



## The heights of dental education

The extent of undergraduate dental education and training is one of the most challenging questions dental educators must confront. Another approach to the query is how to determine when a student has truly completed her or his training and can be considered a dentist.

Dental curriculums vary worldwide; however, most provide a thorough overview of the fundamental sciences, followed by specialization in dentistry as well as clinical exposure. In most dental schools, the students complete a series of clinical capability assessments (competencies) and exams prior to graduation.

Students are taught the basic sciences at different levels based on the institution they attend. While some institutions provide an in-depth program comparable to that attended by medical school students, others provide a more basic program. Taking into consideration the medical complexity of cases dentists face today, as well as the materials, equipment, and methods used in dental clinics, it is essential for dentists to have a broad and substantiated background in the fundamental sciences. There is a significant difference between dentists who act merely as procedure providers and those who truly comprehend the mechanism behind the procedure (of either the pathology or tool employed). Knowledge increases flexibility and the ability to solve problems.

An interesting example of this trend is the common use of nonsteroidal anti-inflammatory drugs (NSAIDs) to alleviate posttreatment dental pain as well as other painful conditions. These medications are generally safe to use, though the mechanisms of action suggest that NSAIDs should not be prescribed to patients with respiratory diseases. The blockade of the cyclooxygenase pathway increases the flow in the lipoxigenase pathway, potentially leading to an increase in leukotriene levels, which are known to induce bronchoconstriction. A dentist

familiar with the potential risks posed by medication mechanisms of action will be able to provide alternative treatment and better accommodate patients.

Conversely, some argue that the time students spend in dental school is limited and that an increased focus on the basic sciences takes away from the time spent on clinical exposure.

As part of the dental curriculum, clinical exposure is designed based on two main factors: the scale or value of the procedures the students should be exposed to and how many times each procedure should be performed by a student to be qualified as a dentist. There is no definite answer to these criteria; however, they must be taken into consideration by educators while revising the curriculum.

Moreover, dentistry is becoming more complicated and more specialty-driven (similarly to medicine), and clinicians are providing a wider range of procedures and treatments. These trends may increase the clinical experience dental students should acquire in addition to the time required for undergraduate training. Additional training should most likely include exposure to procedures considered to be at the specialist level and in-depth training in the more basic procedures the students should be extremely comfortable performing as soon as they graduate.

The need for a highly demanding basic science education and comprehensive clinical exposure suggest that it may be beneficial to extend dental education. While this may be difficult to achieve, we should constantly consider revising the dental school curriculum in the face of new challenges and a rapidly changing field.

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