Didactics in Dental education: professors' perceptions

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Received June 17, 2017. Approved November 22, 2017.

ABSTRACT

Professors in higher education programs are exposed to challenges and obstacles. In order to overcome them, they need to develop specific skills, especially the art of teaching. The aim of this exploratory, descriptive study was to investigate the perspectives of professors of Dentistry, considering different moments of their careers. The sample consisted of professors with up to five years or more than five years of teaching experience at the Ponta Grossa State University. 53 volunteers were interviewed, but from these, only six professors had up to five years of experience. Therefore, the same number of questionnaires from the group with more than five years of practice was randomized, to keep both groups similar. Participants answered an open, semi-structured and self-administered questionnaire on "Teaching in higher education: challenges and perspectives". The Discourse of the Collective Subject method (DCS) and word clouds were used for data compilation and analysis. The results showed that the questions regarding the relationship between professor and student and the teaching-learning process were highlighted. We conclude that, despite being similar, the perspectives around the teaching practice diverge in some points. Professors' concerns have a different focus. However, they face the same difficulties, no matter how experienced they are.

Descriptors: Faculty, Dental. Teaching. Education, Higher.

1 INTRODUCTION

The Education Ministry (MEC) discusses, through the National Curriculum Guidelines (DCN), the generalist, humanist, critical and reflexive education of professionals in several areas, and the adjustment of teaching-learning strategies used by professors in higher education is necessary¹. Therefore, the teaching practice comprises questioning and teachers' reflexion on their practice that must be in constant re-evaluation and updating².

Teaching at the higher education level demands technical and specific knowledge of the profession, mastering of pedagogical knowledge and conceptual understanding of the teaching-learning processes^{2,3}. In such context, the articulation of technical and pedagogical knowledge is fundamental to the education of students with scientific knowledge, aware of their political-social function in the profession to be exercised ⁴.

However, deficiencies are recognized in the initial education of professors in the health area, mainly because the undergraduate courses in this area have the primary objective the qualification in health care. ^{5,6}.

For this reason, this study aims at investigating the professors' perception, in different moments of their careers, in relation to the difficulties, challenges and vital abilities required for the teaching practice.

2 METHODOLOGY

This is a descriptive and exploratory study that was developed using a qualitative approach. It was approved by the Human Research Ethics Committee at the State University of Ponta Grossa – UEPG (opinion no 1.616.341/2016) and pursuant to the provisions of Resolution 196/96 by the Health National Council. The participants were previously informed about the objectives of

the study, its character of volunteering and nonidentification, as well as the destination given to the data. Those who agreed to participate signed a Term of Free and Informed Consent (TFIC).

Fifty-three professors from the Dentistry Course at the State University of Ponta Grossa with different time of experience took part in the research. From these, only six professors had up to 5 years of experience. Therefore, in order to keep the similarity between the two groups, the same number of questionnaires answered by professors with over 5 years of experience were picked randomly, resulting in a total sample of 12 questionnaires to be analyzed. Data collection was carried out by the students of the *stricto sensu* Dentistry post-graduation course.

The professors received an open, semistructured and self-administered questionnaire, containing three questions, on the theme "Didactics in higher education: challenges and perspectives". The questions were designed based on classroom discussions about the difficulties faced by dentistry professionals when starting the teaching job.

For the classification and analysis of the data generated, two qualitative techniques were used: the Discourse of the Collective Subject method (DCS)⁷ and word clouds generated by the software NVivo version 11. The qualitative approach enables the comprehension of the subjects, their cognitive mechanisms and the origin of their ideas, considering time, space and society when collecting the discourse⁸.

The DCS technique is described as a way of organizing qualitative data and a scientific way of grouping individual opinions or expressions which present similar meanings and then elaborating a synthesis discourse^{9,10}. Its use requires critical analysis by the researchers⁹, and for being used in several studies in the health area, its efficacy in processing collective ideas has been proved¹⁰. To achieve the objectives of this study, the questionnaire answers were

transcribed, followed by the content analysis to find similar expressions and contents, as well as to identify central ideas to prepare the synthesis of the answers obtained during the research and elaborate a single discourse.

For the word clouds, 20 terms were selected, which had more than four characters and were most used in each group. This decision was taken aiming at excluding pronouns/prepositions such as "that" and "to". Word clouds consist in the reproduction of the words used in certain texts, highlighting those that appear the most¹¹. Such procedure allows the elaboration of a qualitative analysis, in which the understanding of the figures generated is subjective¹².

