Teaching procedures used in the Dentistry program of a public university

Natasha de Almeida Dutra Toledo*; Raquel Baroni de Carvalho**

* Master's Degree in Clinical Dentistry, Federal University of Espírito Santo
** Associate Professor, Department of Social Medicine, Federal University of Espírito Santo

ABSTRACT

The teaching-learning process has undergone many changes over the years, one of the reasons is to seek to adapt to the generation of students from schools and universities. This adaptation has occurred also in the curriculum of higher education programs, including Dentistry. A way to register such changes is by analyzing the Dentistry Program Pedagogic Project (PPP). The PPP contains vital and important information about the objective, the program, compulsory and optional courses, as well as the teaching procedures that professors are using. The objective of this study was to analyze the teaching procedures registered in the Federal University of Espírito Santo (UFES) Dentistry Program PPP and compare them with the teaching procedures cited by professors working in the professional training cycle through questionnaire-based interview. In the documentary research of the PPP we included 50% (15) of the courses of the professional training cycle (5th to 10th period). Then, we interviewed the professors of these courses working in three departments – Clinical Dentistry, Prosthodontics and Social Medicine – which were randomly selected. The teaching procedure most often cited by professors was lecture (93%), followed by seminar (40%). The teaching procedure registered most often in the PPP was seminar (91%), followed by lecture (83%). Six other teaching procedures were cited by professors and registered in the PPP, among them bibliographical research, problem based learning, directed study, group study, discussion, and problematization. There is little diversity in the teaching procedures cited by the interviewed professors and described in the UFES Dentistry PPP. It can be concluded that there is some difficulty on the part of the interviewed professors as to adopting new teaching procedures.

Descriptors: Methodology. Higher Education. Faculty. Dental Education.

1 INTRODUCTION

Many changes have occurred in society over time, including as to the teaching-learning process. In order for teaching to evolve to the point of getting students engaged, new teaching forms and procedures that are shown to be

effective should be applied. To determine their utilization, analyzing the Program Pedagogic Project is essential. Therefore, the teaching procedures found in the Federal University of Espírito Santo (UFES) Dentistry Program Pedagogic Project (PPP) are the object of study of this work.

In Brazil, Law no. 9,394, of December 20, 1996, establishes the Guidelines and Bases for National Education. One of the principles and purposes of education is to generate "pluralism of ideas and pedagogical conceptions". With respect to higher education, the Chapter IV of this document describes higher education as having several purposes, among them, the first is "to stimulate cultural creation and the development of scientific spirit and reflective thought"[1].

However, what is observed today is the prevalence of the traditional curriculum, in which the educator is expected to deliver a "a recipe" and students are expected to perform an exact repetition in practice. To achieve the ideal, cognitive objectives should not be the only main concern, interdisciplinarity should be implemented along with changes in the curriculum. As an example, students should be shown the reality of their profession since their first academic year, this means that the paradigm that they can only advance to practice with theoretical prerequisites must be broken, because often times practice may precede theory. They should also be aware that knowledge is not acquired in a linear way, but is built in a network, thus it is not necessary to always follow a sequence or recipe. Information and knowledge will be acquired as the need to understand certain subject arises[2].

Nowadays, teaching procedures that take into account the immense new possibilities of learning are essential. However, in order to employ them, professors need to know the new pedagogical trends (including technology-based ones), knowing how to utilize them, and even determining their advantages and limitations. This is possible by means of courses, independent learning and even learning that occurs on the daily routine, through trial and error[3].

Generation Y or the Internet Generation, found today in universities, has great expectations regarding technology, so it is no wonder that such expectation also exists in relation to education. A study with 25 students in a university in the United States asked what was the preference in relation to the level of interactivity in the development of learning. There were four choices: the first, conventional class only; the second, 75% conventional and 25% interactive; the third, 50% each; and the fourth, interactive only. All chose the third option, where the conventional and the interactive were mixed[4]. This research has shown that college students feel the need for interactivity and technology in their learning environment, which shows the importance of current teaching procedures to attract students who are in universities.

