Dentistry professors' perception of learning assessment by the OSCE

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ABSTRACT

Higher education in health has, among others, the challenge of allowing students to develop knowledge, skills, and attitudes for the exercise of their profession. In this way of teaching, the assessment of learning becomes an ally, allowing the institution, teachers, and students to reflect on the result of their actions. The Objective Structured Clinical Examination (OSCE) is an instrument for assessing clinical competencies initially used in the Medicine course and since then expanded to other majors in the health sciences. The objective of this study is to report the experience of inserting the OSCE in the Dentistry course at Faculdade Pitágoras (Unidade Guarapari/ES). A workshop was held for professors in the area, covering three activities: explanatory lecture presenting the OSCE, demonstration and practical experience of planning and elaboration of the evaluation instrument, and discussion with the participants about the tool applied to their teaching reality. After four months, for institutional organization, the OSCE was implemented as a formative and summative assessment in all classes of the course, which were already inserted in the dental clinic, taking into account adaptations suggested by the teachers to meet the needs of the local reality, but preserving the model's adherence to the assessment of estimated competencies. Experience points to the OSCE as an excellent assessment tool in Dentistry and the workshop dynamics as a tool for understanding, demonstrating that teacher training was essential to success. Finally, the group is motivated to continue adopting the OSCE as an instrument for assessing clinical competencies.

Descriptors: Dentistry. Educational Assessment. Clinical Competence.

1 INTRODUCTION

Student assessment plays an essential role in the training of professionals in the health area, and it can be said that it is a complementary part of teaching and learning[1]. For example, in many years of school life, the assessment of learning carried out through school exams was wrongly conceived[2]: education was exposed to how to communicate ready and finished knowledge that should be recorded and reproduced at the time of the test (school exams). In this view, learning was equivalent to copying information into a notebook and reproducing it as faithfully as possible when requested[3].

While school exams end with grading, learning assessment can only be concluded with an efficient intervention, if necessary. In this sense, it leads to a path of acquiring competencies, being articulated with the pedagogical project and with its consequent

teaching project[4].

The assessment proposes to identify and interpret the students' knowledge, skills, and attitudes given the expected changes in their behavior proposed in the objectives of the pedagogical project. Therefore, it is a continuous procedure throughout the development of the discipline or course that allows diagnosing and controlling the teaching-learning process, modifying it when necessary[5]. In this way, it is necessary to understand how to evaluate learning, an action that we still cannot, as our routine demonstrates, which implies not evaluation, but school exams[2].

When this process is intended to assist decisions to improve learning, it is called formative assessment in its function. When the intention is to synthesize the learning up to the moment of the evaluation to classify the progress, it is called summative evaluation. Regardless of the established purpose, the evaluation result must be shared and clarified to the student, promoting feedback, which is essential to give meaning to the evaluation[1]. It is, therefore, a tool that should not only serve for the attribution of grades but has the purpose of guidance so that the teaching-learning process can be accompanied[6].

Due to the curricular reformulations of courses in the health area, a new professional is demanded, and universities are undergoing a fundamental transformation in the teaching process, replacing the traditional methodology with active methodologies[7]. In this context, the school examination needs to give way to the assessment of learning[2].

During the teaching process, the teacher needs to use different instruments to evaluate his student, making analyses throughout the educational path, aiming at a result and the student's progression[8].

In this sense, it is clear that diversifying evaluation forms is essential for forming a future professional.

The traditional clinical assessment method, in which the teacher verifies student performance, has some flaws, such as (a) a large number of patients have different degrees of needs and are attended by different students; (b) the subjectivity of the examiner, which results in an inter-examiner variation in the evaluation of the same procedure; and (c) the lack of consistency and objectivity in the practical assessment, considering the plurality existing in a class and the need to train a professional capable of solving problems in different situations[9].

The OSCE instrument (Objective Structured Clinical Examination) can be used as an adequate assessment for the achievement of clinical competencies, as it provides the student with the experience of activities similar to the reality they will face in clinical care and their future professional performance. . First described in 1975 by Harden for the medical course, to avoid many of the disadvantages of traditional clinical examination[10], the instrument is widely used to assess clinical skills for other majors in the health area[11].

