



BLENDED LEARNING IN DENTISTRY IN PANDEMIC TIMES

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Abstract

Initially the article referred to B-Learning in Dentistry in time of Pandemic has as objective: To describe how the B-Learning contributes to the development of Dentistry in time of Pandemic, Having as method of analysis the deduction, through a basic research because it will help to contribute to the knowledge, not experimental of transversal cut, which will apply a survey to the students of dentistry of a particular university of Cusco, to be processed in the SPSS - 25 this has as results: it can be indicated that 35 students always and almost always do group work and find information on the web, the tools of the teacher's environment almost always use B - Learning for their classes, which are corroborated by the students themselves and can indicate that almost always the teacher is immersed in teaching using virtual platforms Discussion: the authors reviewed corroborates the data obtained where the student interaction with the teacher was more intense indicating that there is an adaptation of the teachers with the students when using virtual tools such as virtual platform B - Learning.

Keywords: B-Learning; Dentistry; Pandemic; Blended learning; Hybrid learning.

Introduction

The studies in B-Learning are currently very important because they contribute to the development of university teaching, for this reason this article aims to answer the question "How is B-Learning in Dentistry in time of Pandemic in a Private University of Cusco?"; for this we will describe the

different studies from a general perspective to a more grounded perspective to the context where we want to present, given this understanding we will show the main educational changes brought about by the pandemic by COVID-19, showing as an example the B-Learning, for this the following studies will be exposed:

Garcia (2021) indicates us that the pandemic COVID-19 has caused modifications and disruptions for the different bases of the state such as education, economy, social activity. This presented a reality in which education has shown a very notorious deficit of difficulties for its continuation due to the security taken by the state for the citizens of not carrying out face-to-face education and the same in different countries of the world. And it was seen that education should not be paralyzed so distance education has as a foundation the support of digital technology not only as a support but as a structure already proposed as a modality in the face of the health crisis that is being experienced.

Morales (2021) indicates that virtual environments should be better considered from an observation of the Ontology in connection with higher education and its new scope to knowledge, directed and adequate access in their professional training in times of pandemic Covid-19.

The different platforms help to obtain didactics of participative form, where to the university students it makes them easier to take it in the most suitable way in their daily life being this way a faster and easier system for all those who are part of the above-mentioned process. So the pandemic since the appearance of COVID-19 has generated effects in education around the world since 2020 when it first appeared in China, which is why there is a need to focus on teaching processes that are no longer linked to face-to-face situations or that have direct contact with them. Despite the existence of these difficulties, higher education institutions generated teaching processes that are faster and respond to the difficulties that are occurring today, and these forms included methodologies that retain B - Learning models also known as Blended Learning as its name in Spanish of blended learning.

This new blended approach in education deals with a form of remote and face-to-face work but is presented through various models that have in common face-to-face resources through the remote process that is carried. This model today is a breakthrough in telecommunications for classrooms to obtain an accessible and complete education for university institutions.

In the various studies referred to E - Learning in Peru is verified as already a consolidated reality in the different social and formative sectors, either in an organized or unorganized way, for it public administrations, private entities, collectives, and various professionals, all of them are subject by the use of the internet, and remember that the internet in Peru has many limitations from the speed of the same as the access of the different parts of the population. In addition, there are limitations of the use of these tools by teachers because many of them have an age where they were accustomed all their lives to work in a face-to-face manner that I'm changes generate many difficulties for the development of their classes today through the use of virtual platforms.

Also, it is determined that the pandemic situation brought changes that seriously affected the various forms of life within the family and social environment, and for the purposes of this article in education was a very affected by this pandemic, people in their daily lives had to modify their lifestyles, through mandatory adaptations but this was that many shortcomings were shown in families as many of them did not have a computer in their homes and much less internet, others who had basic cell phones that could not withstand such platforms. These are the main problems evidenced in the Peruvian reality today regarding education due to the pandemic.

For the particular universities of Cusco, they base educational models that are no longer linked to not having virtual campuses as students are already accustomed to, these foundations that adapt the universities of Cusco are still limited because they were not used to develop them, because everything was face to face, this leads to a shock in front of educational technology, and their ways of representing it for the development of their virtual classes began to perform them in a basic way, and over time is beginning to be a single adaptation to become a necessity of students for the development of the skills of the new world.