In addition to Generation Y it is also important to mention Generation Z, these are those who were born between 1995 and 2010[5]. Generation Z is interested in selecting just what is desired; if information were "likened to a puzzle", they would only gather the pieces desired for their information, with no need to assemble the puzzle. Thus, long informational texts have lost appeal according to these young people. Too much time is spent until the information needed can be extracted. This generation was influenced by, was born, grew and developed in a complex, fast and technological world[6].

A survey conducted in the Federal University of Espírito Santo Dentistry program

found that 91.1% of professors have shown interest in attending courses for professional development and to improve the teaching procedures, because they perceived there was need to modify and update, in order to reach the new generation currently attending universities[7].

Thus, the objective of this study was to determine what teaching procedures are registered in the 2013 UFES Dentistry PPP and which are cited by professors of the same program, in interview.

2 METHODOLOGY

This research is part of a project approved by the Human Research Ethics Committee of the UFES Health Sciences Center under register CAAE 339550144.0000.5060, entitled "Analysis of the teaching-learning process in the area of health."

A documentary, exploratory, descriptive and quantitative study was conducted, followed by interviews with the faculty of Dentistry of the UFES, performed by a graduate student duly prepared for this function. The documentary research was conducted by analyzing the teaching procedures of all courses of the professional training cycle described in the PPP version 2013, in the period from September to December 2015, and the cited teaching procedures were classified into individual or interactive according to the literature[8]. All courses of the basic cycle (1st to 4th period) were excluded, since the objective of this study was to evaluate only the professional training cycle.

Interview questionnaire was prepared based on the items observed in the PPP. A pilot test was conducted with professors of the basic cycle of the program aiming to optimize the use of the questionnaire by inserting relevant questions and removing irrelevant questions.

Then we interviewed professors working in the professional training cycle (5th to 10th period), randomly selected among the departments of Clinical Dentistry, Prosthodontics and Social Medicine, in the period from June 2016 to September 2017. Of these, 11 agreed to participate in the research. Professors who taught more than one course answered more than one questionnaire, one for each course taught. Before the interview, we presented the informed consent to the professor. The first step of the interview consisted of three questions related to the course, period, and teaching procedures used. They were also asked if they remembered which teaching procedures were registered in the 2013 PPP, and if they could cite them. After this step, we read to the professor the teaching procedures registered in the PPP, described in the topic Methodology of their course. After the reading, professors were asked if they would like to add or remove something, besides some observation. Interviews were not recorded, but the professors' speech was transcribed fully into the questionnaire.

After the interview, the 15 courses mentioned by the professors (50% of the courses of the professional training cycle) were evaluated in the PPP. We conducted a descriptive analysis of the data by similarities and percentage. The teaching procedures mentioned by professors were also divided according to the classification found in literature[8] into individual and interactive procedures; individual ones being lecture, directed study, directed reading, and bibliographical research. Seminar, discussion and role playing were classified as interactive teaching procedures. The methods of problematization, problem based learning, flipped classroom, and gamification were considered as interactive teaching procedures, although they were not mentioned.

In order to clarify and describe the terminology used, we prepared a glossary of terms related to the topic education (Chart 1).

Chart 1. Glossary of terms related to the topic education

Learning. Acquisition of knowledge or development of skills and attitudes as a result of educational experiences such as lectures, readings and research[9].

Problem Based Learning/PBL. Teaching procedure in which students work with the goal of solving a problem. Centered on students, who leave the role of passive receivers and take the role of main agents responsible for their learning[10].

Lecture. It is the oral presentation of a given subject[11].

Didactic Content. Corresponds to the themes and subjects that will be studied in the course with a view to achieving the intended objectives [10].