This instrument proposes to evaluate a student's competencies in a clinical scenario, measuring their ability to synthesize information and apply knowledge[10]. Thus, it seeks to respond to deficiencies in the validity and reliability of traditional methods of assessing clinical skills[12]. In addition, all students are in the same context, which makes the analysis more objective. It is also possible to structure a relevant topic of the discipline and provide students with the opportunity to learn from the feedback on their performance in the exam[13].

The selection of instruments used in student assessment should be based on those that best fit the competence being assessed. For

example, the “Miller Pyramid” can help[1], as this model is based on “knowing,” followed by “knowing how to do it,” “showing how it is done,” and, finally, “doing it.” Therefore, it is a conceptual model that illustrates the stratum of “knowing” and “knowing how to do” the cognitive bases. The instruments used to assess cognitive skills are tested with open or multiple-choice questions and oral exams. The “show how you do it” stratum, skills, and attitudes are assessed. And in the “do” stratum, there is the evaluation of the student’s performance in training or the professional already graduated.

Bloom’s taxonomy helps define learning objectives, determining its multiple domains, categorized into cognitive, affective, and psychomotor[14]. Choosing to evaluate one of these dimensions helps us plan and elaborate on the instrument used in such a process, contributing to establishing criteria that facilitate its objectivity[1]. Therefore, it is understood that the traditional written test that considers only the cognitive domain does not include the measurement of the psychomotor domain, which is so necessary for the health professional and needs to be analyzed by other instruments[15].

Thus, the objective of this study is to report the experience of professors in the insertion of the OSCE in the Dentistry course of Faculdade Pitágoras (Unit Guarapari/ES) as a new evaluative learning instrument.

2 EXPERIENCE REPORT

The Research Ethics Committee approved this research of the Health Sciences Center, CAAE 28119220.9.0000.5060. Faculdade Pitágoras (Guarapari/ES) is a private institution located in the city of Guarapari, in the State of Espírito Santo, southeast Brazill.

The experience report described here includes the presentation workshop for professors of the Dentistry course (specific areas or professional training cycle) about the OSCE and, after four months, its implementation as an evaluation method in the classes that attended clinical practice, which occurs, in the institution, from the fourth period.

Workshop with teachers:

The professors who made up the staff of professors in Dentistry were invited to participate in a workshop, to get to know the OSCE evaluation instrument. Lasting 3 hours, the course was divided into three stages, held on the same day: providing information to professors through an explanatory lecture; demonstration and practical experience of the planning and elaboration of the method; debate on their perception of the relevance, logistics, and benefits of the OSCE, to implement this assessment method in the course

Regarding the sample profile, all workshop participants also work as dentists in private practices. Most of them have less than fifteen years of engagement as a teacher and did not know the OSCE. Instead, they seemed to be involved and interested in knowing the methodology, actively participated, and asked questions about the topic during the event. In the end, they were excited and empowered to use the evaluative method learned there, claiming to be able to carry out planning and execution of the OSCE in the discipline they were instructing.

At a later meeting, it was proposed that the OSCE be carried out during the semester as a formative and summative assessment for all classes that had entered clinical practice. Thus, after four months of the workshop, the tool was used with students.

Application of the OSCE method with students

As indicated in the workshop, the assessment was structured through stations

(figure 1), that is, assemblies of problem situations, in which clear instructions are described for the student to solve them. Thus, he travels through each station and performs tasks in a rotation of the proposed activities in the pre-established time.

Each teacher was responsible for planning the stations of their subject, estimating a time of five minutes for its development, as recommended in the literature[16,17].

In addition, a minimum of five stations per subject was determined, as also described in the literature[16], and in some classes, with fewer students, the number reached ten. Thus, it was possible to evaluate the competence of each evaluation station developed, as shown in figure 2.

