

Management of successful virtual teaching tools for the process of training in remote attendance in the area of health

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Abstract

This article explains how the use of virtual teaching tools and strategies in the area of health, especially in dentistry and each of its disciplines, allows students to apply the knowledge acquired from theory to practice. This process favors the creation of critical thinking and develops creativity in class. Consequently, the activities carried out using these strategies generate independent learning in which the student takes advantage of his or her talents to create content in the classroom, giving way to autonomous and innovative learning based on real, everyday problems.

Keywords: Virtual teaching strategies, autonomous learning, health.

Introduction

Problem-Based Learning (PBL), since its inclusion in the medical school of Mc Master University, has been used in different programs in the area of health, as a teaching strategy that provides clear and simple tools to students.

The formulation of questions makes PBL an effective teaching strategy for dental schools and the health area. The resolution of clinical

cases with different treatment options allows for student interaction, role management, as well as stimulating critical and creative thinking.

In this sense, it is necessary to establish that pedagogical practice in health constitutes the set of activities and strategies that the teacher carries out so that the student reaches the competences and results of learning necessary to acquire basic skills and can contribute to the population with solutions to the problems of oral health.

In virtual education it is necessary to know different types of didactic tools that allow for the use of innovative strategies in the students of the health area. Karsenti (2001) indicates that pedagogical practice is associated with aspects such as the representation of the teaching, the planning done (syllabus) and the types of students. In the clinical area it is important to know methodologies with didactic activities that allow the student to apply and practice the knowledge acquired in class to develop in their practical courses.



In my teaching practice, this type of virtual strategies has been useful because it allows the student to solve real life difficulties and provide solutions to the population's oral health problems. This is why virtual education allows the student to use tools for active learning generating feedback that allows the student to meet the proposed learning outcomes (Roman, 2009).

Successful virtual teaching must have well-defined educational strategies and tools that allow and guarantee virtual communication in a synchronous and asynchronous way through the creation of videos by the student in order to achieve innovative, creative and autonomous thinking (Cayo-Rojas, 2020)

The AAMC (*American Association of Medical Colleges*) recommends that medical schools provide training programs for teachers as USTA University does during summer school and every academic semester with its diploma courses. This helps train teachers who will guide their students in an independent, creative and critical learning process.

The use of problem-based learning in health allows the student to develop and contribute diverse solutions to the population's oral health problems. In 1987, Harvard Medical School introduced this type of strategy into its curriculum, and dental students used it because they shared the first two years of training with the Medical School. Bearing this in mind, USTA University and its pedagogical model promote the generation of problem situations in health courses related to the contextual needs of different types of patients.

It is important to bear in mind that to comply with the strategies most used in dentistry and its disciplines, such as case study and PBL, the use of virtual tools and the development of ICTs are required, since these are indispensable to acquire abilities in health clinical practice (Suasnabas-Pacheco; 2019).

Today, technology generates new challenges and teaching methods for teachers and students. In this methodology, evaluation is important because it helps to improve the learning process, but what is the best way to evaluate our students in the virtual world? Concept maps, videos, forums, portfolios are constantly used.

The strategy I use to evaluate my students in the health area is related to the way the student solves the problems; that is, if my teaching strategy used is the PBL, I evaluate the strategy used by the trainee to solve the difficulty and if we talk about health, how they develop a real clinical case and provide an adequate solution.

Development

The experience as a teacher in the area of health in remote attendance.

Approximately five months ago my face-to-face courses became virtual; from this moment I looked for possibilities and strategies to transform my virtual classes in order to find a way for my students to feel that through ICT they were receiving wide and innovative knowledge.

At first I used tools that allowed me to ask them problem questions and evaluate the way they solved a problem; in this case I used a 2.0 tool from the web called Padlet. This tool allows students to share multimedia content, ask questions that each of the students could solve. It is basically a collaborative board, using it was very useful because it allows to call the roll and make the class didactic. For the health area I constantly use Socrative, an application born in 2010 at MIT, USA, that uses mobile devices in the classroom as support for classes. Socrative allowed for the creation of clinical cases with multiple responses in order to provide feedback for each of the student's answers, a significant function in the evaluation of students. As mentioned by Maldonado (2009),

the feedback of the activities performed is important for the teacher and student because it allows interaction and dialogue between its participants. This builds knowledge and learning.

