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Evidence-based decision making by undergraduate dental students - Teaching proposal and student's perception

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## Abstract

**Aim:** Ever since Evidence-Based Dentistry (EBD) has become the paradigm for qualified dental care, teaching its fundamentals to undergraduate students became a need and a challenge. This study presents a component proposal that addresses the clinical decision-making process based on EBD foundations and the student's perception of it. **Methods:** The component was equally divided into an instrumentalization phase and a seminar phase. The former was used to address the context of EBD, its rationale and its tools. Instrumentalization focused on teaching students to search for and critically appraise evidence provided by systematic reviews of interventions. The seminar phase implied the application of these concepts in the solving of fictitious clinical cases. A cross-sectional design was conceived after the ending of the component, so the students could assess the component. The results were analyzed descriptively. **Results:** A component aiding at teaching decision-making processes based on EBD foundations was proposed. In general, the component was well assessed by the students, with more than 90% considering it good or very good. The moment it was offered, in the end of the course, was considered an important limitation. **Conclusion:** An undergraduate teaching proposal of EBD was presented and well assessed by the students. Raising the awareness of the undergraduate dental course as a whole is necessary to fully implement an EBD proposal and develop the required attitudes, knowledge and skills in dental students for a critical, evidence-based decision-making process.

**Keywords:** Teaching. Graduate Dental Education. Curriculum. Evidence-Based Dentistry. Problem-Based Learning

## Introduction

Systematic reviews are paramount in the Evidence-Based Dentistry (EBD) model, contributing valuable information for clinical decision making. On the other hand, they are loaded with complex epidemiological and statistical concepts, which may not be familiar to dentists lacking specific formation on the field<sup>1,2</sup>. Therefore, biostatistics, epidemiology and the philosophy of critical enquiry, along with searching electronic databases are enabling competencies to the 5-step model of evidence-based practice proposed, based on the Sicily statement (ask, access, appraise, apply, audit)<sup>3,4,5</sup>.

These competencies are supposed to be included in the dental curriculum, considering its local conditions, the type of student, budget and aims<sup>5</sup>. Yet, the implementation of EBD in the dental curriculum has faced several types of challenges. For one, there is no consensus of which elements are indispensable to be taught<sup>6,7</sup>. Besides, most dental faculty staff also need continuing education on EBD, since most of the required skills may not have been consistently addressed during their formation<sup>1,2,8</sup>. Also, the understanding from patients, faculty staff, students and the institution that the EBD model should drive clinical decisions is paramount to reliably implement it in the graduate dental curriculums<sup>2,8</sup>. Some of these barriers may be more difficult to overcome than others.

Lack of knowledge about clinical epidemiology and limited searching skills have been identified between dentists from the Brazilian Family Health Strategy as individual limitations for the incorporation of evidence in decision making processes<sup>9</sup>. Failure in implementing the EBD approach for oral health care has been associated to overuse of non-beneficial treatments and the underuse of treatments known to provide benefits to the patient<sup>5</sup> and may also impact cost and safety of the treatments offered<sup>7</sup>. Including EBD in the undergraduate dental curriculum requires that institutions and staff faculty understand its importance<sup>4,7</sup>. Fortunately, most of the faculty staff recognize its importance, present positive attitudes and willingness to learn it<sup>1,2,7,8</sup>.

Teaching of EBP in the undergraduate scenario has been mostly associated to the nursing course<sup>10</sup>. The 81 studies included in the scoping review of Larsen et al.<sup>10</sup> provided seven specific methods of teaching evidence-based practice: research courses and workshops, collaboration with clinical practice, IT technology, assignments, participation in research projects, journal clubs and embedded librarians. The first two were the most frequently identified<sup>10</sup>. Little information on educational approaches for teaching EBD is available<sup>5</sup>. Some of the strategies described are not specific for dentistry, and would combine online courses, workshops, problem-based approaches, and integrate didactic and clinical education<sup>5</sup>.