Didactics. Comprises a part of Pedagogy and deals with the fundamentals, conditions and forms of application of instruction and teaching. Didactics studies the teaching technique in all practical and functional aspects. In a more romantic and simple definition, we can say that Didactics is the art and science of teaching[12].

Banking Education. Mere transmission of knowledge from teacher (educator) to student (learner). Serves as practice for the dominance of teaching by the teacher, it denies dialogue and exchange, it works as a deposit and transfer of values and knowledge from teacher to student, it generates no creativity, transformation and knowledge[13].

Education. A constant attempt of change of attitude, which should develop in the student a taste for research, an act of love and courage, and a statement of freedom[14].

Teaching. A systematic way of transmission of knowledge used by humans to instruct and educate their peers, usually in places known as schools[15]. According to Paulo Freire[16], teaching is not transferring knowledge, but creating the possibilities for its production or its construction.

Teaching-learning strategies/teaching methods/techniques/means/procedures. To facilitate learning, the teacher uses strategies, that is, applies the means available for achieving the objectives[9].

Directed Study. Aims primarily to teach how to study and learn[11].

Teaching tools. Technologies included in the forms of applying content[17].

Gamification. Using game mechanisms to make learning more enjoyable and interactive[18].

Generation Y. Individuals who were born between 1980 and 2000, they can also be called Internet Generation or Millennials. They usually have ease with technology and difficulty with traditional models of education, seeking unconventional methods[19].

Generation Z. Commonly abbreviated to Gen Z, also known as iGeneration, Plurals or Centennials. It is the sociological definition to define the generation of people born from 2000 to 2010. The theory most accepted by scholars is that this generation emerged as conception to succeed Generation Y, so this is the generation that corresponds to the conception and birth of the Internet, created in 1990 and in the boom of the creation of technological devices (born between the beginning of 2000 to 2010). The defining characteristic of this generation is "surfing" between television channels, internet, video games and smartphones[5].

Directed Reading. Presentation of themes and ideas through textbooks in the classroom[11].

Bibliographical Research. Emphasizes the literature to obtain the information necessary for explanation and understanding of the subject[12].

Problematization. Process of searching for a significant theme, with issues to be deciphered, never as content to be deposited[11].

Teaching-Learning Process. Students as the main actors of the educational process. It involves identifying their skills, needs and interests in order to assist them in gathering information they need to develop new skills, in the modification of attitudes and behaviors and in search of new meanings for people, things and facts[10].

Pedagogical Project. It is the tool for conceiving the learning and teaching of a program and has characteristics of a project, in which the following components must be defined: 1. Design of the program. 2. Structure of the program: curriculum, faculty, technical and administration body and infrastructure. 3. Procedures for the evaluation of teaching and learning processes and of the program. 4. Supporting regulatory instruments (composition of the Board, procedures of training, TCC, among others.)[20].

Teaching resources. There is a wide variety of teaching resources, from the most simple, like chalk, posters, serial albums, reproduction of text, to the most complex, such as video camera and multimedia projector[10].

Flipped Classroom. Provide information and materials for the student previously, so that he can discuss with colleagues and with the teacher in the classroom[21].

Seminar. A group of people who meet under the coordination of someone who is an expert, to discuss certain subject[9].

3 RESULTS

Among the participants, 86% responded that they had knowledge of the methodologies/teaching procedures registered in the PPP of their programs. However, the results of this research indicate that the teaching procedures reported by professors in the interview are not in accordance with those they believed to be

described in the PPP, nor with the teaching procedures effectively recorded in the document. As can be seen in Table 1, although some teaching procedures mentioned by professors match those registered in the PPP, in none of the interviews all the teaching procedures registered in the PPP were mentioned by the professors.

The results cover 50% of the courses of the UFES Dentistry professional training cycle, totaling 15 courses, as can be seen in Chart 2. In this chart you can also find the classification of the teaching procedures according to the literature[8], mentioned by professors in the interviews.