Later on I wanted to innovate with my students and make didactic complementary activities in their independent time applying the knowledge acquired in class. For this I created a workshop with twelve students with the aim of leaving aside master classes and give the student the possibility of having a practical session through the use of ICT. The challenge was to find five scientific articles from indexed journals related to each of the topics seen in class; with this resource each student created mind maps, explained them to their classmates and researched each of the tools for their elaboration.

Within the proposed activities, we considered the construction of a video based on one of the articles read. Each student recorded a video of approximately three minutes where they explained the article of their choice and explained it to their classmates. Each student used his or her imagination and creativity which allowed for very enriching results from these activities.

Discussion

Thanks to the use of virtual tools and activities, the students of the dental laboratory program in the health area managed to gain real learning experience that kept them motivated to acquire each of the skills and learning outcomes related to the courses of their curriculum.

The objective of this activity was to leave aside master classes and give students the possibility of a practical class through the use of ICTs. Thus, the required topics were assimilated and research skills were strengthened, while creating their own content.

The challenge was to find five scientific articles from which they had to select two. Their first activity was to look for a technological tool that would allow them to elaborate a mind map and explained it to their classmates in class. With the second article they had to record a creative video in which they described to their classmates the chosen topic.

This helps evidence that the adequate use of virtual strategies and tools in remote attendance guarantees learning in the health area through the solution of clinical cases taking into account the context needs of the population.

Results

Through these activities students were motivated to create content, research new topics, implement the use of ICTs and strengthen their creativity. These strategies will allow them to make a difference in their future professional practice; for this reason, these tools used in the health area indicate that these works create in the student critical thinking from individual and group reflection. Listening to other points of view contributes, without a doubt, to a more accurate performance when the student faces different situations.

Likewise, the fact that the students are the ones who manage their class, allows for an innovative learning environment and develop in them critical thinking, autonomous through teamwork and, of course, handling of new technologies.

Evidence

The following figures present some mind maps made by the students of the Occlusion course of the Dental Lab Technician program; as seen in the images, each student created with different tools their map and, additionally, many inserted images related to the subject.

Figure 1. Mind map made by a student Leiza Portilla.

