

Building active learning attitudes as an essential element of professional dental education in Bulgaria in the reforming global environment context

Lydia G Katrova

University of Sofia, Bulgaria

Correspondence: Lydia G Katrova, University of Sofia, Bulgaria, Email: lydiakatrova@gmail.com

Received: December 15, 2022 | **Published:** December 27, 2022

Copyright© 2022 Katrova. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Modern dental education includes theoretical, practical, and professional issues structured to produce autonomous dental practitioners. The new educational philosophy enhances the active participation of students in the teaching-learning process and output assessment (meet the educational goals of teachers with the social realization of students).

The purpose of this study was to find out the students' perceptions of dental education and how the factors from the educational environment influence their learning attitudes, and expectations for professional realization.

Material and methods: A standard direct survey was carried out among 2nd-year dental students of the Faculty of Dental Medicine (130 participants with an average age of 21 years).

Results: Students rate lecturing and practical teaching mostly as "good" (30%) while the supply and equipment as "average" (56%), 40% of them consider that most of the textbooks are comprehensive, lecturers give adequate knowledge and assistant professors are ready to listen to students. Knowledge is prized by 85%, while better scores for 60%, and only 10% are satisfied by minimal results. For 85% „profession will provide them with a good position in society”, and 60% plan to start their practices in Bulgaria, but they are aware they would have better chances abroad.

Conclusions: Students are critical of the teaching-learning process.

They have their own educational goals, related to values and expectations for further realization.

Expectations for social prestige correlate with the motivation for starting a professional career immediately after graduation.

Introduction

Academic dental education in the world has a relatively short history. The first College of Dental Surgery was opened in Baltimore in 1840 by decree of the Maryland General Assembly. The paradigm of academic education for dentists in America, with great impact on world dental education curricula, is dated 1926 with the publication of the Gies report, which defended a break with the forms of "apprenticeship" in order to prioritize science, academicism, and medicine.^{1,2}

In the last four decades of the 20th century, biomedical research, treatment methods, and healthcare provision have undergone profound changes. In parallel with this process, systems for admission to professional practice (licensing), continuous education programs, and research programs were being built around the world. This also affected the shape and content of undergraduate and postgraduate education programs in dental education.^{3,4}

The application of scientific accomplishments in undergraduate dental education initially prioritized the performance of technical tasks during students teaching and training. This approach, called "instrumental", is characteristic of the 1960s. Gradually, the curricula included the "holistic" approach, which places in the center of dentistry not just the production of a separate piece of prosthetic or a filling relevant to the treatment of the disease, but the treatment of the patient, taking into consideration the complex human personality, with behavior as a patient, influenced by the conditions of the social environment and previous experience with dental care (70-the 80s). The content of

the programs is complemented by behavioral sciences, management sciences, economics, ethics, etc.^{5,6}

This large educational philosophy framework boosted the implementation of the yet-in-use "problem-oriented approach" in the USA and later all over the world.⁷⁻¹⁰ The most important traits of the problem-oriented curriculum design consisted of the following basic changes.

From fragmentation to integration: less departmental division with more vertical integration knowledge, taught to undergraduate students.

From subordination to coordination: teamwork spirit and practical training to work together.

From copying to critical thinking: early involvement of students in research activities.

From knowledge to competencies: go beyond facts and figures and stimulate proper usage of the achieved knowledge in problem definition, goal setting, and performance of complex tasks.

From teaching to learning: giving basic knowledge and guidelines and letting students compose the answers based on their knowledge from the previously learned disciplines.