Figure 1. OSCE stations set up for demonstration for teachers

- Clinical reasoning: a description of a clinical case was presented, with the presence of the clinical file, radiographs and photographs, so that the student could make the diagnosis and propose the treatment.
- Manual dexterity: with the use of a dummy from dental laboratory practices, a simulation of the procedure for positioning the retractor wire used in the Dentistry/Prosthesis area, absolute isolation in the Endodontics area and suturing in the Surgery area was requested.
- Communication: it was necessary to communicate with the work team, by filling in the referral.

Figure 2. Skills assessed at stations

An observation protocol was prepared for each station, a kind of checklist containing

detailed descriptions of the expected behaviors, highlighting the competencies that were being evaluated. It was also stipulated that, in the first application of the instrument, the order for carrying out the exam would be alphabetical and that it would be reversed in the second evaluation of the semester.

For the execution of the OSCE, all activities in the dental clinic of the faculty were suspended since the stations would be set up in that physical space. The boxes used were numbered, facilitating the individualization of each of the stations and signaling the flow of the entire evaluation circuit. For each subject, one day was reserved for the implementation of the OSCE, and the respective professors who make up the staff were obligatorily present in the evaluation. In some, with a more significant number of students, help was requested from other faculty members and staff.

Upon arriving to comply with the OSCE, the students had their objects collected and waited in a room until they were called to carry out the assessment. At that moment, the teachers passed on some information to the students, such as the option for alphabetical order to follow the test, the number of stations, the time to develop them, among other instructions necessary for the execution of the evaluation, including clarifications about the individual answer sheet.

The students were called one by one. The first would go to the initial station, answer the proposed question, perform the task within the five minutes available, and move on to the next one, making room for the next student to occupy the first station. This procedure was carried out until all students had completed the course in all stations (figure 3).

Figure 3. Realization of OSCE in a clinical practice discipline

It is necessary to clarify that, in some stations, especially those in which the student would perform procedures and not only individually analyze a specific-objective question, there was the presence of the evaluator to monitor him. In such cases, the

answer field on the worksheet individual responses was filled in by the evaluator/observer, marking whether the command was performed correctly, performed partially or not, according to guidelines and command protocols in possession of the professor, who described in detail the expected behavior, template of appropriate conduct.

The time of each station was uniformly controlled by the evaluators, assisted by a professional with a stopwatch who determined the rotation. When passing through all the stations, the student turned in his completed answer sheet and waited in a specific room until the other colleagues followed the same path. We emphasize that all were evaluated under the same conditions, configuring the objective character of the OSCE.

At the end of the exam, the teachers thoroughly transferred all the stations to a single environment to demonstrate the answer keys. The intention was to bring together all the students participating in the OSCE to influence the final assessment. Observations, comments, and analyses were based mainly on the students' points that showed more significant difficulties. Thus, they were able to ask and even explain the reasons that led them to misunderstand or certainty in the analysis of the questions, configuring the expected feedback and strengthening the improvement of educational training.

After carrying out the OSCE in the first group, it was already possible to detect points to be improved for the following ones because the evaluation process was dynamic. As the evaluation was carried out, vulnerabilities in the choices adopted could eventually be perceived. Furthermore, with the final stage of feedback from students and teachers, it was possible to reap the fruits of the positive and negative criticism.

It is important to emphasize, therefore, that it is essential to get organized, make a list of all the materials needed to compose the station, develop logistics so that the stations are checked for each student exchange, and arrive in advance to organize the stations, which will ensure that the assessment is carried out without delay and as planned.

3 FINAL CONSIDERATIONS

Learning assessment is prominent in the pedagogical practices applied to the teaching/learning process. The mechanisms used need to give it quality, pointing out its strengths and weaknesses to reorient the methodology, if necessary[12].

When using the OSCE evaluative instrument, several competencies can be evaluated, allowing one to visualize the class's learning, detect success or failure in education, and reinforce or reorient the teaching practice. The experience reported here brought essential behaviors that the students had not yet acquired. It was also possible to detect behaviors developed as expected for that period of the course, visualizing the success of the teaching-learning process.