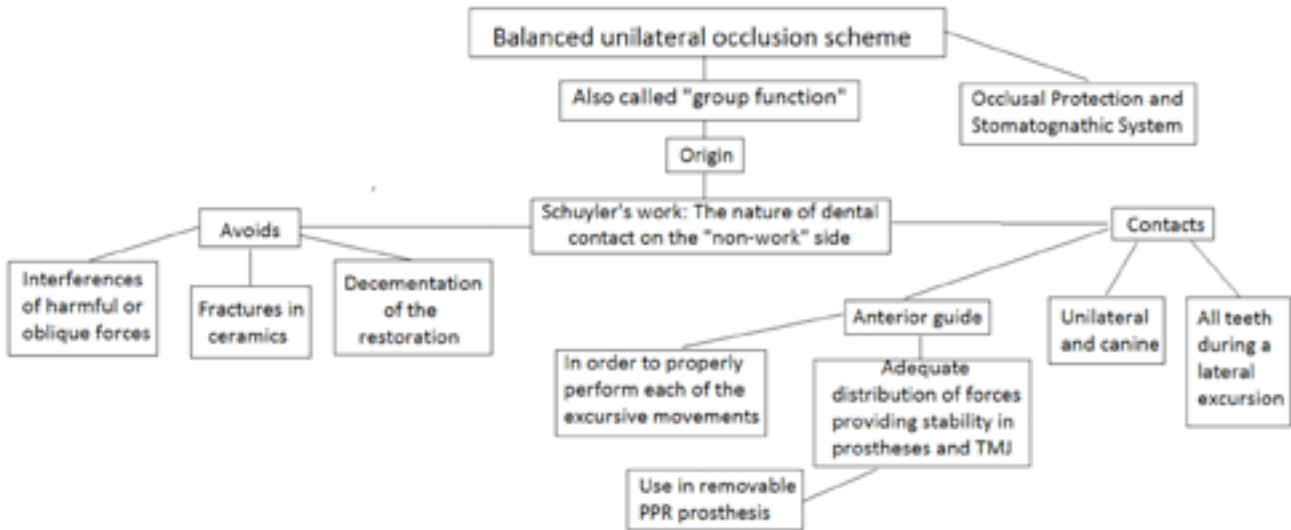


Figure 2. Mind map made by Andrea Mulett.



Figure 3. Mind map made by a student Daniel Alejandro Martínez.



Figure 4. Mind map made by a student Martín Vergel.

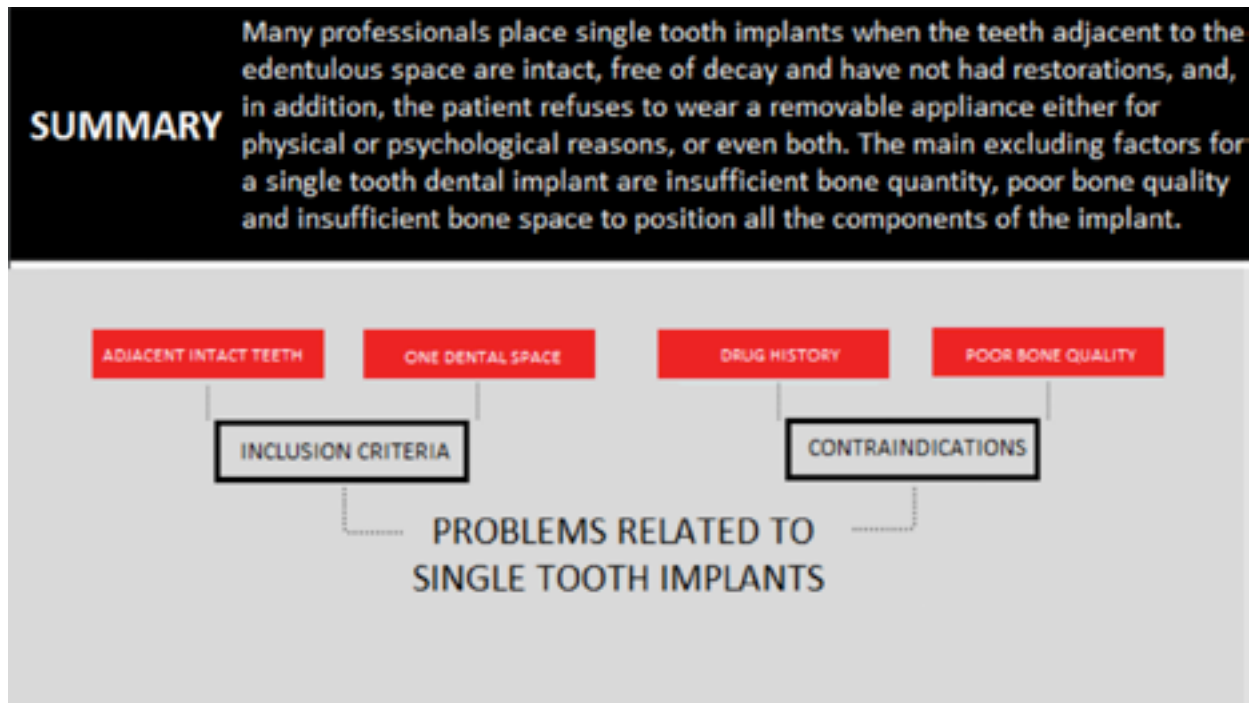


Figure 5. Mind map made by a student Diego Fernando Vélez Castillo.