The inter-professional approach, introduced recently in curriculum design and teaching-learning environment organization, enhanced individual work while including special forms of collaborative

learning based on the sequence of individual work, group work, and immediate feedback. Real teamwork is simulated via mutual assisting or working together with auxiliary trainees. The focus is on the establishment of a motivational framework in which students increase their responsibility to contribute to the team discussion and performance properly. Professionalism and leadership are purposed as output achievement.¹¹⁻¹⁴

Starting in the 21st century two very strong and paradoxically diverse but complementary trends – globalization and integration with an impact on overall social development are observed. These two controversial trends are based on the same values – the free mobility of people, goods, and information.^{15, 16}

The leading trend in the EU education reforms, accordingly, starting in the 90th, is the harmonization of the minimum requirements for basic dental education within the volume of at least 5000 academic hours, and a duration of training of at least 5 years. The aim is for dental schools to be accredited and education to be continued from one school to another (transfer system) as well as to give diplomas that allow practicing in any EU country regardless of the country of origin or issue of diploma.¹⁷⁻¹⁹ The general educational objective is defined as follows: “To contribute to the development of critical-thinking and problem-solving liberal dental professionals, ready for long life learning, prepared to work in a rapidly globalizing environment”.¹⁸

In Bulgaria, dental education has been given in university settings since its inception. The first Department of Dentistry at the Faculty of Medicine of Sofia University was founded in 1942. In parallel with this process, a process of strengthening professional autonomy is observed. Gradually, systems for admission to professional practice (licensing), continuous education programs, and research programs were built. After a period of loss of autonomy by the dental profession in Bulgaria (1974-1991) during the totalitarian regime, now is an equal member of the EU dental and dental education family. The radical political, economic, and legislative transformations of the healthcare system, after the restoration of the market economy and democracy, reflected the overall impacts of the processes of globalization, harmonization with the EU, and domestic infrastructural reforms. The reform in the dental care system started in 1991 with the privatization of dental services and the subsequent rise in the number of private dental practices.²⁰

We can assume that: Modern dental education involving theoretical, practical, and professional training should have a clearly formulated social function to form freelance professionals. The institution responsible for the implementation of this social function (university structures or conformed to such - faculties/schools of dental medicine) would not achieve the expected results if they did not accept and put into practice the new philosophy of potentiating the active participation of the trainees in the full process from the beginning to the end.^{21,22}

On the other side, dental students today start studying with expected practical results, guaranteeing successful professional activity, which suggests that the educational objectives of the institution should correspond with the social realization of the trainees. Therefore, they must be constantly evidenced by the appropriate learning environment, stimulating the active learners' attitudes, and establishing the fundament of further professional independent practice.²³

Aim of the study

This study aims to establish how dental students in preclinical courses perceive their education and training conditions as adequate to the

essentials of professional training and how this affects their learning attitudes and expectations toward professional realization.

Material and methods

A direct anonymous survey was conducted among the students in the 2nd year of dental medicine at the Faculty of Dental Medicine, Medical University, Sofia. The study included 130 people with an average age of 21 years, including 68 men and 62 women completing the 4th semester. The [Questionnaire](#) covered three main directions, grouped as follows:

1. Perceptions of the students in regard to the learning environment, forms, and aspects of the educational process:
 - lectures, exercises;
 - facilities and equipment;
 - textbooks, sources of information;
 - the quality of teaching and accessibility of teachers.
2. Attitudes of students toward active learning and self-directed training - personal goals;
 - independent work;
 - regular attendance at lectures;
3. Students' expectations of dentists for professional realization:
 - career success;
 - social prestige;
 - adequacy and mobility.

Statistical significance was checked with routine statistical methods, (one-dimensional distributions, relative share indicators, and cross-tabulations).

Results

1. Perceptions of the students in regard to the learning environment, forms, and aspects of the educational process:

The grades that students “put” on the **overall teaching process** can be grouped around 4.50/on a scale of 6.00. We have taken into account the responses of only students who stated that they attended lectures and exercises regularly (90% of all responders).

Lectures are rated as “good” by 33%, as “very good” by 30%, and as “excellent” only by 21% of responders.

Exercises are considered “good” by 30%, “very good” by 32%, and “excellent” by 28% of responders. No statistically significant difference was found between male and female responders (Figure 1).