The approach to determine the educational strategy should consider which competencies are expected to be developed and those proposed by the Sicily statement seem to fairly summarize core knowledge, skills and attitudes expected in EBD<sup>4,5</sup>. Young et al.<sup>3</sup> also specified enabling competencies for EBD, namely biostatistics, epidemiology, searching in electronic databases and philosophy of critical enquiry. Such competencies may be developed combining educational strategies. This study assessed the undergraduate dental student's perception about the component proposed to address EBD foundations and enable clinical decisions to be taken based on the best evidence available.

## Methods

The study was designed as cross-sectional observational and involved all the students enrolled in the Integrative Topics I component in 2022-2. This component is proposed in the eighth semester of the nine semesters-based dental course in a Southern Brazilian Community University. It integrates clinical topics pertinent to dentistry into clinical case discussions, having EBD as the driving paradigm to decision-making by the students.

The methodological strategy of the curricular component associates two strategies proposed by Anastasiou and Alves<sup>11</sup>: the seminar and the case study. These strategies favor the development of the following skills: analysis, interpretation, criticism, raising of hypotheses, searching for assumptions,

decision-making and application of facts to new situations. The 40 hours of the component were divided into two distinct phases: the instrumentalization and the clinical case discussion seminars (Figure 1.A). Planning of the discipline considered that this was the first moment all the students would systematically search for studies in electronic databases to solve clinical problems and the first contact with elements of systematic reviews and randomized controlled clinical trials.

### *1 Instrumentalization*

During the instrumentalization phase, students were taught elements of Evidence-Based Dentistry (Figure 1.B). Didactic lectures were used along with reading of published studies and practices of conduction and interpretation of meta-analysis and interpretation of risk of bias and quality of evidence based on published studies as cases.

The EBD scenario was presented problematizing the complexity of decision-making processes in healthcare and the elements used to seek the best resolution. The pyramid of evidence hierarchy was shown to conclude that intervention decisions are best supported by systematic reviews of intervention studies. The competences pursued were the search for evidence to substantiate decision-making processes towards dental clinical cases, the analysis of the evidence and the synthesis of this evidence, which would coincide with the best intervention available to solve the case (Figure 1).

#### *1.1 Search*

The search capacity was developed by translating the clinical problems (Figure 2. A) into a searchable format (Figure 2.B) that would generate a search strategy (Figure 2.C). Indexed (MeSH) and free-terms were taught along with the Boolean operators. Specificity was prioritized to sensitivity, since the goal was to quickly identify the evidence produced to solve clinical problems, not to conduct a systematic review. When they were not available, students were advised to follow the pyramid of evidence hierarchy for interventions, and to seek for

randomized controlled trials. PubMed and Cochrane Library were the databases taught (Figure 2. D). PubMed is a general database that contains studies in the biomedical and health care fields, while Cochrane Library is specific of evidence-based health care content. The search strategy in PubMed required that systematic reviews and clinical trials be chosen using specific filters for these studies, while the second already presents them naturally.

### *1.2 Analysis*

Study analysis began with the aim and structure of randomized controlled trials and systematic reviews of interventions. Following, the outcome variables were characterized statistically and the effect measures for the dichotomous variables (odds ratio or risk ratio) and continuous variables (mean difference) were taught as a basis for interpretation of the meta-analysis of interventions.

The structure of the systematic review focused on the three methods of synthesizing results that collaborate for decision-making: meta-analysis, analysis of risk of bias and analysis of the quality of evidence to recommend the intervention. Exercises of meta-analysis conduction and interpretation were practiced using RevMan Desktop (Cochrane Collaboration) in the student's notebooks along with previously published data. Risk of bias assessment tools (RoB 1 and RoB 2) from the Cochrane Collaboration were taught and practiced using tooth whitening RCTs as reference. Also, the GRADE (Grading of Recommendations, Assessment, Development and Evaluations) approach was shown and practiced considering the interpretation of the parameters (study design, risk of bias, inconsistency, indirect evidence, imprecision and risk of publication bias) to determine the quality of evidence to recommend the intervention.