Then, the various studies of B-Learning in time of Pandemic show many limitations and difficulties as the case of a particular university in the city of Cusco, for that understanding this article aims to: Describe the B-Learning in dentistry in time of Pandemic in a particular university in Cusco, for it

will present the issue theoretically and then be applied to the same students to know what the experience they are taking today against these changes in teaching processes.

B-Learning.

The b-learning system has been integrated into the pedagogical system for a long time and has been firmly established, even more so at a higher pedagogical level. (Roman, Marin, & Chacón, 2021) Blended learning presents in its structure a model for learning that was exploited not long ago. Thus Pascual (2003), shows that BL minimizes on-line training in terms of improving the time and thus gained quality. It has an importance in the personal-presential contact where the student and the teacher interrelated in a direct way and decreasing or almost disappearing with the completely virtual training. (Vanina, 2020)

According to Sanchez (2021) There were studies, as summarized in the literature review, exposing the advantages and disadvantages of the modality in distance pedagogy, where the latter outweighed the former, a conclusion that was shared in a large post-pandemic study based in Romanian universities. These non-positive perceptions did not arise from an educational landscape with a mixed methodology (b-methodology) in the scenario. However, the use of a b-methodology, which seemed to be suitable for students to play the role of the main character within their own learning development and master the requested 21st century skills.

Technological tools for development in the pedagogical system have provided various options of use for teachers through the use of materials that provide a more diverse and didactic scope reaching the interest of students in an online education, thus the transition from a conventional education has generated many controversies for its adaptation and the combination of these two always seeking to improve educational quality standards. (Gonzalez, 2017). It is sought through b-learning to improve learning didactics and to make classes motivating and guarantee a more current teaching.

B-learning: In online education it is presented as an advantage with the use of tics, in view that the teacher offers a greater number of tools to search for information in a guided and appropriate manner through the different platforms, and with a more comfortable and diverse access for students. Allowing to foster students' skills in a self-taught way (Nuñez, Miguelina, & Ravina, 2019).

According to Gonzalez (2017), Lended Learning allows enhancing a higher level of learning by optimizing its application from the teaching point of view, education becomes more flexible, presenting itself as a hybrid educational style with face-to-face teaching being complemented and for safety with the online method.

In the midst of variants that would influence the exclusion or approval of a prototype in b-learning system, evidenced by such research remain: the differences in virtual capabilities; between teachers and students, the different use of technologies; looking for the update and self-taught training seeking the "expectation of results" (Costa et al., 2019).

During 2008 Cesar Coll has an evolutionary psychological perspective establishing contexts related to technological pedagogical design, respecting the structure of educational design from the virtual point linking inseparably two dimensions: Technological Dimension, with the application of virtual tools, considering advantages and disadvantages in their application and educational usefulness. From another point, the pedagogical Dimension will instruct the knowledge and peculiarities that apply in the development of ICT activities in education, seeking growth in global knowledge (Gonzalez, 2017).

La enseñanza en la Pandemia por el COVID 19

The adaptation to a distance learning education to establish a continuing education, through virtual systems, has been a disposition of the educational authorities of the government. Thus, it was established an interface of communication and virtualized relationship between teacher and student, found a variety of educational cracks in the technical field, thus having to modify the means for each sector according to their possibilities and needs with the formative tactics of teachers and the role of students. (Ramon, 2020).

The World Health Organization when establishing the pandemic state, influenced the different governmental levels both in education, economic system, and social sphere, within these is

encompassed the health sector and higher education. Especially, it was affected in the professional schools of health sciences in which it has deliberated in front of the dualism of conforming experts of health socially causing in view that they are careers of rigid systems that suffered the adaptations in their practices, being reduced to defend their physical, emotional probity, cooperating this way in the contexts of greater need. Teachers face a flood of demands in the care of inoculated patients, according to specialists and authorities, and with it a high danger and overcrowding of work. (Valdez J. et al., 2020).