The facilities were rated “average” by 56%, and “good” by 28% of responders.

Most of the textbooks are comprehensive according to 40% of the responders. Only some of the textbooks (30%), and less than half of the books, (24%) are rated as “good enough”. About 40% consider the information given by the lecturers “enough” to prepare for the final examination and 36% report that their assistant professors allocate “enough time” to them personally.

It can be seen that, according to the students, the problems with the facilities and textbooks need some improvement, while the contact with the lecturers and the quality of the information they give were perceived rather as “good” (Figure 2).

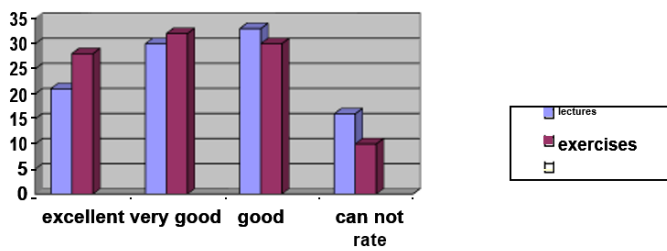


Figure 1 Rating of the lecture and exercise quality by students.

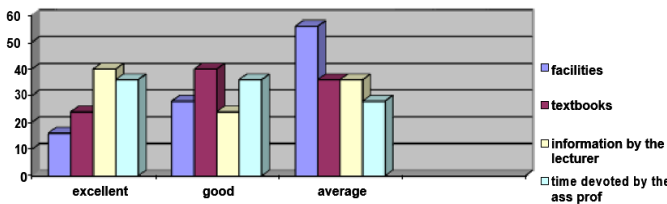


Figure 2 Rating of the learning facilities, information and approachability.

2. Attitudes of students toward active learning and self-directed training

The answers to question #9 “What do you plan to achieve through the study process?” demonstrate the motivation for advancement and an inner need to boost capacity for further professional activity. Most of the respondents consider the accumulation of durable knowledge applicable in their professional activity as a goal and purpose of learning (85%) and attempt for the highest score at final examinations (60%). Only 10% declare they will be satisfied with passing scores at the final examinations. People who regularly attend lectures and exercises (about 90%) appreciate the opportunity to participate in dialogue with the lecturer (60% of them).

Against the backdrop of the shown critical attitude to what they receive in the training process, the respondents also show some self-criticism.

3. Students' expectations of dentists for professional realization:

Students who aim to acquire permanently taught knowledge are motivated most strongly by the expectations that the profession will provide them with a worthy place in society (85%). On the one hand, they hope to start working immediately after graduation (80%) and stay in Bulgaria (60), but at the same time, they think they would have a better career in another country (60%). Most of the respondents perceive higher educational status as a value in itself (80%), but would not accept to start working any job regardless of their qualifications after graduation (70%), but only professional occupation. In general, attitudes and expectations are optimistic, purposeful, and firmly oriented toward the profession.

Discussion

Since the last decade of the last century, in the United States and in most European dental schools, an approach has been adopted that should help form rational and problem-solving professionals. Keywords in defining educational goals are no longer limited to “knowledge” and “skills”, but also to “competence”. The achievement of educational goals is already based on increasingly complex simulation models that recreate not only the working conditions but also the conditions in which the professional makes a decision. The main educational method is problem-oriented learning, in which knowledge from

different levels and fields of science, practice, and management is expected to be integrated both by teachers and learners.²³

The concept of continuity and flexibility of learning involves the combination of knowledge from different sciences and specialties in other sciences. The need for scientific literacy of practitioners is recognized. The unification of curative and scientific activity on the principle of high technology is another challenge for education.^{24, 25}. The theoretical training is based on a problem-oriented model in which the independent preparation of students on topics that integrate knowledge from basic sciences, medical sciences, behavioral sciences, ethics, and information technology prevails.