3 RESULTS

Below are the three themes worked, the central ideas identified, the discourses resulting from the DCS and the word clouds generated from each group participants' answers.

Theme 1 – Regarding initial challenges faced by the professors. Central ideal – Worries with the students' effective learning.

Professors with up to 5 years' experience:

DCS – "At the moment of making the change from the situation of the student to that of a professor in a higher education institution, the difficulties faced are mainly in keeping the balance in the hierarchy professor and student. This hierarchy is necessary, and as a professor, it is necessary to require certain attitudes and to learn from the students, and at the same time be careful not to lose a respectful relationship with them. Moreover, keeping the students interested and making them able to learn effectively, even in large classes, is a challenge. Giving the same importance to theoretical and practical/clinical subjects is always a challenge for the professor in Dentistry. The conduction of

clinical cases started to require a clear professional positioning, both before the students and in discussions with other professors. In relation to the colleagues, it is challenging to keep a good relationship, since many times there is a divergence of opinions. Regarding the institution, the major challenge is the adaptation required to an infrastructure different from that of the undergraduate times".

Professors with over 5 years' experience:

DCS - "The challenges were not so big when compared to the anxiety and the high expectancy at this time of transition, not even so significant in relation to the dedication, the correct preparation, the good qualification and the previous experience in the classroom. However, it was possible to feel insecure in relation to the work done, that is, whether it was really reaching the students and making them learn. Initially, managing to build reliability and credibility with the students was a complicated task. Moreover, there was the challenge of changing our own thought, from an acritical way (as students) to a critical and reflexive way (as professors) regarding issues related to methodology, ideology and the knowledge acquired."

Theme 2 – Difficulties faced by professors. Central idea – The perceptions are based on three elements: students, professors and institutions.

Professors with up to 5 years' experience:

DCS – "The greatest difficulties found by a higher education professor include mainly the generalized lack of students' commitment, difficult relationship and lack of communication with them, and lack of students' interest in some subjects which are mainly theoretical. Difficulties to define an effective way of teaching the contents of the subject and prepare tests, so that the students' can really learn to conciliate the theoretical content and the research with the

development of practical abilities required in the clinic. Other factors were the large classes, classroom constraints and the maintenance of work equipment, as well as limitations of funding and development."

Professors with over 5 years' experience:

DCS - "Decreasing level of interest and commitment of the undergraduate and graduate students, difficulties in developing students' competencies so that they can have more critical positioning and resolve their problems in an autonomous way. Thus, the difficulty was not to lead the students to learn, but in developing abilities to apply the content learned. Insecurity in relation to career and retirement plan, difficulties in keeping the motivation when facing adversities and conciliating the theoretical content with the clinical practice. Other obstacles would be the poor conditions of facilities and equipment, an excess of regulation requirements (bureaucratic) and lack of support from the State to higher education, research and extension projects."

Theme 3 – Vital abilities to teaching in higher education. Central ideal – Human and professional abilities in teaching in the Dentistry undergraduate course.

Professors with up to 5 years' experience:

DCS – "The main characteristics that a higher education professor needs to present regarding human/personal skills include: patience, good interpersonal relations, creativity, perseverance, and humbleness. Regarding professional skills, the most important are: teaching skills, research, clinical practice, ability to observe the real needs of the population and understand students' difficulties and limitations, the ability to integrate correlated subjects, transmitting knowledge in a clear and accessible way, stimulating questioning about what is right and

what is wrong and the availability to keep updated."

Professors with over 5 years' experience:

DCS – "The main skill needed to teach in higher education include human and professional issues, that is, not only technical skills but also personal skills. Among personal/human skills, the ones highlighted were: commitment, patience, honesty, intellectual accuracy, otherness, social sensitiveness, will and the courage for not conforming or accommodating with things, proposing and risking changes. As for professional skills, the ones listed were: knowledge (theoretical and practical), communication, experience, ability to innovate with teaching methodologies, avoiding the 'superficialization' of knowledge, didactics, mastering the content, qualification and the ability to implement teaching dynamics that foster students' autonomy, seeking to conciliate the pillars: teaching, research, and extension."

4 DISCUSSION

When considering the perceptions of the professors in both groups, the issues raised referred to students, other professors and the institution. However, the most prominent issues are those related to students and the teaching-learning process.

One of the topics reported in the questionnaires refers to the hierarchical conditions that permeate the student-professor relationship, which is related to the professor's authority. When the authority is authoritarian and bases their positioning on obedience, students' autonomy of thought and action is hampered, making them submissive and conformist.