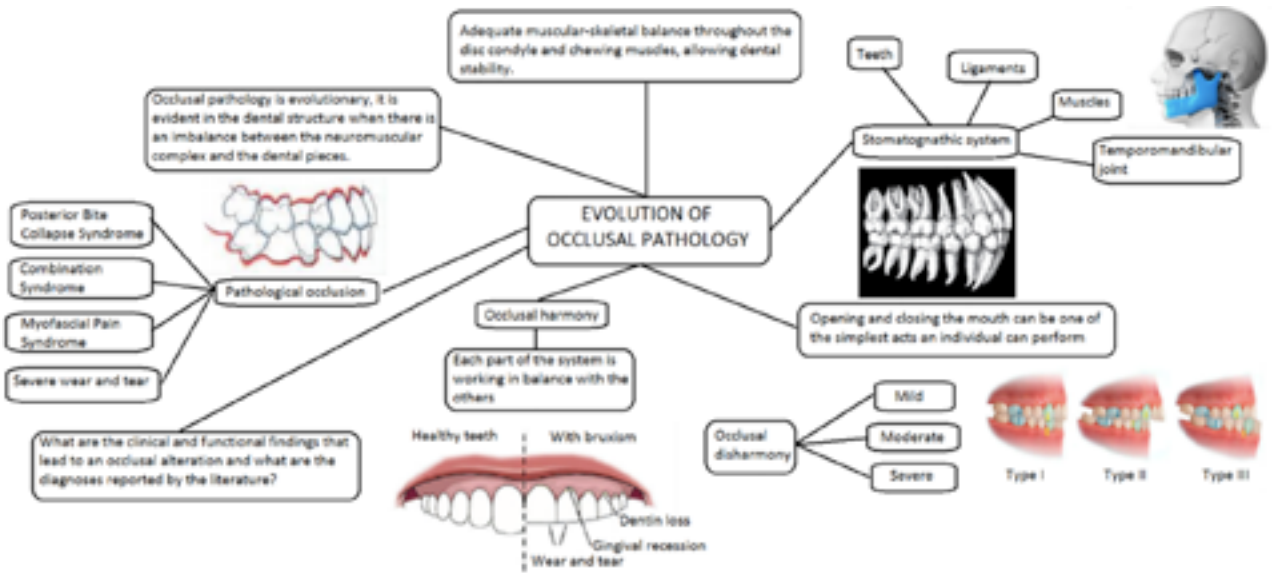


Figure 6. Mind map made by a student María Alejandra Vega.