Currently, the coronavirus pandemic has modified the classic face-to-face structures in which the educational process is carried out, mostly, worldwide, turning the home of each student into a new academic learning environment. According to data from UNESCO (2020), the non-attendance of students in educational spaces currently reaches 186 countries; that is, 1,292,378,969 million children and young people attending some school grade, which represents 73.8% of the total number of students enrolled globally.

The non-presential nature referred to by UNESCO brings with it a series of adaptations that students, teachers and support staff must make to the teaching and learning process. In a forced way, a modification of the panorama within virtual learning was established, thus presenting different challenges in the education processes, and it is here where controversies linked to the resilience aptitude and the development of competences that show a significant self-taught learning pedagogy are born. (Maldonado, Miro, & Stratta, 2020).

Certain aspects of the theory applied to the development of the disciplines of the courses: using the collaborative system during the development of work and laboratories are applied in groups thus exchanging different points of view, conducting debates to resolve those doubts that the students find (Reyes, 2017).

Gómez Galán, 2017. takes as a tool the interaction that exists of virtual platforms such as Moodle, mostly applied for virtual campuses in university instruction, and the latest pedagogical models provided by the MOOC (Massive Online Open Courses), studying in collective freedom of training, current alternatives for pedagogical academic planning are observed. (Gómez Galán, 2017).

In that article, the result of a theoretical study supported by the modification system, exercising a freedom of the rigid cathedra, strengthening important inventions in the higher education environment. Thus, directing the current basic course models, to advanced subjects with benefit in the methodological systems directed towards collective learning areas and to the theoretical practical and clinical evaluation results (Gómez Galán, 2017).

Within the social context in teaching is oriented within virtual platforms.

i. Pedagogical B-Learning Models

Pedagogical environments present primary elements that we mentioned to strengthen and increase students' prior knowledge:

Figure 1: Primordial Elements



Source: (Reyes, 2017).

A university educational prototype is sought for students, and they can use ICT tools with access to

current and more contextual information, thus facilitating workshops and courses in an accessible and comfortable way.

Teachers and students can start from the knowledge and skills used in the B-Learning model, could be based on the competencies, skills and abilities for their interaction. The design of university level subjects is generally for virtual and Blended learning as described by (Reyes,2017) when he mentions Valiathan (2002), which decrees that there are three basic models in b- learning:

ii. Advantages and Disadvantages of B-Learning in Education.

The main pros and cons of the use of B-Learning, is related to the importance in the development of university institutions (Reyes, 2017).

Figure 2: Basic B-learning Models

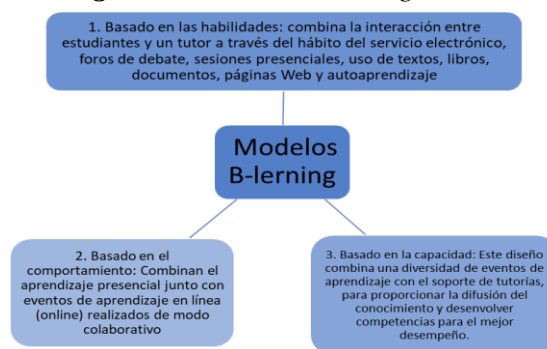
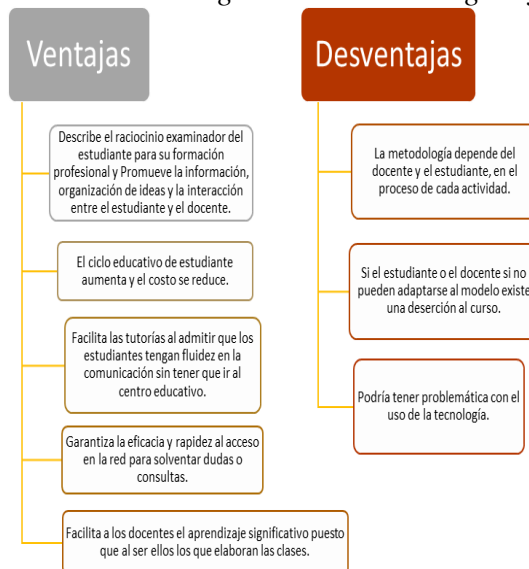


