

REVIEW ARTICLE

DENTAL EDUCATION UPGRADE – MAPPING OF THE NEW PATH IN CURRENT INDIAN CONTEXT

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Abstract

“Nothing is permanent except change”. Education is an open system that changes over time based on the needs of the stakeholders. If it stops to change, the system will fail. The dental profession needs to upgrade itself with newer aspects in dental education. The upgrade should involve all steps in the curriculum. For the process of upgrading to be successful, the faculty members need to be trained adequately in the curricular change area. The future of dental profession relies on upgrading the dental education.

Introduction

The dental profession in India is facing a crisis in recent years owing to many reasons that include the alarming rise of the unemployment problem, introduction of common National Eligibility cum Entrance Test for selection of both medical and dental candidates, escalation of the fee structure and lack of government support. On the flip side, the students who have joined dental institutions are under a considerable amount of stress in accommodating themselves for the existing dental curriculum. A systematic review by Elani et al⁽²⁰¹⁴⁾ states that the main source of stress for both the preclinical and clinical dental students were academic factors, out of which the examinations, grades and workload were identified as top stressors.¹ The stress due to academic factors is due to misfit of the curriculum with the generation of the students. The major cause being that “Physicians of tomorrow are taught by teachers of today using curricula of yesterday” as stated by Sethuraman.² A probable solution would be to upgrade the dental education in all perspectives.

The current students of the dental profession belong to the millennial generation whose perception of the world itself is digitalized. They are born technologists with a very short attention span, who prefers to learn on their go. Consequently, the same old methods of dental education may not be completely suitable for them. Innovative practices need to be incorporated for improving the educational process.

Teaching Learning experiences

Utilization of technology in education has evolved over time. The millennial students would prefer multiple resources for learning instead of textbooks alone. Incorporating case reviews, problem-based learning, flipped classrooms, interactive class-quizzes, simulations, small group discussions, web-based learning, mobile-based learning etc., in the regular teaching promotes critical thinking and active learning by the students.³ Flipped classes enhance the retention of the subject as well as aids in greater depth of understanding by means of the problem-solving exercises and discussion.⁴

Armin et al tested the efficacy of undergraduate students learning by integrating traditional and e-learning methods and proved e-learning to be a more effective supplement in learning histopathology.⁵ Customizing the mobile applications for the purpose of dental education has also been studied and proved to be useful.⁶ The infrastructure of the Institutions should be upgraded to have a Learning Management System (LMS), that connects the faculty members and the students in the digital world of learning, assessing and interacting. The content uploaded by the faculty members in the LMS would help the students in pre-preparation for the classes as well as learn post-class.

The teaching-learning experiences should also focus on the development of communication skills, ethics and professionalism in the students. These skills favor the future dentists to be competent to provide patient-centered care in an interdisciplinary team applying evidence-based practice and quality improvement utilizing Information and Communication Technology.⁷

The teaching learning strategies should focus on the competencies that are to be acquired by the dental graduates at the completion of the course. The Dental council of India has mentioned the list of competencies for all branches of dentistry. Competency based training of the clinical students and testing the acquired competence in the internship will help the graduates to succeed in their career confidently. The competency to be acquired by the postgraduates are at a higher level and hence the training should focus on establishing and achieving Entrustable Professional activities (EPA). The faculty members should identify the redundant areas of the curriculum that are outdated and reduce the curriculum time. More time should be spent to educate the recent advances to the students.

Evaluation

The traditional practical exams test limited knowledge of the students and there is a lot of subjectivity in the evaluation. The use of Objective Structured Practical Exams (OSPE), Objective Structured Clinical Exams (OSCE) and Structured Oral Exams (SOE) provide an opportunity to reduce the subjectivity of the traditional exams and also allow more areas to be tested from the syllabus.