### *1.3 Synthesis*

Students were asked to check out the consistency of results from systematic reviews to synthesize a solution for the problem presented.

## *2 Clinical case discussion seminars*

For the clinical seminars students were organized in pairs and each pair received a raffled fictitious clinical case with themes of mastery of the mediator professors. Students were asked to search PubMed and Cochrane Library and select three systematic reviews on the issue, considering the following criteria: whenever possible, Cochrane reviews should be included, given the recognized rigor of these reviews. Also, recent reviews (published within the last three years) and reviews including meta-analysis should be prioritized. Students should analyze and synthesize the results of the three studies selected in a PowerPoint presentation of approximately 30 minutes and in a written resume of 400 words. Once presented, the clinical case was discussed in class and mediated by the professors using the EBD elements as reference.

### *3 Assessment*

Assessments considered cognitive, procedural and attitudinal aspects of the learning process. Two theoretical assessments were applied to assess the cognitive evolution; the first one in the end of the instrumentalization moment and the other one in the end of the seminars (Figure 1.A). The other assessments involved the clinical case seminar and the written resume. Both depicted procedures and decisions made by the students to solve the clinical case. The presentation was assessed based on the search in electronic databases and analyses and synthesis of the evidence available. Also, clarity and coherence in the presentation, mastery of content, resources used in the presentation, depth of the theoretical foundation and argumentation and participation of the group in the discussion composed the assessment of the presentation.

### *4 Component assessment by the students*

The student's perception about the component was searched after approval of the proposal by the institutional Ethics Committee in Research (protocol no. 5.785.222). Two questionnaires were applied to the students, after the end of the component. The first questionnaire focused specifically on how students perceived the component and contained 10 5-point likert-based questions regarding the teaching plan, the distribution of the instrumentalization

content, support materials, time spent on the component, the moment in the course curriculum, teacher's knowledge, teacher's ability to communicate, courseware, evaluation process and the component as a whole. The students could classify each item from very bad to very good. Also, two open questions asked for positive and negative aspects of the component and for suggestions to improve it.

The second questionnaire aided at understanding the student's perception of Evidence-Based Dentistry after the component. A free translation of the Spanish Questionnaire to Evaluate the Competency in Evidence-Based Practice (EBP-COQ Prof©) from Ruzafa-Martínez et al.<sup>12</sup> was applied to the students. Twenty-two 5-point likert-based questions pertaining to attitudes, knowledge and skills were applied to the students.

Data were analyzed descriptively. Sociodemographic variables (age and sex) were expressed as mean, standard deviation and percent frequency. Likert-based variables were expressed as median, minimum and maximum. Written considerations by the students were interpreted and expressed textually. Supplementary material containing the raw data is available in <https://doi.org/10.7910/DVN/EOV9X8>.

## Results

Forty-one students enrolled the component, out of which 33 (80.5%) provided the written feedback. The mean age of the respondents was  $22 \pm 0.94$  years and 81.8% were female.

Figure 3 presents the assessment of the component by the students. Most aspects were well assessed. The support material sent and the didactic material obtained the worst assessment, followed by the moment the component was ministered during the course.

Comments made by the students highlighted the potential of reinforcement of relevant clinical issues not addressed during the course and research issues. The students also brought to surface as a positive aspect the willingness of the

teachers to answer any questions or doubts, though they found one of them clearer in his explanations. In fact, a more didactic approach was suggested by the students along with the possibility that the component or its content is developed earlier in the course or throughout the course, as follows.

*“The discipline is good and adds a lot of knowledge for clinical practices and for those who intend to follow the field of research. However, it was offered too late.”*

*“It should be offered from the beginning of graduation.”*

*“More didactic activities.”*

*“Simplify the content further.”*

Table 1 presents the self-perceived Evidence-Based Dentistry competency of the students.