Table 1. Teaching procedures registered in the PPP, mentioned by professors in the interviews and coincidence between them

Teaching procedures	Mentioned in the PPP n (%)	Mentioned by professors n (%)	Courses with coincidence of procedures mentioned in the PPP and by the professors n (%)
Lecture	10 (83%)	14 (93%)	9 (60%)
Seminar	11 (91%)	6 (40%)	5 (33%)
PBL or ABP	1 (8%)	1 (6%)	-
Directed Study	1 (8%)	3 (20%)	-
Study Group	1 (8%)	-	-
Research Technique	6 (40%)	-	-
Discussion	-	2 (13%)	-
Problem Solving (Problematization)	-	1 (6%)	-

Chart 2. Classification of teaching procedures into Individual or Interactive

Individual teaching procedures registered in the PPP	Individual teaching procedures mentioned in the interview
Lecture Directed Study Research Technique	Lecture Directed Study
Interactive teaching procedures registered in the PPP	**Interactive teaching procedures mentioned in the interview**
Study Group Seminar PBL or ABP	Seminar PBL or ABP Discussion Problem Solving (Problematization)

The teaching procedure most mentioned by professors was lecture, followed by seminar. In the PPP, it was observed that the most mentioned teaching procedure is seminar, followed by lecture. PBL was mentioned only once, both in the PPP and in interviews. Directed study was mentioned in interviews by three professors, while it was registered only once in the PPP. Study group was registered only once in the PPP, while discussion and problematization were mentioned only in the

interviews. Discussion was mentioned by two professors and problematization, by one professor. By comparing the information provided by professors in the interviews with the information registered in the PPP, there were only eight different teaching procedures.

In the interviews, many professors mentioned as teaching procedures what the literature[9,11] classifies as teaching resources and tools, namely: articles, notes in the notebook,

computer, exercises, internet, blackboard, mannequins, student portal, report, slides, video and WhatsApp. In addition, the educational content was also mentioned by some professors in the interviews as teaching procedure: surgical instrumentation, sonic and ultrasonic manual instrumentation, sharpening and scraping techniques, periodontogram, manual and rotatory instrumentation, and non surgical therapies, surgical and non-surgical periodontal instrumentation.

Of the 15 courses analyzed, one was not present in the PPP and two other did not present the reported teaching procedures: one did not present the topic, Methodology, and another one, in spite of presenting the topic, did not describe the teaching procedures used.

4 DISCUSSION

The fact that in this study we found lecture as the teaching procedure most mentioned by professors and the second most registered in the PPP is not a surprise[4,9,11]. In the School of Dentistry of the Federal University of Minas Gerais lectures were found in 96.7% of the teaching plans[8].

A qualitative research conducted with professors and students of the Dentistry Program of the State University of Londrina brings some topics related to the teaching-learning process. Its reports indicated great emphasis on the teaching process centered on the professor as the main actor responsible for teaching and a near omission as to the learning process, showing complete predominance of the traditional teaching model. In the reports of professors, the same traditional teacher-centered approach was found; with predominance of the authority of the professor who demands the students' receptivity and preventing any communication with them during class. Professors, therefore, are responsible for applying the methodologies, evaluations and content without any prior knowledge of the students[22].

Also corroborating these data, a qualitative study using focus group technique for data collection with Dentistry students of the Federal University of Rio Grande do Norte was conducted in 2012 aiming to evaluate the students' perception regarding the teaching-learning process in their university. Some topics emerged and were categorized; among them, we can mention the methodology adopted by the professor. Concerning this topic, it can be observed in the accounts the presence of the traditional teaching strategy in which the student receives only that which the professor provides[23].