The planning of an evaluation must be consistent with its functions (diagnostic, formative, and summative), adjusting to the method that best adapts to the competencies that one wants to know. Competence in the health area can be conceptualized as a domain, at an adequate level of quality, of different skills, of different natures (cognitive, psychomotor, and practical), necessary to perform actions aimed at solving problems[1].

The OSCE is an assessment instrument that can be carried out in any modality, and the diagnosis has the purpose of raising needs. The training follows the course of the teaching-learning process, and the summation gives the

final product of what was taught. Using the OSCE as a summative and formative assessment in Dentistry, it was possible to assess cognitive skills, checking students' knowledge, the psychomotor ones, through the execution of procedures; and affective, verified by the execution of procedures in situations of the stress of the teaching-learning process, and the sum gives the final product of what was taught. Using the OSCE as a summative and formative assessment in Dentistry, it was possible to assess cognitive skills, checking students' knowledge; the psychomotor ones through the execution of procedures; and affective, verified by the implementation of guidelines in situations of stress.

It starts from the premise that specific evaluation methods contemplate knowledge valorization but suffer from a lack of stimulation for reasoning and criticism[12]. Therefore, it remains essential to establish which skills the student needs to develop at each stage of the course and, from there, to use the evaluative instrument that best evaluates them[1].

There are several possible evaluation stations when planning an OSCE. It is observed that when the desired competence in each stage of the course is established, and the teacher works in the sense that the student acquires it, this instrument allows for feedback to the teacher since it is possible to certify whether the student has achieved it embodies such knowledge/skill/attitude. It allows, therefore, to verify the success of the teaching-learning process and if it is necessary to make adjustments in the face of possible and eventual learning difficulties of the students.

Practical assessment is essential for the construction of satisfactory learning, and its practice is established when the facilitator commits to the student learning what is being taught. Through pedagogical science, it is possible to provide elements for educational training capable of generating significant results, contributing to the development of the student[2].

It can be seen that the OSCE allows to detect behaviors and guide the teaching practice in case the desired performance is not achieved.

This is what was found in the experience reported here, since the repetitive errors of the evaluated students were the object of systematic and effective correction.

The feedback in the OSCE evaluation method favors the student to realize that he made a mistake and reinforce what he learned, giving meaning to the evaluation. Thus, according to Luckesi (2011)[2], assessment is not an end but becomes an integral part of the teaching-learning process. Teacher feedback even guides certain behaviors for the future, such as emphasizing a particular teaching method in areas of more significant demonstrated collective deficiency and perpetuating what has been fully assimilated.

Still, in the feedback stage, the students who participated in the reported experience realized the importance of reinforcing specific content in a practical context. Moreover, given the dynamic and objective teaching posture, they expressed receptively to this new evaluation and learning method.

With the experience carried out, it was also observed the possibility of integrating interdisciplinary evaluation contents in the same station, such as Endodontics and Prosthodontics, allowing students to understand the need and importance of mastering basic concepts of Dentistry as a whole.

The Education Guidelines and Bases Law (LDB No. 9,394/96)[18] prescribes that the assessment of learning must be continuous and cumulative, and, in this process, instruments that value a global view of the contents explored must be used to allow the student to be able to use various resources in the construction of their

competences.

In teaching practice, the need to diversify assessment instruments is perceived, as this dynamism is aligned with multiple skills, taking into account the differences between people and their inherent skills.

Thus, although it presents itself as an adequate tool for assessing many clinical competencies, the OSCE may not be suitable for all, and other assessment tools should be adopted[1].

The extraordinary complexity of the OSCE is in the preparation of the assessment, which requires time for the formulation, selection of cases, and the need for physical space destined only for activities, such as rooms for students to confine themselves before and after the exam. It should be noted that the physical space for carrying out the stations can be the dental clinic, but, if applicable, it is necessary to suspend activities on the day of the evaluation. In addition, the teachers must participate in the planning and arrive in advance to organize the stations and establish the checklist for those who will observe/evaluate the students.