Table 1. Self-perceived Evidence-Based Dentistry competency in relation to attitudes, knowledge and skills

	<b>Strongly agree</b>	<b>Agree</b>	<b>Do not agree nor disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Median</b>	<b>Min.; Max.</b>
<i>Attitudes</i>							
EBD helps decision-making in clinical practice	16 (48.5)	16 (48.5)	1 (3.0)	0 (0.0)	0 (0.0)	2	1;3
I am grateful for the availability of scientific evidence that supports the care I practice	16 (48.5)	15 (45.5)	2 (6.1)	0 (0.0)	0 (0.0)	2	1;3
EBD increases the autonomy of the nursing profession	13 (39.4)	19 (57.6)	1 (3.0)	0 (0.0)	0 (0.0)	2	1;3
I am grateful or would be grateful for the application of EBD in my work center	9 (27.3)	21 (63.6)	3 (9.1)	0 (0.0)	0 (0.0)	2	1;3
EBD is one of my professional priorities right now	6 (18.2)	14 (42.4)	12 (36.4)	1 (3.0)	0 (0.0)	2	1;4
The application of EBD improves patient care	13 (39.4)	16 (48.5)	4 (12.1)	0 (0.0)	0 (0.0)	2	1;3

I am willing to make a greater effort to apply EBD in my clinical practice	11 (33.3)	18 (54.5)	3 (9.1)	1 (3.0)	0 (0.0)	2	1;4
I believe I should gain more training in EBD	16 (48.5)	13 (39.4)	3 (9.1)	1 (3.0)	0 (0.0)	2	1;4
<i>Knowledge</i>							
I know how to formulate clinical questions structured according to the PICO question (patient, intervention, comparison and outcome)	8 (24.2)	16 (48.5)	6 (18.2)	2 (6.1)	0 (0.0)	2	1;4
I know the main webs with information that has already been critically evaluated (Cochrane, NICE...)	12 (36.4)	17 (51.5)	4 (12.1)	0 (0.0)	0 (0.0)	2	1;3
I know the aspects that determine the quality of quantitative research	10 (30.3)	15 (45.5)	8 (24.2)	0 (0.0)	0 (0.0)	2	1;3
I know the evidence level of the different designs of research studies	7 (21.2)	16 (48.5)	9 (27.3)	0 (0.0)	0 (0.0)	2	1;3
I know the degrees of recommendation that endorse the introduction of health interventions	8 (24.2)	15 (45.5)	7 (21.2)	2 (6.1)	0 (0.0)	2	1;4
I know the meaning of the main measures of association and effect size (MD, RR, OR)	7 (21.2)	16 (48.5)	9 (27.3)	1 (3.0)	0 (0.0)	2	1;4
<i>Skills</i>							

I feel able to pose a clinical question to initiate a bibliographic search for scientific evidence	7 (21.2)	12 (36.4)	12 (36.4)	2 (6.1)	0 (0.0)	2	1;4
I feel able to carry out structured bibliographic searches in the main databases	6 (18.2)	21 (63.6)	4 (12.1)	1 (3.0)	1 (3.0)	2	1;5
I feel able to evaluate the methodological quality of a scientific article	5 (15.2)	14 (42.4)	14 (42.4)	0 (0.0)	0 (0.0)	2	1;3
I feel able to interpret the effect size and precision of the results of a scientific article	4 (12.1)	16 (48.5)	10 (30.3)	3 (9.1)	0 (0.0)	2	1;4
I feel able to evaluate the applicability of the results of a scientific article in my work center	2 (6.1)	16 (48.5)	12 (36.4)	3 (9.1)	0 (0.0)	2	1;4
I feel able to analyze a clinical problem based on the assessment of the patient and/or the evaluation of his/her health outcomes	3 (9.1)	24 (72.7)	4 (12.1)	2 (6.1)	0 (0.0)	2	1;4
I feel able to communicate to my colleagues the results obtained with my clinical practice	3 (9.1)	22 (66.7)	8 (24.2)	0 (0.0)	0 (0.0)	2	1;3
I feel able to collaborate in (or lead) changes in clinical practice in my work center	3 (9.1)	23 (69.7)	7 (21.2)	0 (0.0)	0 (0.0)	2	1;3