Seminar was the teaching procedure most registered in the PPP and the second most mentioned by professors in the interviews, which is positive, since it is an interactive teaching procedure, which encourages the participation of those involved. However, it is worth noting that, in order for a seminar to be effective, it should be more a source of ideas rather than a medium of information. More important than exposing the subject is to create conditions for its discussion. First professors assume the role of coordinator of discussions and in the end expose their comments of critical and guiding nature[9]. That is, a simple exposition of a subject by projecting slides cannot be considered a seminar, because it does not generate debate and discussion. Thus, an assessment of how seminars are being conducted is of paramount importance.

Bibliographical research was mentioned in the PPP in 40% of the courses, but professors did not mention it. The research should always originate in a situation of immediate or anticipated need. When the need is observed, then the process of reflection on the subject starts. Professors should be aware of teaching the four main parts of the research: the introduction, the development of the work, the conclusions, and the bibliography[12].

PBL was mentioned only once. It is known that this methodology is aimed at a self-learning

process, in which part of a problem presented by professors should be resolved. Thus, students show which are the objectives to be learned, clarifying the terms, analyzing the problem, giving likely hypotheses for solution, creating the learning objectives, looking for sources of knowledge so that they can acquire relevant information, managing this information and knowledge to verify whether their hypotheses and solutions were correct[2]. This is a teaching procedure that suits the generation Y that is currently in the universities.

However, conflicting results were observed regarding the application of PBL in an observational study conducted with Dental Radiology students of a private educational institution in the northern region of Brazil. The study had 138 students participating; 92% of them considered the experience with new teaching procedures valid, while 93.53% did not know the PBL method. When asked about their preferred learning method, most chose the traditional method, because they considered that they would have a better use of the course and would not like to study in a university in which all courses used PBL. It was considered that this result could have stemmed from the fact that the students were not familiar with the technique and that a large number was unsatisfied with the final score obtained in the evaluation[24].

Problematization was mentioned only once by a professor, who mentioned using the methodology of "problem solving". By that definition, it cannot be said for sure if the professor was referring to PBL or problematization because both involve learning with problems. However, as the problem is given by the professor, we understand that the method mentioned could be classified as problematization. It is interesting to reinforce that this teaching procedure was not mentioned by any course in the PPP, although this same document mentions that one of the goals of the Dentistry program is developing new teaching techniques based on problematization.

Directed study was mentioned only once both in the interviews and in the PPP, and has, as all teaching procedures, its advantages and disadvantages. Encouraging habits of study and promoting a sense of independence and security can be mentioned as advantages. However, when the exercises are mechanical, they do not fall into this methodology[25].

Discussion, despite having been mentioned by professors of only two course and not being present in the PPP, has great pedagogical value. It represents an exercise of freedom and has been recommended as one of the most important teaching procedures as an alternative to lecture. However, if not well conducted, some unwanted effects can be seen, such as the low level of student participation, deviation from the goals, and animosity between students[9].

Study group, mentioned by only one professor, has been shown to be an excellent means to instruct and train students socially. It fosters sociability, various opinions on the same subject, emergence of leaders, community spirit, and the development of skills for teamwork. This type of teaching technique requires good planning to be executed fully and effectively[12].

Only eight different teaching procedures were mentioned, taking into account the interviews and documental analysis; a very small number. In the study conducted in the UFMG[8], 11 different procedures were found only in the pedagogical project and the authors concluded that there is little diversity in the teaching procedures of the programs analyzed.

It is worth noting that the diversity of teaching procedures registered in the UFES Dentistry Program PPP could have been higher if they were registered in all courses analyzed, which points to the need for development of a new PPP that corrects existing errors and introduces new interactive and innovative

teaching procedures.

In addition, it can be taken into consideration that many professors mentioned educational content, teaching resources and teaching tools as teaching procedures. This result shows the need for better training of professors in the pedagogic area. The literature[7] points to this need, arguing that graduate programs should show different existing teaching approaches and methods to the future professors. In addition, professors themselves need to be aware of the need to encourage students to learn to reflect and build knowledge critically.