On the other hand, a liberal authority allows the students to be free and take responsibility for their own behavior and their way of learning, which makes them more critical¹³. Therefore, dialogue and an egalitarian relationship, in which



Figure 1. Word cloud generated by the software NVivo v. 11 with the 20 most used words by the group of professors with up to 5 years' teaching experience at the university



Figure 2. Word cloud generated by the software NVivo v. 11 with the 20 most used words by the group of professors with over 5 years' teaching experience at the university

the professor has the ability to criticize and praise in a stimulating manner, make the teaching-learning process easier¹⁴.

Another point raised refers to the difficulties faced by the professors at the beginning of their career when making the transition from their own condition as students to that of professors. The group with more experienced professor reported that these difficulties could be overcome with good preparation, through 'dedication' during the initial education and through the previous teaching experiences at other school levels. Confirming this results, the literature reveals that professors tend to have high technical preparation in their specific areas and in issues related to research development^{2,6}.

When observing critically the current process of professors' initial education in Brazil, deficiencies are found in the teaching pedagogical training, mainly in areas such as health, in which post-graduation programs might include (barely) or not teaching subjects, and the beginner professor must find ways of overcoming these deficiencies of their initial education with their own effort and dedication⁶.

Research has evidenced that the teachers' initial education focuses on research, while the reflexive teaching practice needed by the professor is neglected at this level. This practice consists in observing their own work, in order to understand positive and negative points, identifying and solving their own problems^{2,15}. Therefore, professors' initial education should count on specific devices that aimed at qualifying reflexive professionals regarding the teaching practice².

The concern with making students' learning effective and keeping them interested was evidenced in both groups interviewed. Evaluating the 'efficacy and efficiency' of the

teaching practice that is being produced is a need^{2,16}. In such context, a gradual change has been observed in the profile of university students, requiring from the professors more than wide specialized knowledge and 'good skills "17. communication' The simple transmission of a reproduced knowledge is not considered interesting and does not achieve the great aim that is the assimilation of content by the students from autonomous reflection action 16,17 .

As for the greatest difficulties faced, factors related to students were emphasized, that is, lack of interest and commitment. Confirming those ideas, reports are found in the literature in which students present a behavior that is in general undisciplined, showing little interest and demotivation¹⁸.

The factors related to teaching pointed out the difficulty to conciliate theoretical content and clinical practice. For other authors¹⁷, practice is seen as indispensable. However, it must be closely articulated with theory and anchored in reflection.

Both groups also demonstrated worried regarding lack of maintenance to the work equipment and lack of support to the teaching activities, from both the university and the government. One of the professors (teaching for over 5 years) said: "Sometimes, regulation requirements hamper (bureaucratic) development of a university teaching career. For example overestimation of publishing detriment of the classroom practice or extension programs". Other authors 19 also mention the demand for high academic productivity, the number of students in the classrooms, the lack of physical structure and teaching materials, and the poor conditions of the public universities, due to the lack of commitment of the State government with education. They claim that factors as those tend to make the academic practice more difficult. For Arabshahi *et al.* ²⁰ (2015), the inextricability of teaching, research and extension are fundamental to the academic education.

One difference of perspective between the groups is based on the concern with students' learning, revealed by professors with up to 5 years' experience, while those with over 5 years' experience are more concerned with the students' ability to apply the knowledge acquired with autonomy. Professors should worry about providing students with input so that they can think, reflect, question and develop the ability to position themselves in life and according to the reality of the environment where they are inserted²¹. Autonomy is seen as a factor of extreme importance since the undergraduate period is not able to provide students with all the knowledge needed for the students' education, which can also become obsolete after the graduation. In this sense, it is fundamental to develop students' competence to understand the importance of continuing education development, so that they are able to find answers to the problems faced by professionals²².

Professors are indispensable actors in the education process; they need to be reflexive, not only on the specific knowledge of their subjects but also on the teaching and methodological issues, which are also essential²³. Although professors are still a central element in the teaching-learning process, the trend, nowadays, is of a rupture with the traditional teaching model, since professors are incorporating innovative practices, which make students' learning easier, mainly, the so-called active methodologies³.

Active methodologies imply the use of teaching methods within a learner-centered pedagogical approach, whose product is

students' authomy²⁴. These methodologies are based on the need of processing a deep renovation in the classroom context and in the university teaching methodologies¹⁷.

