

Should Undergraduate Orthodontic Education Be Revised?*

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THERE have been a number of criticisms in recent years of undergraduate orthodontic instruction. Some of these have pointed out the relative cost and time spent in developing competent orthodontists. Others have indicated disapproval of the emphasis on clinical treatment, lack of time spent on the biological problems, the confusion regarding the objectives of orthodontic education, and the relative importance placed upon orthodontics in the dental curriculum in relation to the need and demand for orthodontists.

The whole problem is not unlike the toy that consists of a series of boxes fitting one inside the other. Each box when examined is found to contain another, and yet another box. When spread upon the table they are a group of empty boxes, and nothing more, which by themselves are rather uninteresting, but when viewed as part of a puzzle they take on significance. For this reason, it would seem more interesting to examine the whole subject of undergraduate orthodontic education rather than any of its parts, even at the risk of not satisfying all of the critics of individual problems.

The growth of dental education in the past hundred years leads one to believe that many of our procedures are based upon tradition and expediency. It is the purpose of this paper to discuss some of the customs and to raise the question whether the time is not at hand to "de-traditionalize" some of our methods.

Traditionally orthodontics has rarely received enough emphasis in the undergraduate years to qualify recent graduates to practice orthodontic diagnosis and treatment with the same degree of proficiency as operative dentistry, surgery or prosthetic dentistry. The undergraduate dental student is given some instruction in the theory of etiology, diagnosis, classification and treatments of malocclusion. A short course in orthodontic techniques is customarily included, with such exercises as bandforming, soldering attachments and demonstration of cases to be treated. In the background of such instruction, however, there is usually an undertone of "No, no, mustn't touch when you graduate." The average recent dental graduate starts his practice of dentistry with qualifications to diagnose and treat malocclusion similar to those of a recent medical graduate to deal with disease and surgery of the brain.

Traditionally, the dentist interested in the practice of orthodontics is

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urged to take additional instruction to qualify for practice in this field. Actually, this may range from reading a book on the subject, joining an orthodontic study club, enrolling for a six weeks refresher course to a postgraduate course of a year or less or a graduate course leading to a degree. The choice lies with the dentist.

Traditionally, these courses are referred to as postgraduate or graduate instruction. As a matter of fact most courses must start on the undergraduate level because of the inadequacy of present undergraduate teaching. The average dental graduate enrolled in a real postgraduate or graduate orthodontic course is analogous to a history major, who has completed one semester of freshman chemistry, registering in the field of graduate chemistry. If the quality of postgraduate and graduate orthodontics is to be improved the starting point must be an adequate undergraduate curriculum.

Traditionally orthodontic instruction has allied itself with a system of treatment. Classification and diagnosis are developed as secondary considerations. Recently it has been considered a sign of progress to give a greater amount of paper space in the orthodontic meeting program and in the college bulletin to the problems of growth, development, diagnosis and prevention, but the real emphasis of the program or course usually falls in the treatment field.

There has been very little agreement among orthodontists as to what the objectives of undergraduate orthodontics should be. The latest effort along this line is found in a report of the Committee on Education of the American Association of Orthodontists. The summary of the findings is listed as follows: "1. All of the schools give a didactic course. 2. One school gives only a didactic course. 3. Three schools give all four sorts of courses, namely didactic, laboratory, demonstration and clinical. 4. Twelve schools give didactic, laboratory and clinical work. 5. Three schools give didactic, laboratory and demonstration work, but no clinical work. 6. Seven schools give only didactic and laboratory work. 7. Four schools give only didactic and demonstration work. 8. Thirty-one schools give didactic work. 9. Twenty-six schools give laboratory work. 10. Ten schools give demonstration work. 11. Sixteen schools give clinical work. 12. Eight schools give elective clinical work."

The wide variation among the orthodontic courses indicates an equally wide difference in the objectives of undergraduate orthodontic education. While this survey is a step in the right direction, there is considerable doubt whether there is any possibility of agreement among dental educators regarding the objectives of undergraduate orthodontic education.

The Curriculum Survey Committee of the American Association of Dental Schools recommended in 1935 that undergraduate instruction should prepare the student to treat only cases that were not particularly difficult. This report further stated that the undergraduate dental student, upon the completion of his study of orthodontics should be able: 1, To appreciate the effects of normal occlusion and malocclusion on oral health and on general health; 2, To understand the biological effect of malocclusion; 3, To appreciate the importance of the deciduous denture and the effect of a perfect deciduous denture upon the development of the permanent denture; 4, To appreciate the value of orthodontic service for children in preserving

the health function of the teeth and facial harmony; 5, To supervise the growth and the development of a natural denture and associated parts; 6, To diagnose cases of malocclusion and to treat cases that do not involve particularly difficult and unusual problems; 7, To recognize the shortcomings of both his knowledge of orthodontics and his ability to treat cases of malocclusion, and to determine the advisability of his treating cases of malocclusion; 8, To evaluate new equipment and practices in orthodontics on a scientific and rational basis; 9, To make proper case records for orthodontic service.