Figure 3: Main advantages and disadvantages of B-learning



The contribution of (Osorio et al, 2019) to knowledge certifies how the b-learning model when implemented in a course with online educational modality, decreases the impact of students in the transition that affects the transfer from a traditional education methodology to online education. Finding also that the study proved, the effectiveness that there is in the academic profit of the students evaluated with the b-learning model, in such a way that it is seen the reinforcement of knowledge and clears the uneasiness developed by the students in the different topics incorporated in the virtual activities of the applied course (Osorio et al, 2019)

(Dabbagh, et al, 2019) In their study on US state education undergraduates they were surveyed regarding the frequency of using technologies to learn, estimate learning and their technological value to support their learning as a complement to B - Learning. The results were that the use and value of technology is intimately intertwined between laptops and smartphones were mostly valued for

learning, thus highlighting the important utility of mobile and portable devices to support learning in all circumstances.

Within the B- Learning tools, in virtualization software configurations for training, search bases, implements to distribute files are important as it says (Dabbagh, et al, 2019), online newspaper libraries, videos and wikis achieved the best responses, thus deducing the self-directed approach of learners helping growth in learning. Being also digital tools are understood as main for learning, thus distinguishing the difference of schematizing and posing outstanding pedagogical didactics and interrelationships of learning thus guaranteeing praxis that help science as an additional teaching tool. (Dabbagh, et al, 2019) highlights Application Instruments in help exploit virtual media comprehend that advanced technology was efficient to boost discussion, group cooperation and open interrelationship as a fundamental part in learning, supporting the development of resource management in a personalized way.

The priority of b-learning is to encompass the power of conventional synchronous learning with asynchronous virtual activities, benefiting the student's responsibility with the learning methodologies that he/she grasps from the classes given and the open interaction in a reciprocal way with his/her teaching tutor (Munoz F. et al, 2020). Different studies have corroborated that b-learning can be more positive in its combination. Being complemented such system with the incorporation of ICT to the development of knowledge absorption with teaching and different learning methods in such a way we will allow to use the various virtual media as support tools and educational use, therefore, generate skills in collaborative and individual varied learning. (Munoz F. et al, 2020).

Method

The method of study for the realization of this article is deductive because it contributes to the knowledge on B - learning issues, being this a type of basic descriptive research to obtain information from the diagnosis. The present work has a non-experimental design because it does not manipulate the study data where the survey instrument will be applied only once, being this of transversal cut. The present study has as study population the 45 students who are enrolled virtually in the School of Stomatology of a private university in Cusco. For this purpose, the instrument applied was a survey that was validated by a group of three experts, which was organized by answers under the Likert scale for a better understanding of the topic in question. For the application of the instrument, first permissions will be obtained for the professional school of dentistry, where, when accepted, an informed consent form will be applied to explain the importance of the subject to the students class by class virtually, with the prior permission of the teacher, and when accepted by the student, an informed consent form will be applied, so that the surveys can then be applied. The data obtained will be systematized in an Excel to be passed in the SPSS - 25 statistical package where the information required with respect to the results required for this article will be obtained.

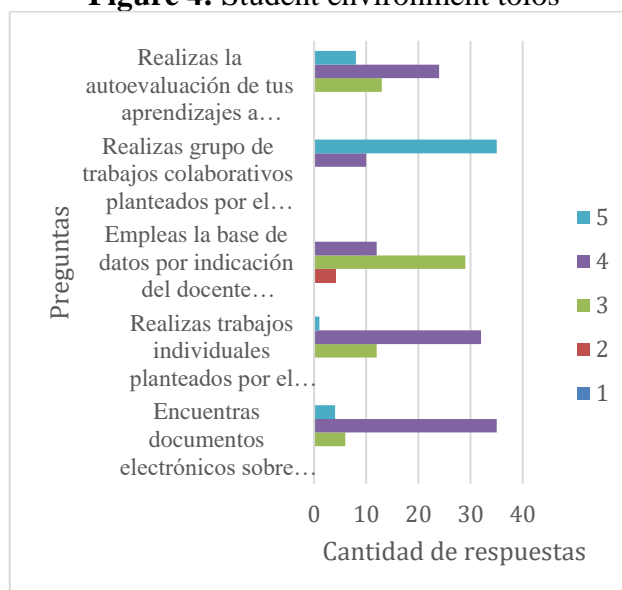
Results

The results obtained from the present work in the article were applied to 45 students who are enrolled virtually in the School of Stomatology of a private university in Cusco, which were taken into account to describe how B-Learning contributes to the development of Dentistry in times of pandemic, of which these were applied through the survey taken by a research on the same topic and field, this instrument had 15 questions, of which was organized into three dimensions which are presented grouped in the results obtained, these dimensions are: Tools of the students' environment, communication tools and tools of the teacher's environment.