Most students presented positive attitudes regarding the Evidence-Based Dentistry. The lowest percentages of 'Strongly agree' or 'Agree' were related to the assertion 'PBE is one of my professional priorities right now'. When it comes to self-perceived knowledge, for most questions, between 20-30% answered 'Do not agree nor disagree' or 'Disagree'. The highest agreement level was related to the awareness of evidence databases critically assessed, such as the Cochrane Library. The lowest agreement level of all was related to the Evidence-Based Dentistry skills, including the capability of posing a structured clinical question for evidence search, assessing the methodological quality of a scientific study, interpreting the effect size and precision of a study evaluating the applicability of a scientific study in the clinical setting.

## Discussion

A curricular component was proposed considering the importance of introducing EBD into undergraduate dental education. The cases proposed required the systematization of an answerable question, the search for evidence, the appraisal and synthesis of this evidence, which, in this case, should bring to light the best treatment alternative available. The component was considered good by 54.5% of the respondents and very good by 39.4% (Figure 3). Teacher's knowledge and ability to communicate were important issues in favor, followed by the teaching plan and the distribution of the instrumentalization subjects. Support material and courseware had the worst assessment, followed by the moment in the course (Figure 3). Some respondents mentioned that the proposal would be better provided earlier.

This component was faced as an opportunity to introduce the EBD model as parameter for the discussion of clinical cases. Also, one assumed that elements of biostatistics and epidemiology had been only superficially addressed in Public Health disciplines. Therefore, an instrumentalization moment was planned so that it would introduce foundations of the model and tools applied in it. Instrumentalization addressed search, analysis and synthesis of the evidence to recommend a given treatment for each clinical case proposed (Figure 1).

Search included the 'ask' and 'access' competencies<sup>4</sup>. 'Ask' required the ability to transform the clinical case into a structured question, while 'Access' required the buildup of a search strategy that privileged specificity to search for preappraised evidence, meaning systematic reviews (Figure 2). PubMed was chosen as a public database of MEDLINE indexed literature, allowing filtering for preappraised evidence along with Cochrane Library, which is specific for preappraised evidence<sup>13</sup>. Critical 'appraisal' of the systematic reviews addressed their structure, meta-analysis, risk of bias of RCTs and level of evidence to recommend the intervention.

Following the instrumentalization, the clinical case-based seminars in pairs were proposed as a self-directed learning, focusing on critical thinking and problem-solving skills for real-world dental scenarios<sup>11</sup>. The students should base their decision on fundamentals of comparative effectiveness research<sup>6</sup>. Problem-based learning (PBL) principles, namely the provision of adequate resources, planning of learning objectives, change of student behavior in active learning, use of examples, self-directed learning and self-assessment<sup>14</sup> were involved in the seminar phase. The case presentation and the written summary of the case resolution would constitute the 'apply' component of the Sicily statement, though a real patient planning and treatment was not involved. Still, a synthesis of the evidence collected regarding the comparative efficacy of the interventions, their safety, the risk of bias and the level of evidence was asked from the students. Therefore, four out of five steps indicated in the Sicily statement<sup>4,10</sup> were addressed in the model proposed.

The discipline was assessed positively by the respondents (Figure 3), including the teachers' performance, teaching plan and the distribution of the instrumentalization subjects. Support materials and the moment in the course curriculum were the most negative aspects (Figure 3). Some students mentioned that one of the teachers made the content simpler than the other, while other students asked for simpler approaches when teaching the core content of epidemiology, study design and biostatistics. Indeed, complex content were addressed during the instrumentalization phase.

The respondents complained that EBD was taught late in the dental course. One challenge of implementing EBD into undergraduate dental course is that it is a 'way of thinking', which may be difficult to incorporate in all institutional levels. Still, it should include institution and course management, the faculty staff, and the students<sup>6,7</sup>. Previous studies have shown positive attitudes from dental faculty and students towards adopting EBD to treat their patients<sup>1,2,8,15</sup>, though faculty has also manifested limited knowledge and skills related to it<sup>1,2,8</sup>. The lack of familiarity of dentists with elements of EBD hinder the evidence-to-practice translation and tends to oppose elements required from future dentists<sup>1,15,16</sup>. Moreira et al.<sup>15</sup> identified as barriers to the implementation of an EBD practice the reported lack of time, the resistance and criticism from colleagues and the difficulty in changing the current practice model. In fact, a collective decision in different institutional levels, based on the awareness of the importance of the EBD model in health care is required to fully implement this proposal in undergraduate level.