To be a health professional, it is not adequate to have the clinical acumen and theoretical knowledge, more important is the empathy towards patient care and professionalism. As mentioned earlier, apart from

teaching those qualities to the students, they should also be assessed on the same, for, assessment drives learning. Work Place Based Assessments (WPBA) are the newer evaluation tools that allow to assess the affective domain in addition to the practical and clinical skills by the observing faculty for both undergraduate and post graduate students.⁸

Mini- CEX (Clinical Evaluation Exercise) is one of the tools of WPBA and it is used to assess the attitude of the students along with their clinical skills. Behere tested the mini-CEX for dental undergraduate students and found it to be a useful tool and also discussed the suggestions for improvement of the scale.⁹

One more useful tool of WPBA and tested widely in recent times is the Multi-Source Feedback (MSF). This tool captures the feedback on the student by multiple people who are in the sphere of their influence. It is also known as 360* assessment. It measures the professionalism and communication skills of the students.¹⁰ Usha et al studied and discussed the use of Multi-Source Feedback (MSF) for dental postgraduates. The study concluded the expression of positive attitude by the postgraduate students towards the assessment process as well as valuing of the feedbacks by them.¹¹

Training the students to do proper self-assessment and giving them repeated opportunity to do self-assessment aids in enhancing the critical self-reflective skills. Self-assessment with criteria for guidance and feedback from the faculty members in formative assessments would provide an opportunity for the students to introspect and improve their skills in both preclinical and clinical dental education. More weight age should be given to the formative assessments than the summative to increase the accountability of the students throughout the course.^{12,13} The maintenance of portfolio by the students encourages reflective practice, yet the time consumed for maintaining that and the effective evaluation of the teachers still debates the feasibility of the same in larger batch of students.¹⁴ However it is proven to be effective for the postgraduates for improving their personal responsibility and supporting their professional development.¹⁵

Curriculum

There is a need for a paradigm shift in the curriculum to move towards a more learner-centered structure. Adapting Choice Based Credit System in dentistry as proposed by Shivasakthy et al enables the students to learn at their own pace and place. The provision for

electives makes the curriculum model more suitable for learners to choose their area of interest and get advanced training in the under graduation itself.^{16,17}

Integrated curricular modules will help to break the professional silos and learn the subject in a more holistic aspect that assists better understanding of the dental science. In addition, it saves a lot of curricular time and reduces the work load of the students considerably.

Online teaching of students shall also be introduced in addition to the regular college classes. Cynthia et al reported positive outcomes with the curriculum delivery using a hybrid of face to face and online course for teaching oral histology.¹⁸ Use of web-based fixed prosthodontics material was also perceived to be a helpful supplement by the students in a different study by Elizabeth.¹⁹

To make the students survive in the future filled with uncertainty and to help them to be updated, the dental students should be exposed to research in their curriculum. Their knowledge should be enriched with scholarly experiences from the under graduation itself.²⁰

Training of trainers

Faculty development programs constitute an important area when education is considered. The teaching effectiveness of the Institutions depends upon the quality of the faculty development programs. The trainers need to be trained in pedagogical approaches and the evolving trends in dentistry constantly. Longer the training, more durable are the outcomes. The relationship of the change in teaching behaviour of the faculty members need to be compared with the students' achievement of learning outcomes which can be identified as a metric to check the efficiency of the faculty development program.²¹ The program evaluation of any faculty development program should

extend to measure the changes in the instructional process of the teachers.

The faculty development programs should be carefully designed and put forth in an unambiguous manner to avoid resistance in the implementation of the curricular change. The programs should give the faculty members hands-on experience on the curricular modifications and on how to proceed with teaching in the new stream.²² The governing body should make faculty development program mandatory for all the teaching faculty in dental colleges, as existing in the medical profession.

Summary

SWOT (Strength, Weakness, Opportunities and Threats) analysis of the curriculum by the students themselves in each Institute could give a valuable feedback on identifying the need for changes. Globalization of dental education by means of collaboration with foreign universities, student exchange programs, teledentistry, use of multimedia and simulation provides scope for improvement of dental education in India as discussed by Sheeba et al.²³ We need to think globally and act locally for enhancing professional growth.

Continuous professional development and constant renewal of the clinical practice license has become the demand of the day.²⁴ It is the responsibility of the dental education system to instil values in students to enhance their continuous learning experiences and get updated in the recently available technology to apply evidence-based practice in patient care in order to stand the test of time.

The future of the dental profession is relying on the direction in which the dental education moves ahead. The future dentists should be taught to be sensitive to the needs of the society and change accordingly for effective delivery of dental care.²⁵

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