Then the presentation of the results is indicated in questions according to the three groups indicated under the characteristics of the frequencies of 5 (1= never, 2= sometimes, 3= moderately, 4= almost always and 5= always) that provided more information regarding the 45 students. It was important to indicate that the students enrolled in the virtual platform are more than 350 in the school of dentistry of a private university in Cusco, however, it is not possible to reach the final population due to the main limitations of access to the study population, but by showing the results of those who use the application the most, you will understand the importance of the application. For this purpose, the main

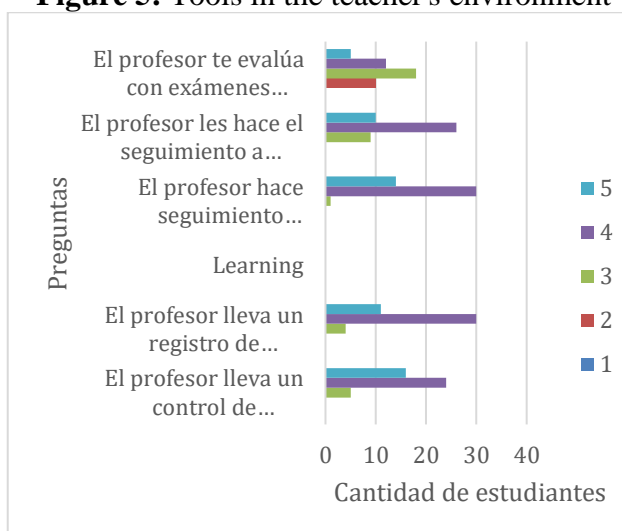
results are presented:

Figure 4: Student environment tolos



In Figure 4, referring to the tools of the student's environment, it can be observed that 5 aspects were asked that helped to understand what situations are in the student's virtual environment, of which the first question shows that 25 students indicated that they almost always carry out a self-evaluation of their learning using B-Learning, With respect to the second question, 35 students indicated that they always do group work set by the teacher, with the third question 28 students moderately use the database according to the teacher's indications, with the fourth question 33 students indicated that they almost always do individual work and finally 35 students indicated that they almost always find electronic documents on the indicated topics. Then it can be indicated that 35 students always and almost always do group work and find information on the web.

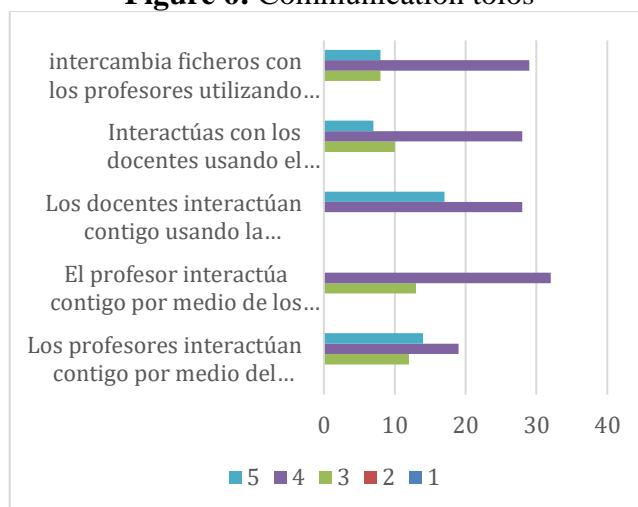
Figure 5: Tools in the teacher's environment



With reference to figure 5, this one presents 5 questions referred to the tools of the teacher's environment, from these questions it is presented that 17 students indicate that moderately the teacher evaluates their exams with the use of B - Learning, while 26 students indicate that almost always the teacher follows them up through B - Learning, on the other hand, 30 students indicate that they almost always follow up statistically the use of B - Learning by the students, also, 30 students indicate that the teacher almost always keeps a record of grades with the use of B - Learning, and finally 24 students state that the teacher almost always keeps track of attendance with the use of B - Learning. All this

indicates that for the tools of the teacher's environment he almost always uses B - Learning for his classes, which are corroborated by the students themselves.