The moment in the dental course may have also affected the perceived EBD competency of the respondents. Positive attitudes were manifested by the dental students towards learning EBD (Table 1). A less positive attitude was observed when students were asked whether "EBP is one of my professional priorities right now", which may result from the moment it was learned (end of the dental course and decisions about their future steps). Still, it seems that the discipline introduced the importance of EBD in decision-making processes in health care. The perceived knowledge was considered high, though some disagreement was identified concerning knowledge of key elements for EBD, namely the formulation of a structured PICO question, the degrees of recommendation to endorse health interventions and the meaning of the main effect size measures (Table 1). Prior studies have recommended that complex concepts, including those related to EBD are better taught using multifaceted approaches, which includes lectures, group discussions, class activities, computer sessions among others<sup>15,17</sup>. Multiple educational interventions, with increasing complexity in different moments of the curriculum are more likely to improve knowledge, skills and attitudes than a single moment in the end of the course<sup>17</sup>.

Although all domains had similar median values, the domain related to skills presented the lowest proportion of positive answers (Table 1). Approximately 58% felt able to pose a clinical question and approximately 82% felt able to conduct a bibliographic search. Proposing adequate questions is key to properly search for evidence to solve clinical problems based on EBD. Brignardello-Petersen et al.<sup>13</sup> groups two types of question: background and foreground questions. The former focuses on definitions and mechanisms of action, while the latter is aimed at therapy, diagnosis, etiology, prevention and prognosis. These are the questions involved in EBD. In our component we addressed essentially the therapy questions and made clear that other types may be asked.

High percentage of neutral answers were observed in questions about critical appraisal skills of studies, which agree with those questions related to the knowledge domain that address these issues (Table 1). Epidemiological and statistical backgrounds were addressed during the instrumentalization to be applied in the seminars. Still, again, one must consider the moment and the time dedicated to complex concepts, challenging even for the faculty staff<sup>2</sup>. Clinical assessment, communication and collaborative work skills were mostly assessed positively. These skills are not exclusively developed in the Integrative Topics I, resulting from a trajectory built along the dental course in pre-clinical and clinical components.

The educational strategy proposed presented limitations, considering it was offered in the seventh semester of a nine semesters course as a theoretical means of addressing clinical problems, which did not involve the monitoring of real clinical cases. Students also pointed out that support materials were insufficient, although support material was indicated in basic references and two studies were provided in the native language<sup>18,19</sup>. Speculations are that the intensity of the English reading could have also contributed to that assessment, though no manifestation on that matter was observed. Additionally, time dedicated to the discipline did not allow addressing elements of knowledge translation or higher levels of decision-making, such as clinical guidelines, economic parameters or the use of systematic reviews or any other knowledge synthesis as the basic unit of knowledge translation<sup>13,20</sup>. though they were

discussed whenever possible during the seminars. Finally, motivation of students for active learning was not always optimal, which may result from previous experiences of passive learning and difficulties of assuming the protagonism of the process. Still, an active behavior from students is paramount for the success of the activity proposed and should be well mobilized.

## Conclusion

A clinical seminar discipline was proposed as a means for introducing the EBD model as paradigm for oral health care. Regardless of its limitations, mainly the moment it was proposed in the course, it was generally well assessed by the students. Most of them presented positive attitudes towards the EBD proposal, which is encouraging to introduce this model in undergraduate level, considering that it involves complex concepts that will be faced along their professional trajectory as dentists.

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## Disclosure

This study did not receive any funding. The authors declare having no conflict of interest of any nature or kind.