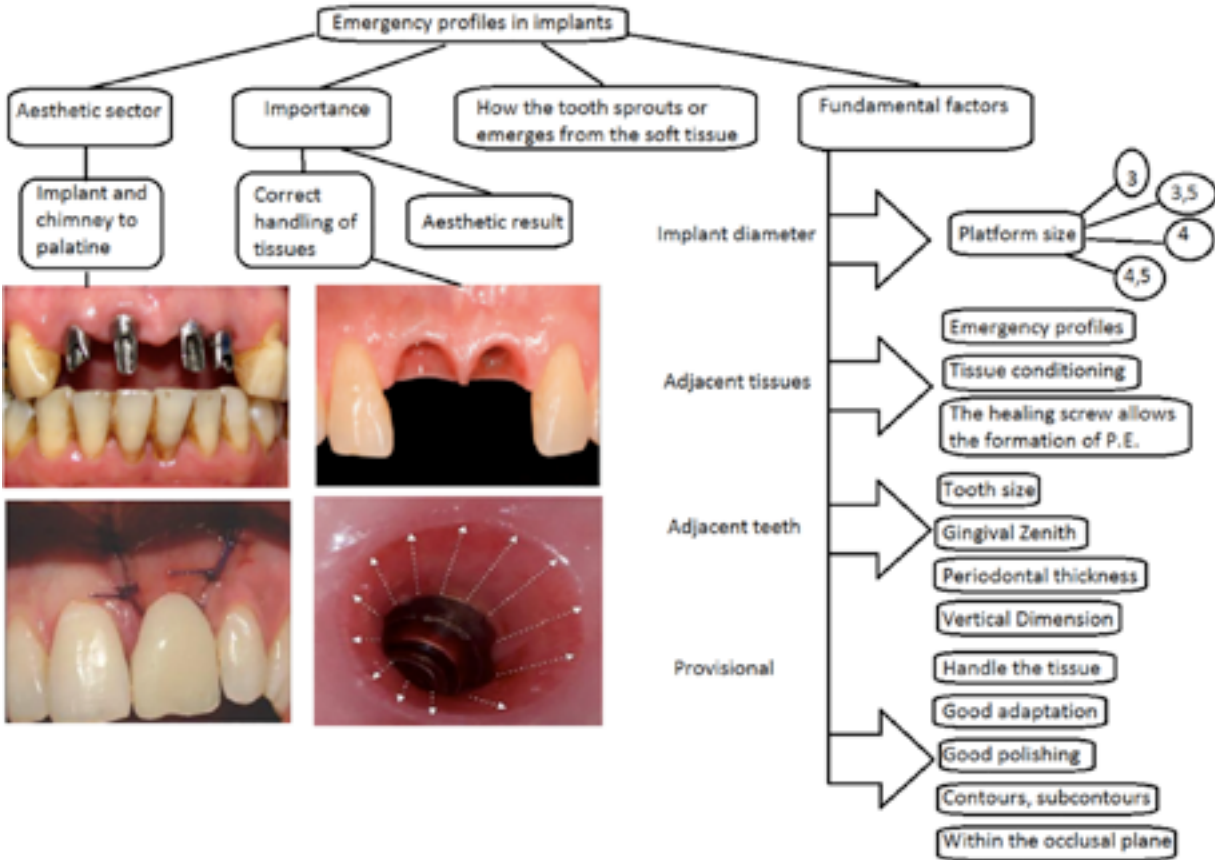
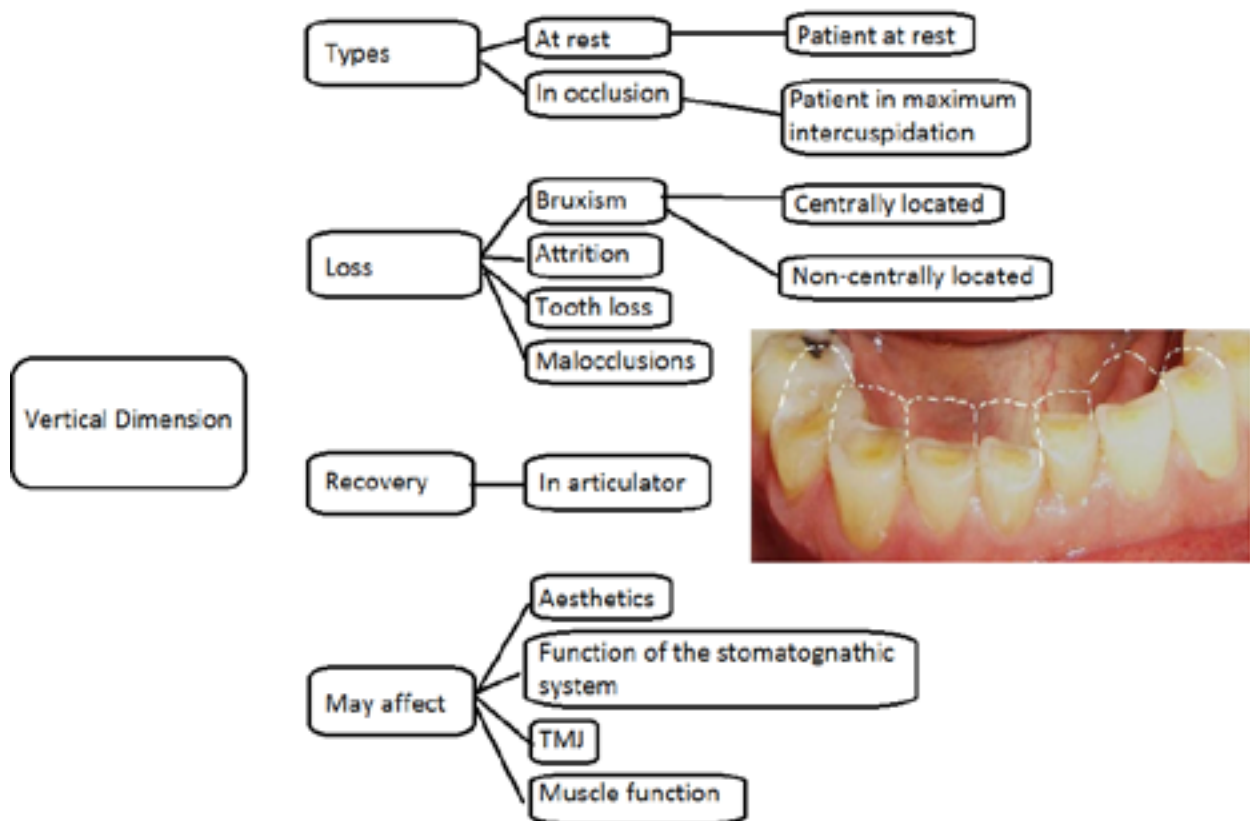