Concerning individual and interactive teaching procedures, in six different courses the professors mentioned only using individual procedures, that is, 40% of the courses. However, the data analyzed in the PPP showed that only one course presents solely traditional teaching procedures. Of the courses analyzed in the study in the UFMG[7] in the Dentistry program PPP, it was registered that 20% also only showed individual teaching procedures.

5 CONCLUSION

No respondent professor showed full knowledge of the teaching procedures of their course registered in the 2013 PPP. We found some difficulty on the part of the professors interviewed as to the understanding of the differences between the definitions, terminologies of teaching procedures, educational content, teaching resources and tools.

RESUMO

Procedimentos de ensino utilizados no curso de Odontologia de uma universidade pública

O processo de ensino-aprendizagem vem passando por muitas mudanças ao longo dos anos, um dos motivos é buscar adaptar-se à geração de estudantes das escolas e universidades. Essa adaptação vem ocorrendo também no currículo dos cursos de nível superior, dentre eles, a Odontologia. Uma forma de registrar tais mudanças é a análise do projeto pedagógico dos cursos (PPC) de Odontologia. No PPC existem informações vitais e importantes sobre o objetivo, o curso, disciplinas obrigatórias e optativas, bem como os procedimentos de ensino que os docentes estão utilizando. O objetivo do presente estudo foi verificar os procedimentos de ensino registrados no PPC do curso de Odontologia da Universidade Federal do Espírito Santo (UFES) e comparar com os procedimentos de ensino citados pelos docentes que atuam no ciclo profissionalizante, por meio de entrevista baseada em roteiro. Na pesquisa documental do PPC foram incluídas 50% (15) das disciplinas do ciclo profissionalizante (5º ao 10º período). A seguir, foram entrevistados os docentes destas disciplinas lotados em três departamentos - Clínica Odontológica, Prótese Dentária e Medicina Social – os quais foram selecionados aleatoriamente. O procedimento de ensino mais frequentemente citado pelos docentes foi a aula expositiva (93%), seguido de seminário (40%). No PPC o procedimento de ensino registrado mais frequentemente foi o seminário (91%), seguido da aula expositiva (83%). Outros seis procedimentos de ensino foram citados pelos docentes e registrados no PPC, dentre eles a pesquisa bibliográfica, aprendizado baseado em problema, estudo dirigido, grupo de estudo, discussão e problematização. Existe pouca diversidade nos procedimentos de ensino citados pelos docentes entrevistados e descritos no PPC de Odontologia da UFES. Pode-se concluir que existe alguma dificuldade por parte dos docentes entrevistados para adotar novos procedimentos de ensino.

Descritores: Metodologia. Educação Superior. Docentes. Educação em Odontologia

REFERENCES

1. Ministério da Educação e Cultura. Secretaria de Educação Superior, Lei de Diretrizes e Bases da Educação Nacional: Lei n° 9.394 (1996).

2. Masetto MT. Um paradigma interdisciplinar para a formação do cirurgião-dentista. In:

Carvalho ACP, Kriger L. São Paulo: Artes Médicas Ltda; 2006. p. 31-50.

3. Feldkercher N, Mathias CV. Uso das TICs na Educação Superior presencial e a distância : a visão dos professores. Rev Iberoam Tecnol en Educ y Educ en Tecnol. 2011;6:84-91.

4. Oblinger DG, Oblinger JL. Educating the next generation. Science and Justice. Boulder: Educause; 2005. [Cited Sept. 5, 2017]. Available at: www.educause.edu/educatingthenetgen/

5. Wikipédia, a enciclopédia Livre. Flórida: Wikimedia Foundation; 2018 [Cited Feb. 7, 2018]. Available at: https://pt.wikipedia.org/w/index.php?title=Gera%C3%A7%C3%A3o_Z&oldid=51186192

6. Faber, Jorge. A Geração Z e a evolução das revistas científicas. Dental Press J Orthod. 2011;16(4):7.

7. Farias CM. Análise do processo de ensino e de aprendizagem no ciclo profissionalizante do curso de odontologia da UFES: percepção de docentes e estudantes. [Dissertation]. Vitória: Universidade Federal do Espírito Santo; 2015.