Practical training is conducted according to models that simulate the real working environment in development. This simulated environment should contribute to building professional qualities both in terms of skillfulness and clinical decision-making ability.

The faculties of dentistry, which have introduced problem-oriented training, have passed the stage of “opening” the traditional scheme of the educational institution. In some of them, these changes are radical (Malmö),¹⁹ in others a hybrid plan is developed (University of Southern California).²⁶

What are students' attitudes and perceptions suggesting?

The students have yet a critical look at the educational process. They give “good” and “very good” but only rarely “excellent” scores to the teaching process and teachers. Teachers and teaching processes are appreciated better than the physical elements of the learning environment. The attendance rate at lectures and seminars is high and it is due not only to the obligatory character of this form of teaching but also because students set goals and achieve them as active participants in the process. Educational status is of value to them. Expectations of social prestige based on professional status and professional realization correlate with the motivation to start work immediately after graduation as a dentist.

As the results of the study showed, the “opening” of the learning process is already a fact in dental education in Bulgaria. Only ten years ago, even though discussing the work of professors with students would have been unusual. Now, more of the students' opinions would be taken into account in the change in training programs.¹⁸. Within the subject-oriented curriculum, elements of dialogue with students are gradually put into interdisciplinary topics in teaching are sought, and the field of independent assignments is expanded. There is an exchange of students with European dental schools.^{20,22}

What can and should we, teachers, develop?

Changes in teaching also affect teaching staff. Teaching careers in dentistry include research and practical work as well as teamwork to develop didactic materials.

Expanding the field of self-directed studies for students will increase their activity in the educational process. The evaluation of teaching must be of a regular nature. Each form of teaching must receive an assessment immediately after the class is taken. On the other hand, student assessment needs to be improved by including not only measuring what has been achieved under a particular discipline but also an analysis of the degree of achievement of educational objectives is due. The introduction of forms to objectify the assessment and, more accurately, to measure the current and general progress made by students, will increase their motivation to improve their preparation.

The introduction of forms for the objectification of the assessment and more accurate measurement of the current and general progress of the students will increase their motivation to improve their progress.

Conclusion

1. Students already show a critical attitude toward the educational process. Ratings of “good” and “very good” prevail on “excellent” scores.
2. Contrasts the relatively high appreciation of the taught material and the forms of teaching with the material learning environment, assessed as “average”.
3. The participation of students in the traditional teaching/learning process is due not only to the compulsory rule but also to a high level of motivation to achieve personal goals for professional advancement.
4. Educational status is a value for them, but their plans are focused on professional realization.
5. Expectations for professional realization correspond with the expectations for social prestige.