## Data Availability Statement

The data that support the findings of this study are openly available in Harvard Dataverse, at <https://doi.org/10.7910/DVN/EOV9X8>.

## Author's contributions

All authors have effectively contributed to this work and are familiar with its contents and all authors have read it and assume the responsibility for its contents. MAK was involved in the methodology, investigation, validation and

writing – review and editing. SARJ was involved in the conceptualization, data curation, formal analysis, project administration and writing – original draft.

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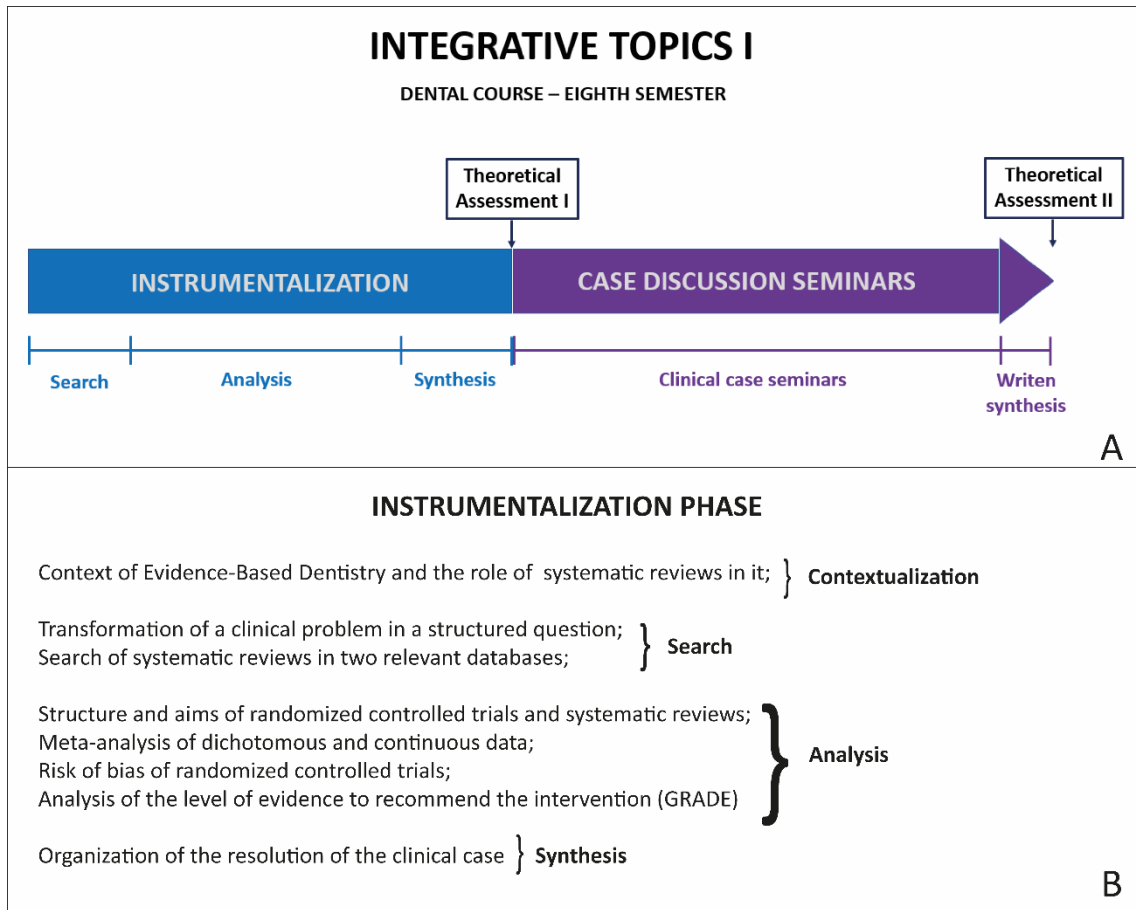


Figure 1. A – Phases of the Integrative Topics I component; B – Subjects related to the EBD model taught during the instrumentalization phase.