This trend gives rise to the construction of assessment methods that can rely on different instruments, which will provide information of the most varied natures, not only on student performance but also on the characteristics of teaching and learning processes. It also provides the possibility of re-signifying evaluation in university education based on planning that associates the objectives of the course's pedagogical project, the desired final profile, teaching methodologies, and evaluation strategies and methods[1]. This is possible because the student has the opportunity to learn from the feedback. That is, by correcting/discussing the stations, the teacher makes the evaluation part of the teaching-learning process, and the student learns during the evaluation process

Luckesi (2011)[2] makes it clear that to know how to evaluate, it is necessary to understand the theoretical concepts about evaluation. Still, the most important thing is to put it into action. Moving from theory to practice requires experiment, analysis, understanding, and searching for new ways of knowing how to do it. In this sense, it becomes relevant to conceptualize the types of evaluation and their forms of use to understand and reflect on their concept and how to evaluate them in pedagogical practice, experience it.

In the reported experience, it was observed that the training of teachers was fundamental for the successful implementation of the assessment instrument in the classes. The practical understanding of the OSCE made it possible to verify the benefits of the methodology and bring clarity and certainty to the choice of the tool that was decided to use.

Lima et al. (2016)[19] concluded that "evaluating is, above all, a contract of communication between those who evaluate and those being evaluated, so that clarity, the legitimacy of the resources and instruments for carrying out this act must prevail." The authors are still emphatic in stating that there must be clarity on some points, therefore asking some specific questions to understand the desired evaluation process itself, namely: "why evaluate? What is the object of this evaluation? What do you want or consider necessary to evaluate? What are the methods and criteria used in this assessment? What points should be defined to see if the evaluation objectives were achieved or not?"[19].

Therefore, based on the experience reported, it is concluded that the assessment of learning should be seen as a dynamic and integrative instrument between the educational institution and the teacher so that, with better planning, it can improve the teaching offered.

The OSCE, from this perspective, becomes indispensable for the Dentistry course insofar as its results can be very expressive, especially with the feedback obtained after the evaluations, whether concerning the teachers, as they verify points that are being better internalized by their students, whether for the students themselves, as they see what is good and what can be improved in the teaching-learning process.

Thus, the OSCE proved to be an excellent evaluative instrument, allowing the teacher to diagnose his teaching practice to impact the institution's educational process, providing better ways to make learning effective, having clarity in propositions and communications between evaluators as a premise, and evaluated.

RESUMO

Percepção de docentes de Odontologia sobre a avaliação da aprendizagem pelo OSCE

A formação superior na área da saúde tem, entre outros, o desafio de permitir que o aluno desenvolva conhecimentos, habilidades e atitudes para o exercício da sua profissão. Nesse caminho de ensino, a avaliação da aprendizagem se torna uma aliada, permitindo que instituição, professores e alunos possam refletir sobre o resultado de suas ações. O Exame Clínico Objetivo Estruturado (*Objective Structured Clinical Examination*, OSCE) é um instrumento de avaliação de competências clínicas utilizado inicialmente no curso de Medicina e expandido desde então para os demais cursos das ciências da saúde. O objetivo deste estudo é relatar experiência de inserção do OSCE no curso de Odontologia da Faculdade Pitágoras (Unidade Guarapari/ES). Foi realizado *workshop* para professores da área, abordando três atividades: palestra explicativa apresentando o OSCE, demonstração e vivência prática do planejamento e elaboração do instrumento avaliativo; e discussão com os participantes sobre a ferramenta aplicada à sua realidade docente. Seguidos quatro meses, para organização institucional, o OSCE foi implementado como avaliação formativa e somativa em todas as turmas do curso, que já estavam inseridas na clínica odontológica, levando-se em consideração adaptações sugeridas pelos professores para atender às necessidades da realidade local, mas preservando a aderência do modelo em avaliar as competências estimadas. A experiência aponta o OSCE como ótimo instrumento de avaliação em Odontologia e a dinâmica do *workshop* como ferramenta para o entendimento, demonstrando que o treinamento de professores foi essencial para alcançar o sucesso. O grupo está motivado para continuar adotando o OSCE como instrumento de avaliação de competências clínicas.

Descritores: Odontologia. Avaliação Educacional. Competência Clínica.

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