A critical review of this report was made in a group conference of orthodontists at a meeting of the American Association of Dental Schools. It became quite evident that there is no unanimity of opinion regarding the objective of undergraduate orthodontic education. Some men held the view that preventive features in orthodontics only should be taught. Others contended that orthodontics should be taught as another major division of dentistry. A third group believed that orthodontic study and practice was so unlike other branches of dentistry that the two never could be combined. In addition to this, there was a good deal of discussion regarding the amount of time to be devoted to undergraduate orthodontic education. Again there was considerable diversity of opinion. The discussors could not agree that the time proposed in the report, four hundred hours, or 10 per cent of the curriculum, was satisfactory.

To further confuse the problem at the present time, the war and the shortage of dental manpower has raised the question of how essential orthodontics is in the field of health service. Some orthodontists question whether their services might not better be diverted into another field, such as children's dentistry. Other orthodontists place orthodontic treatment ahead of restorative dentistry as a necessary item in the health field. Certainly, there is no unanimity of opinion regarding orthodontic education or orthodontic practice.

If we recognize this state of affairs, together with the general criticisms that dental education inadequately prepares students and is too long and expensive to meet the needs of the people, we might well consider fundamental reorganization of our dental educational system. In this reorganization it might be well to "de-traditionalize" our approach to orthodontic education.

An experiment along this line has been underway for the past ten years at the University of California. Briefly outlined it is as follows: Three curriculums are offered. Upon the completion of his first year of dentistry, the student may elect to take a curriculum with restorative dentistry as a major or a curriculum with preventive dentistry as a major. A third, or honors curriculum, is limited to exceptional upper division students interested in research and teaching, and is mentioned only in passing as it is outside the scope of this paper.

The restorative dentistry curriculum is much the same as the traditional course of study in dentistry. The preventive dentistry curriculum differs from the restorative dentistry in that in the last three years, courses in orthodontic and related subjects are substituted for courses in prosthetic dentistry. All other subjects such as operative dentistry, exodontia, pathology,

surgery and dental medicine are taught to the students in both curriculums. A sixteen hour lecture course in orthodontics is given students in the restorative dentistry curriculum. The preventive dentistry curriculum allots 208 hours of instruction to prosthetic dentistry, which includes 160 hours of basic instruction in the freshman year.

There are now over 40 graduates of the preventive dentistry curriculum. It is difficult to determine accurately just how well these men have been prepared, but the following points cast some light in this direction. First the great majority are practicing orthodontics exclusively, and feel that this course of study should be continued. Second, the majority of orthodontists in California agree that these men are rendering good orthodontic service. Third we have been able to compare these undergraduate students with postgraduate students registered for an additional year of study in preparation for the specialty of orthodontics. These two groups were taught by the same teachers in the same school. The faculty are of the opinion that the undergraduates are better prepared than the postgraduates.

At the University of California, the preventive dentistry curriculum devotes over 1,100 hours to instruction in orthodontics, including over 700 hours of clinical practice. Our experience in attaining our objectives in orthodontic education leads us to believe that this represents about the minimum amount of time that can be used to prepare undergraduate students in this field. It has been our experience that our students develop into good orthodontists. True, they are still in need of some guidance and supervision regarding the recognition of their shortcomings and ability. Furthermore, they are not perfectly equipped to evaluate new methods and practices in orthodontics. However, they do not differ from the graduates of the traditional dental curriculum who are also not fully equipped in the matter of experience and judgment.

To summarize: There is a good deal of confusion among orthodontic educators as to the objectives of undergraduate orthodontic education, the time to be spent or the methods to be employed. Many of our educational procedures have been developed on the basis of tradition and expediency. One school has departed from the traditional undergraduate course of orthodontics and has set up a new type of program. After a ten year period this school reports favorably on this plan.

In conclusion, the writer believes that this article should constitute an invitation for any representative orthodontic society to send a commission to the University of California to make an objective study of its undergraduate orthodontic program and report its findings. Such a report might well be used as a guide for further changes in undergraduate orthodontic teaching.

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