<p style="text-align: center;"><b>CLINICAL CASE EXAMPLE</b></p> <p>A 35-year-old female patient with normal occlusion has tooth 36 endodontically treated. At the end of the endodontic treatment, it is observed that the coronal remnant is reduced to thin walls on the buccal and lingual surfaces, and proximal preparations. <b>Given the specificities of the tooth after endodontic treatment, what is the most appropriate restorative alternative?</b></p> <p style="text-align: right;"><b>A</b></p>	<p style="text-align: center;"><b>STRUCTURED QUESTION</b></p> <p>What is the longest-lasting restorative alternative to restore endodontically treated posterior teeth?</p> <p><b>P: Endodontically treated teeth</b>  <b>I: Dental restoration</b>          C: open comparison          O: restorative longevity  <b>S: systematic review</b></p> <p style="text-align: right;"><b>B</b></p>
<p><b>PUBMED SEARCH STRATEGY</b></p> <p><b>("Tooth, nonvital"[MeSH]) AND "Dental Restoration, Permanent"[MeSH]</b></p> <p style="text-align: right;"><b>C</b></p>	
<p>The screenshot displays two search interfaces. On the left is the PubMed interface, showing a search for the strategy defined in part C. It indicates 14 results and lists several articles, with filters for 'Systematic Review' and 'Clinical Trial' selected. On the right is the Cochrane Library interface, showing a search for the same strategy. It displays one result: 'Single crowns versus conventional fillings for the restoration of root-filled teeth'.</p> <p style="text-align: right;"><b>D</b></p>	

Figure 2. A – Example of clinical case discussed with the students; B – Structured questions and elements of the PICOS (in red and bold the elements considered to build the search strategy and in bold the S element, which limits the type of study to systematic reviews); C – Search strategy using MeSH terms and the Boolean operator AND; D – Search applied to both databases (red arrows depict the search strategy applied and the filters used in PubMed and red circles show the search results).

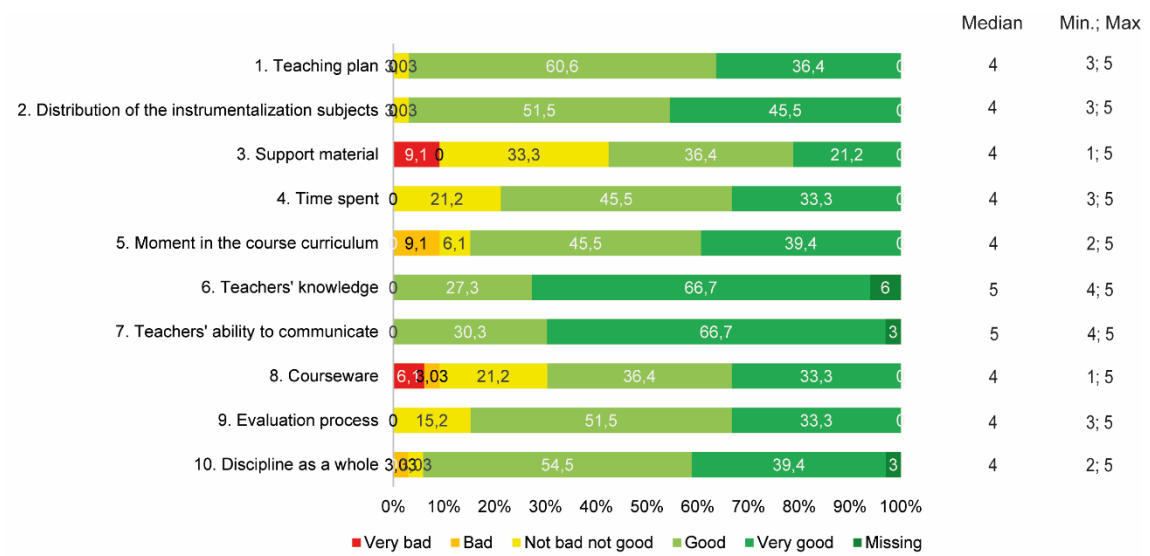


Figure 3. Assessment of the component by the students

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