References

1. Field MJ, ed. Dental education at the crossroads: challenges and change. Institute of Medicine. Washington, DC: National Academy Press, 1995.
2. Greene JC, Science and the shifting paradigm in dental education, *J-Dent-Educ.* 1997;61(5):07–11.
3. WHO Advisory Committee for Oral Health Sciences Education. Global Network for Oral Health Sciences Education, WHO, 1994.
4. Kassebaum DK, Hendricson WD, Taft T, Haden NK. The dental curriculum at North American dental institutions in 2002-03: a survey of current structure, recent innovation, and planned changes. *J Dent Educ.* 2004;68(9):914–931.
5. Field JC, Kavarella A, Szep S, Davies JR, DeLap E, et al. The Graduating European Dentist—Domain III: Patient-Centred Care. *Eur J Dent Educ.* 2017;21(Suppl.1):18–24.
6. J. Gallagher, J. C. Field. The Graduating European Dentist—Domain IV: Dentistry in Society First published: 05 December 2017 <https://doi.org/10.1111/eje.12311>
7. Chambers DW, Issues in transferring learning to the clinical context preclinical skill. *J Dent Educ.* 1987 May;51(5):238–243.
8. Eisner J. Instructional and information technology initiatives: the potential for delivery. *J Dent Educ.* 1992 Feb;56(2):112–116.
9. Fincham AG. Problem-Based Learning at the University of Southern California School of Dentistry. *J Dent Educ.* 1997 May;61(5):417–425.
10. Kelly M, Shanley DB, McCartan B. Curricular adaptations towards problem-based learning in dental education. *Eur J Dent Educ.* 1997;1:108–113.
11. Mandin H, Jones A, Woloschuk W, Harasym P. Helping students learn to think like experts when solving clinical problems. *Acad Med.* 1997;72(3):173–179.
12. Jos VM Welie. Dentistry a Profession? Part 1. Professionalism Defined. *J Can Dent Assoc.* 2004 Sep;70(8):529–532.
13. Lydia Katrova. Essentials of Professionalism for Dentists. *Journal of Health and Medical Research* 2022;4(1).
14. Team-Based Learning”. Michael Sweet, January 2021: International Network for Health Workforce Education Team-based Learning: An Introduction Study Guide
15. Patel I Tonni, C Gadbury-Amyot, CVM Van der Vleuten, M Escudier. Assessment in a global context: An international perspective on dental education US. *Eur J Dent Educ.* 2018;22(Suppl1):21–27.
16. Oliver R. Curriculum structure: principles and strategy. *Global Congress on Dental Education.* 2008.
17. Paul Batchelor. Improving Governance To Improve Oral Health: Addressing Care Delivery Systems. *OHDM.* 2012;11(3):129–133.
18. Lydia Georgieva Petkin-Katrova. ESSENTIALS OF SOCIAL MEDICINE AND MEDICAL ETHICS. *Leading Technology in Dentistry.* 2017.
19. Rohlin M, Petersson K, Svensater G. The Malmo model: a problem-based learning curriculum in undergraduate dental education. *Eur J Dent Educ.* 1998;2:103–114.
20. Lydia Georgieva Petkin-Katrova. ESSENTIALS OF PUBLIC HEALTH AND HEALTHCARE MANAGEMENT. *Leading Technology in Dentistry.* 2017.
21. Julio Frenk. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet.* 2010 Dec;376(9756):1923–1958.
22. Lydia Georgieva Petkin-Katrova. ESSENTIALS OF DENTAL HEALTH AND DENTAL PRACTICE MANAGEMENT. *Leading Technology in Dentistry.* 2017.
23. McNaughton et al. Capturing the Integration of Practice-Based Learning with Beliefs, Values, and Attitudes using Modified Concept Mapping. *J Med Educ Curric Dev.* 2016;3:17–24.
24. Tamar Ginossar, Carolyn J Heckman, Deborah Cragun, Lisa M Quintiliani, Enola K Proctor, et al. Bridging the Chasm: Challenges, Opportunities, and Resources for Integrating a Dissemination and Implementation Science Curriculum into Medical Education. *J Med Educ Curric Dev.* 2018;5:1–11.
25. Khaylen Mistry, Natasha Casie Chetty, Puran Gurung, Nick J Levell. Digital Problem-Based Learning: An Innovative and Efficient Method of Teaching Medicine. *J Med Educ Curric Dev.* 2019;6:1–5.
26. MacNeil MAJ, Walton JN, Clark DC, Tobias DL, Harrison RL. Structuring a clinical learning environment for a hybrid-PBL dental curriculum. *J Dent Educ.* 1998;62(9):723–728.
27. Aida J Azar, Amar Hassan Khamis, Nerissa Naidoo, Marjam Lindsbro, Juliana Helena Boukhaleh, et al. Design, Implementation and Evaluation of a Distance Learning Framework to Expedite Medical Education during COVID-19 pandemic: A Proof-of-Concept Study. *J Med Educ Curric Dev.* 2021;8:1–16.
28. Emad Nosair. Measuring Students’ Perceptions of Educational Environment in the PBL Program of Sharjah Medical College. *J Med Educ Curric Dev.* 2015;2:71–79.