Figure 7. Mind map made by student María Alejandra Vega.



The following are images of the videos recorded by the students; these videos were created with tools they researched and used to develop this material which served as a teaching tool for the class.



Image taken from video created student Daniel Martinez by second-semester of the Occlusion course.



Image taken from video created student Daniel Ferreira by second-semester of the Occlusion course.



Image taken from video created student Diego Andrés Vélez by second-semester of the Occlusion course.

Once all the experiences were carried out, it was observed that students develop a creative, critical and autonomous thinking that allows them to innovate in their learning. In health, this type of teaching tools and strategies are indispensable to acquire theoretical skills that are later applied in clinical and preclinical practice in health.

Bibliographic

- Cayo, C., & Agramonte, R. (2020). Challenges of Virtual Education in Dentistry in Times of Pandemic COVID-19. *Rev Cuban Stomatol*, 57(3). http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0034-75072020000300017
- Hernández, D. (2010). The design and incorporation of didactic strategies in the teaching-learning processes in Dentistry. Adequacy of Problem-Based Learning. *Journal of Educational Research* 10, 1-32. http://cdigital.uv.mx/bitstream/123456789/9139/1/hernandez_odontologia.pdf
- Karsenti, T., Savoie-Zajc, L., & Larose, F. (2001). Les futurs enseignants confrontés aux TIC: changements dans l'attitude, la motivation et les pratiques pédagogiques. *Éducation et francophonie*, Volume XXIX, Number 1, Spring-Summer, 1-41. https://www.acelf.ca/c/revue/pdf/XXIX_1_086.pdf
- Román, C.E. (2009). On feedback in online higher education. *Universidad Católica del Norte Online Journal*, 26, 1-18. <http://redalyc.org/pdf/1942/194215516009>.
- Suasnabas-Pacheco, L., Campos-Mancero, O., Rivera-Guerrero, C., Zumba-Macay, R., & Escudero-Doltz, W. (2019). A look at information and communication technologies in dentistry. *Mastery of Science*, 5(2), 497. <https://dialnet.unirioja.es/servlet/articulo?codigo=7155109>
- Stuberg, W. & McEwen, L. (1993). Faculty and clinical education models of entry-level preparation in pediatric physical therapy. *Pediatric Physical Therapy*, 5, 123-127. <https://experts.nebraska.edu/en/publications/faculty-and-clinical-education-models-of-entry-level-preparation->
- Tarazona, J. (2005). Reflections on problem-based learning (PBL): an alternative in medical education. *Colombian Journal of Obstetrics and Gynecology*, 56(2), 147-154. http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0034-74342005000200006&lng=en&tlng=es.