Figure 6: Communication tolos



In figure 6 referring to the communication tools, of the 45 students it can be indicated that 5 questions were asked to the 45 students of which for the first question 29 indicate that they almost always exchange files with the teachers using the virtual platform, of the 28 students indicate that there is an interaction with the teachers using e-mail, of the 28 students state that the teachers interact with the students through the video conferences, on the other hand 32 of them state that the teacher interacts through the forums, and finally 19 of the students indicate that the teachers interact through the chat. Therefore, it can be indicated that the teacher is almost always immersed in teaching using virtual platforms.

Discussion of Results

The present research had 45 students who are enrolled virtually in the School of Stomatology of a private university in Cusco, which were taken into account to describe how B-Learning contributes to the development of Dentistry in times of pandemic, of which these were applied through the survey taken by a research on the same topic and field, this instrument had 15 questions, of which was organized into three dimensions which are presented grouped in the results obtained, these dimensions are: Tools of the students' environment, communication tools and tools of the teacher's environment. Then the presentation of the results is indicated in questions according to the three groups indicated under the characteristics of the frequencies of 5 (1= never, 2= sometimes, 3= moderately, 4= almost always and 5= always) that provided more information regarding the 45 students. It was important to indicate that the students enrolled in the virtual platform are more than 350 in the school of dentistry of a private university in Cusco, however, of the number indicated it is not possible to reach the final population due to the main limitations of access to the study population, but by showing the results of those who use the application the most, the importance of the application will be understood.

Being disagreed by Garcia (2021) indicates us that the COVID-19 pandemic has caused modifications and disruptions for the different bases of the state such as education, economy, social activity. This presented a reality in which education has shown a very notorious deficit of difficulties for its continuation due to the security taken by the state for the citizens of not carrying out face-to-face education and the same in different countries of the world. And it was seen that education should not be paralyzed so distance education has as a foundation the support of digital technology not only as a support but as a structure already raised as a modality in the face of the health crisis that is being experienced.

In addition to the opposition of Morales (2021) indicates that virtual environments should be better considered from an observation of the Ontology in connection with higher education and its new

scopes to knowledge, directed and adequate access in their professional training in times of pandemic Covid-19.

Thus, the priority of b-learning is to encompass the power of conventional synchronous learning with asynchronous virtual activities, benefiting the student's responsibility with the learning methodologies that he/she grasps from the classes that are taught and the open interaction in a reciprocal way with his/her teaching tutor (Munoz F. et al, 2020).

It should be noted that different studies have corroborated that b-learning can be more positive in its combination. This system being complemented with the incorporation of ICT to the development of knowledge absorption with teaching and different learning methods in such a way that we will be able to use the various virtual media as support tools and educational use, thus generating skills in collaborative and individual learning. (Munoz F. et al, 2020).

Conclusions

In this way it is concluded that the advancement of learning methods with the creation of materials applied to education helps us to understand that students and teachers can have greater synergy to the learning process where there are more ways to incorporate new processes that emerged in this pandemic of COVID 19.

It is also concluded that teachers were always immersed in a monotonous and mechanical education which did not help to see different mechanisms of improvement so they always presented traditional ways of learning, however with the presence of the pandemic this was totally changed so that they could incorporate virtual processes to all their teaching process which showed changes in students today, that part indicated shows that the results referred to the tools of the teacher's environment corroborates what the author indicates.

Finally, it is concluded that the different aspects of the students such as their families, friends, accessibility to virtual environments and the management of these implied a complex psychosocial position, it was taken into consideration for the progress in teaching and learning with virtual technologies. This information corroborates the data obtained where the interaction of the student with the teacher was more intense, thus indicating that there is an adaptation on the part of the teachers with the students when using virtual tools such as the virtual platform B - Learning.

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