8. Senna MIB, Rückert B, Pinto MJB, Lucas SD. Procedimentos de ensino adotados no curso de graduação em Odontologia da Universidade Federal de Minas Gerais : uma análise documental. Arq Odontol. 2015;51(3):129-37.

9. Gil AC. Metodologia do Ensino Superior. 4th. São Paulo: Atlas; 2011.

10. Gil AC. Didática do Ensino Superior. 1 ed. São Paulo: Atlas, 2011.

11. Marques, Heitor Romero. Metodologia do Ensino Superior. 5 ed. Campo Grande: UCDB, 2015.

12. Consolaro A. O "Ser" Professor: Arte e Ciência no Ensinar e Aprender. 3 ed. Maringá: Dental Press; 2002.

13. Freire, Paulo. Pedagogia do Oprimido. 17 ed. Rio de Janeiro: Paz e Terra LTDA, 1987.

14. Freire, Paulo. Educação como prática da Liberdade. Rio de Janeiro: Paz e Terra LTDA, 1967.

15. Wikipédia. Teaching. Flórida: Wikimedia Foundation; 2018 [Cited Feb. 7, 2018]. Available at: https://pt.wikipedia.org/w/index.php?title= Ensino&oldid=5093540.

16. Freire, Paulo. Pedagogia da autonomia: saberes necessários à prática educativa. São Paulo: Paz e Terra, 1996.

17. Elsevier. 5 ferramentas de ensino que irão facilitar sua metodologia. Rio de Janeiro: Elsevier Editora LTDA [Cited Feb. 7, 2018]. Available at: https://www.elsevier.com.br/elsevier-mais-professor/blog/5-ferramentas-de-ensino-que-irao-facilitar-sua-metodologia/.

18. Pfeiffer. Hoboken, NJ. The Gamification of learning and instruction: Game-based methods and strategies for training and education. 1. ed. Washington: Pfeiffer & Company, 2012.

19. Gazola, André Augusto. A Geração Y: Desafios para educação dos Nativos Digitais. Caxias do Sul: Lendo.org [Cited Feb. 7, 2018]. Available at: https://www.lendo.org/geracao-y-caracteristicas-educacao/.

20. Universidade Federal de Minas Gerais. Pró-Reitoria de Graduação: Projeto Pedagógico de Curso. Belo Horizonte: UFMG [Acesso em 07 de fevereiro de 2018]. Available at: https://www.ufmg.br/prograd/arquivos/destaque/ppc.pdf.

21. Pacheco, José. Sala de aula invertida. Rev Educação. 2014:14-17.

22. Lazzarin HC. O papel do professor no processo ensino-aprendizagem: percepção de professores e alunos de Odontologia. [Thesis]. Londrina: Universidade Estadual de Londrina; 2005.

23. Noro LRA, Farias-Santos C de S, Sette-de-

Souza PH, Pinheiro IAG, Borges REA, Nunes LMF, et al. O professor (ainda) no centro do processo ensino-aprendizagem em Odontologia. Rev ABENO. 2015;15(1):2-11.

24. Galvão S, Azevedo-Vaz SL de, Oliveira ML. O método de aprendizagem baseada em problemas na disciplina de Radiologia Odontológica. Rev ABENO. 2016;16(4):72-8.

25. Carvalho J. Metodologia do Ensino Superior. Vitória: EDUFES; 1998.

Correspondence to:
Natasha de Almeida Dutra Toledo
e-mail: natashatoledo@outlook.com.br
Rua Carlos Alves, 200/1402, Bento Ferreira
29050-040 Vitória/ES Brazil