Certain abilities such as teaching skills and patience were mentioned by both groups, in addition to presenting concerns with the professors' social role ('social sensitiveness' and 'observation of the population's real needs')

Also, when comparing answers, both groups were seen to praise good relationship with peers as well as with students ('communication' and 'good interpersonal relationships'). Both approach the importance of constant update of knowledge and the ways of transmitting it ('ability to innovate with new methodologies', teaching 'research' and 'availability to keep updated').

As regards the word clouds generated by the answers given by the professors in the less experienced group (Figure 1), greater emphasis was given to the words: students (13 repetitions), practice and ability (both with 6 appearances) and difficulties (5 repetitions). The cloud generated by the more experienced professors' answers (Figure 2) highlights the terms: student/students (15 repetitions), teaching (7 references), and higher and challenges (both with 6 registers). Curiously, the words "extension" and "autonomy" were not mentioned by any of the members of the first group, while the words 'learning' and 'lack of interest' were not mentioned by the members of the second group. In general, the terms that the participants most used were directly related to the theme addressed by this article. However, among the abilities found indispensable by the professors, didactics did not have significant emphasis and was more cited by professors with up to 5 years' experience (3 repetitions).

Professors interviewed in the research

carried out by Zanchet, Fagundes and Facin¹⁹ (2012) revealed that their initial professional education is relevant, even if it is not aimed at teaching, and that the consistent mastering of content was considered a minimum condition for the teaching practice. Behrens²⁵ (2011) claimed that to be a good teacher, it is only necessary to be a competent professional in one's area and to teach it is only necessary to know the content. However, Zabalza²⁶ (2004) defended that knowing the subject is a fundamental condition, but it is not enough.

Professors must know the content, the teaching resources and the new technologies to share knowledge and promote the development of their students' abilities and competences²⁷. For other authors²⁸, a good education professional has the ability to help the students to identify their educational needs.

According to some professors in both groups, good communication or good interpersonal relationships between professors and students are necessary, and for Moretti²⁹ (2007), the fact that the professor can be a role model to many people requires the development of interpersonal relationship skills.

Despite the growing interest in research regarding the difficulties found by professors in higher education¹⁹ and the attempt to develop a teaching model that can be considered ideal, determining the characteristics the perfect teacher must present, for Morales³⁰ (2000), "this individual does not exist... it is a consolation, because we can wish we were excellent professors without having to reach the heights of an unfeasible model".

5 CONCLUSIONS

Considering the elucidations by the participants in this study, it was possible to conclude that despite being similar, their

perspectives regarding teaching the undergraduate Dentistry course presented divergences in certain points. Professors at the beginning of their academic careers were shown more concerned with factors such as didactics, while the more experienced ones emphasized the necessity to develop students' autonomy. The time in the profession does not free these professionals from facing the difficulties inherent in the practice, and both groups mentioned students' lack of interest and lack of resources as obstacles. Professors' concerns with the teaching model are recurrent. Therefore, it points to the need for research on this theme, aiming at generating new discussions that might enrich the teaching practice in higher education.

RESUMO

A didática no ensino odontológico: percepções de docentes

Durante a trajetória acadêmica, os docentes são expostos a diversos desafios e dificuldades. A fim de superá-los, necessitam desenvolver habilidades específicas, especial, em capacidade didática. O objetivo desta pesquisa exploratória descritiva foi investigar perspectivas dos docentes de Odontologia, considerando momentos distintos de suas carreiras. A amostra constituiu-se de professores da Universidade Estadual de Ponta Grossa com até cinco anos de experiência universitária e com experiência superior a cinco anos. Do número total de participantes (53), apenas seis possuíam até 5 anos de atuação, portanto, foi sorteado, aleatoriamente, mesmo número o questionários de professores com mais de 5 anos, para manter a similaridade entre os grupos. Os voluntários receberam um questionário aberto, semiestruturado e autoaplicável sobre a temática "Didática no ensino superior: desafios e perspectivas". Para a compilação e análise dos dados foram realizadas as técnicas do Discurso do Sujeito Coletivo (DSC) e nuvens de palavras. Observou-se que os assuntos que receberam maior ênfase pelos professores foram o processo de ensino-aprendizagem e o relacionamento professor-aluno, principalmente quando associados a dificuldades. Conclui-se que, apesar de semelhantes, as perspectivas quanto ao exercício da docência no curso de Odontologia divergem em alguns pontos. Suas preocupações possuem diferentes focos, porém ambos os grupos revelaram sentir as mesmas dificuldades. **Descritores:** Docentes de Odontologia. Ensino. Educação Superior.

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