% of the students confirm that this learning modality has had a positive impact on them, and 12% consider that learning is not achieved by this educational modality.

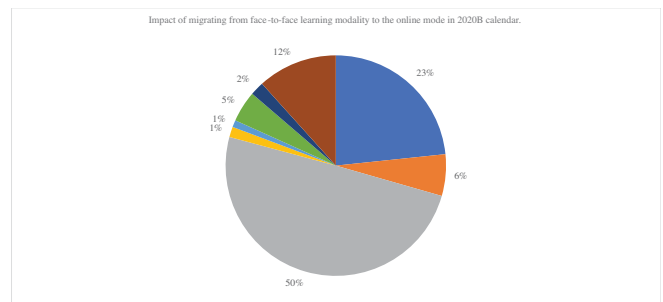


Fig. 1. Results of the impact from students when changing their educational environment. Source: Self-made

The Fig. 2 indicates that 57% of the students dedicate the necessary time to carry out their extracurricular activities; while 28%, when they have too many activities, do them as quickly as possible, and only 5% of the total sample, limit themselves to carrying out the activities they achieve.

The remaining 10% students, oscillate between 1 and 2%, in relation to the following answers:

- I only do what I can; I dedicate the necessary time to each activity
- I do them quickly when there are many; I dedicate the necessary time to each one
- I dedicate the necessary time to each activity; I forget to elaborate some
- I only do what I can; I do them quickly when there are many
- I do them quickly when there are many; I forget, make some

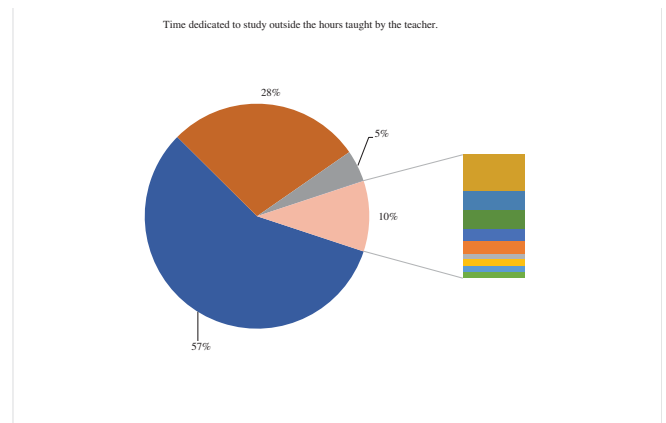


Fig. 2. Results of the hours that students dedicate to carry out their extracurricular activities. Source: Self-made

The results obtained in Fig. 3 indicate that 64% of the students including both academic levels affirm that the change in learning modality has required them to acquire new skills to continue with their studies; while 12% of the total sample mention that in this 2020B calendar, new learning skills have been demanded of them in relation to the final period of the previous 2020A cycle; for 10% of the respondents it was not necessary to acquire new learning skills.

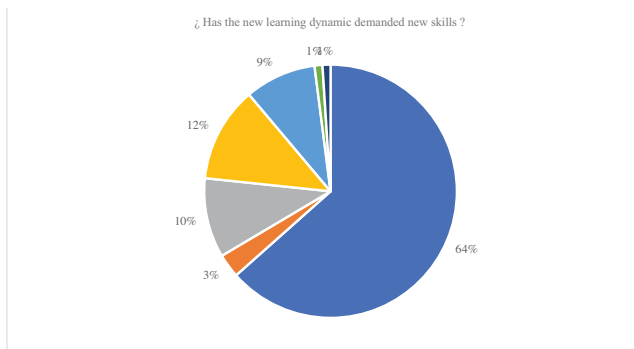


Fig. 3. Results of the students perception about the acquisition of new skills in the online modality. Source: Self-made

By the results obtain in Fig. 4, 84 students out of a total of 197 respondents, consider that the responsibility skill has developed more with the new learning modality; On the other hand, for 43 students this competition has not implied any change when changing the educational modality; Regarding the demand for the development of this skill, 32 of the surveyed students indicate that this cycle has demanded the management of this competence, only a little more than at the end of the previous cycle 2020A; We immediately found that 28 are the same, that is, that the responsibility ability has not had any change in both school calendars; the rest of the sample ranging from 1 to three students per option selected the following responses:

- a.- Yes; d.- I am equal 1
- b.- No; c.- A little more than the end of the previous cycle 2
- b.- No; d.- I'm equal 2
- (blank) 2

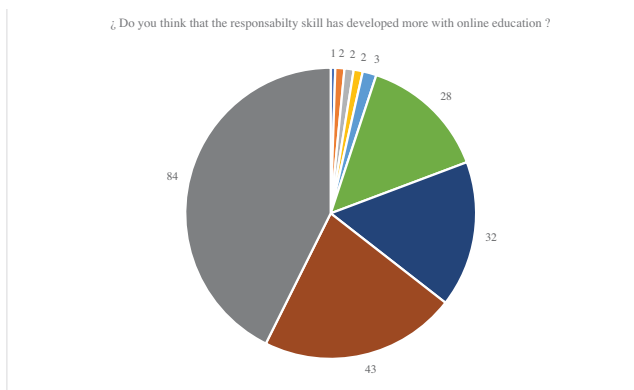


Fig. 4. Results of the students perception about the improvement of the responsibility skill. Source: Self-made

In Fig. 5 it is clearly identified that a little more than the total sample of respondents, 104 out of a total of 197, affirm that the competence of time management has developed more with the new learning dynamics; while 34 students of the total sample consider that this competence has developed but only a little more compared to the end of the 2020A cycle; We also have that for 33 students surveyed there have been no changes in their ability to manage time, since they mention that they are the same.

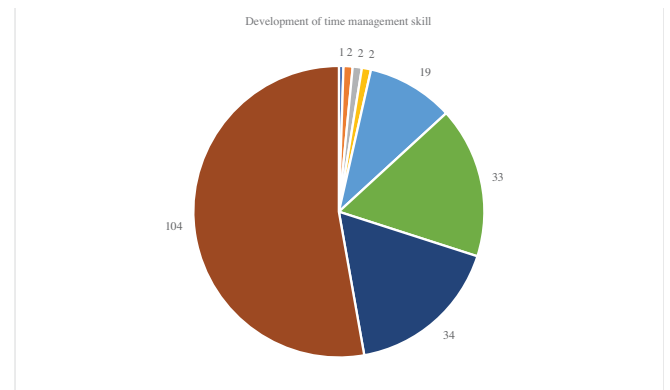


Fig. 5. Results of the students perception about the development of time management skill in the online educational modality. Source: Self-made

The results of Fig. 6 indicates that the majority of students, 69%, have connected via zoom with their teacher; 13% of the students did not identify any platform, while 7% connect through teams, and another 7% through hangouts; and finally only 4% have not established any contact with their teachers through videoconferences.

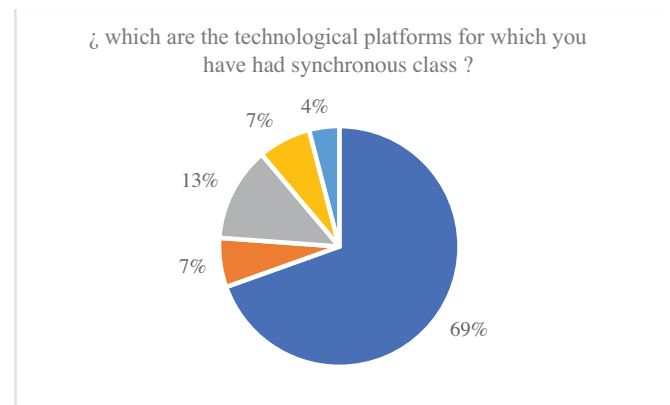


Fig. 6. Results of the different technological platforms that students use for their synchronous class with their teacher through videoconference. Source: Self-made

IV. CONCLUSIONS

Undoubtedly the situation that we are going through due to the COVID-19 disease has made us aware of the importance of continuing with our daily activities since we do not know when the number of infections will be reduced to a level where it stops represent a danger to human health.

In relation to the educational process, we are in the second school cycle where the teaching of face-to-face courses has had to be carried out through virtual methods, for which the use of ICT was implemented as the only means of contact between teachers and students in order to continue their teaching-learning process, and be affected as little as possible in this period of health contingency.

At the beginning of the pandemic, it was considered to carry out the educational process by virtual means, however, we detected that the students did not have the necessary skills to achieve their learning objectives as they had been doing in the face-to-face learning modality. Therefore it is true that the

use of Technologies has allowed us to maintain proximity with the rest of the world, be it social, educational, labor, personal, we find out that for each of these areas it is necessary to implement the adequate tools and methodologies to carry them out successfully.

Even though we detected that again in this school cycle 2020B, the students did not have complications regarding connectivity for the management of academic activities as in the 2020A cycle. In relation to the impact that students migrate from the face-to-face mode to the online mode, we found that only 12% of the students of the 2020B cycle considered that learning was not achieved through the online modality, while in the cycle 2020A the percentage was slightly more than double (35%).

The foregoing allows us to affirm that as the students become familiar with the new learning methodology they acquire the necessary skills to adapt to the online educational model and achieve his learning goals.

One of the crucial skills for students in a virtual or online learning modality is adequate time management, since students in addition to participating in a synchronous videoconference with their teacher also require to spend time on homework to reaffirm knowledge; while in the 2020A cycle students considered time management as one of the skills to be developed in this new learning modality, now in the 2020B cycle of the total of 197 students surveyed, 104 affirm that they have developed the time management skill in the online educational model; and 34 students also affirm that they have developed this skill a little more than at the end of the previous cycle. It was observed in the responses that they have an adequate schedule in the delivery of their tasks, dedicating 4 hours or more a day to comply with the requirements and quality that is due, they also have doubts they themselves seek an answer on the internet therefore this is not a limiting to comply.

Like the competence of time management, in this school year students have managed to appropriate the skills of both responsibility and self-management. This is a great advance since any of the non-face-to-face modalities are identified by recruiting autonomous students, who do not depend 100% on the teacher, but are proactive in managing their learning, they do not look for answers in the partner next door, they themselves are the limit to learn and maximize their knowledge.

We agree that the impact of the change in the educational process at the beginning of 2020 has decreased in this second school year, now the students are more familiar with this way of learning. We identify that students are capable of adapting to the change that the current situation has demanded, they have the ability to acquire the necessary skills to carry out their learning goals.

Nevertheless, it is important to broaden the vision of this new learning modality and consider at least three principles with respect to learning: authentic activities, construction (mediated by tools) and collaboration [6].

According to Osorio, he points out that learners need to be exposed to the use of conceptual tools of a domain of knowledge through facing authentic problems [6].

To consolidate a meaningful learning model it is necessary among other things to move from reception to participation; from control to independent reflection; from a product-centric approach to a process-centric one; from the idea of the student as receiver to the student as developer [7].

It should be noted that due to the very current contingent and complex issue we consider that our research represents a first approach to a phenomenon that has multiple edges and is being experienced, we are still going through it, and its study has barely begun. In the future when circumstances allow us we have planned to carry out a much more extensive study to investigate the broad repercussions that such a radical change in education has caused.

The current circumstances of the pandemic and its effects force us to innovate to diversify and promote learning, not only as a training process but also as an object of study [8].

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