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Russell A. Dixon

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Predental Requirements—Purpose and Philosophy

Reprinted from

JOURNAL OF DENTAL EDUCATION

March, 1958

(Pages 142-150)

PREDENTAL REQUIREMENTS—PURPOSE AND PHILOSOPHY*

RUSSELL A. DIXON, D.D.S., M.S.D.,† *Washington, D. C.*

The general topic for this conference session is "Matriculation and Preprofessional Requirements." I have been requested to discuss the basic purposes and philosophies for college predental requirements. As a point of departure it may be helpful to consider what attributes are desired in a dentist. Merely to survey the field and report on what exists may or may not reveal what the profession and the public desire in the dentist of the future. To project my personal opinion, the dentist I should like most to know and have practice in my community, to be the guardian of the oral health of my family and friends, would answer to the following:

He would be a refined, cultured individual whose personality reflected a genuine interest in the science and art of the profession and his eagerness to extend service because of his interest in the well-being of his patients. His approach to duties would bespeak an understanding of human nature, thereby giving me confidence in his capacity to prescribe for my oral health needs. He would be known for keeping abreast with dentistry by engaging periodically in postgraduate study. He would be well qualified for continuation study at a high level because of his academic and professional preparation. He would be well-known in professional circles for participation in meetings and programs designed to better professional and social relations. He would possess a good liaison with his confreres in the various fields of the healing arts. He would be a person inspiring confidence by his understanding of social problems. In all, he would be a composite of the scientific, cultural and spiritual assets of a refined, well-rounded life.

These attributes represent the traits and characteristics of my ideal dentist. There is little doubt that the acquisition of all of these basic qualities—except in unusual cases—could only be attained if he were adequately educated, through no less than four years of college work for a baccalaureate degree. This implies that the student embarking on the study of dentistry would be one endowed with native aptitudes and skills which could be assessed through aptitude tests. Moreover, he would be sound physically, mentally, and morally.

*Presented before the Conference Session on Matriculation and Preprofessional Requirements, American Association of Dental Schools, Atlantic City, New Jersey, March, 1957.

†Dean, Howard University, School of Dentistry.

It is realized that these criteria so glibly enumerated may sound utopian and devoid of facing up to practical considerations. It ignores the fact that if such demands were suddenly placed upon candidates seeking admission to dentistry, two-thirds of the classroom space for freshmen would become vacant. These criteria are idealistic, but they are also basic. They are the least at which our profession may aim if its success and stature are to prove anything more than mediocre. "Too low they build who build beneath the stars" is no visionary, academic theory. Simply, it means that one who aims for the middle of a mountain will never hit its crest.

If the objectives of the educational program for dentistry are those of halfway exposure to the cultural fields, halfcultured products might logically be expected. We cannot sow chaff and reap wheat in return. It seems unlikely that standards and ideals will reduce the enrollment in dentistry, in fact the reverse will surely prove true. Those who have observed the results of the improvement in admission requirements for dentistry during the past half century must bear testimony to this.

It is true that there have been momentary setbacks but they have been recovered in every instance after a short period of adjustment. Today, twenty years after the two preprofessional and four professional year plan was put into effect, the enrollment in dental schools is greater than it ever has been. Moreover, it is interesting to note that students feel the need for a broader educational preparation by acquiring college degrees before applying for admission to dentistry, although they know that a minimum of two years of college education is generally accepted for entrance. Could this self-imposed raising of standards by students be considered an indictment of the lower standards of preliminary requirements that have been set?

One of the most challenging addresses on "Pre-Dental Education" was given before this body by Dr. Leroy M. S. Miner, former dean of Harvard University Dental School. He said, in part:

"The topic of this discussion is one of the most important that we could take up. It involves quite definitely the intellectual position of the dental profession.

"On the side of its technical and remedial activities, dentistry has little need to fear even the most searching criticism. It has long held the admiration of the world for its craftsmanship. It has developed fine and delicate techniques, and American dentistry has easily taken the front rank in the world in its mechanical skill and handicraft. On that level it has no rivals, but is secure in its superiority. But when it is regarded from the intellectual point of view, its position is neither so secure nor so satisfactory. If it is going to command a place of equality with the other divisions of the medical profession—and none of us should be satisfied with anything less—I think we must admit that it will need to strengthen its intellectual foundations.

"No one can review with a critical eye the history of the dental profession without realizing that its intellectual attainments leave much to be desired. When we seek in that history for men of high scholarship, broad grasp of medical science, leadership in the art of healing, the results of our inquiry must leave us somewhat discontented."¹

At this same meeting, Dr. Michael M. Davis, then Director for Medical Service, Julius Rosenwald Fund, stated in an address titled "The Social Outlook,"

"But I beg to submit that the dentist is a practitioner as well as a technician; that he and his profession must practice in society as well as upon it; and that in preparation for a professional career in society he should be educated as well as informed."²

During the intervening years the profession has sought and nurtured a great many individuals who can answer admirably to the foregoing criteria. Many shining examples of culture, scientific knowledge, and consummate skill stand out through the history of the dental profession. Many thousands of dentists are capable practitioners who render a competent oral health service and answer admirably to the demands of culture, refinement and integrity in their relationships. Fewer, perhaps, possess all of these fine attributes, together with the basic educational foundation, essential to engage in graduate education by which they might make more creative contributions to knowledge. Fewer still can accept without qualification the badge of being generally learned, particularly if the yardstick is the acquisition of a liberal education in preparation for the study of dentistry.

Dentistry, through its leaders and friends, has every reason to take pride in its phenomenal educational developments during the past 60 years. In 1897, through the action of the National Association of Dental Faculties the requirements for admission to dental schools were raised to the equivalent for admission to a high school. In 1910, graduation from a high school was required, and in 1917 one had to be a graduate from a four-year high school in order to qualify for entrance into dental school.³

Twenty years later the requirements for admission were set at a minimum of two full years of college work, including specific basic sciences. This has been a great achievement for the profession. It does not, however, represent all of the individual and institutional ad-

¹Miner, Leroy M. S.: "Pre-Dental Education," *Proceedings, American Association of Dental Schools*, 12, 89; March, 1935.

²Davis, Michael M.: "The Social Outlook," *Proceedings, American Association of Dental Schools*, 12, 88; March, 1935.

³Curriculum Survey Committee, American Association of Dental Schools: *A Course of Study in Dentistry*, Chicago, 1935, p. 360.

vances which have raised the requirements in some schools to a position well above this level. Nevertheless, we cannot be satisfied with the achievement of the profession as it exists today. Progress indicates that dentistry, like other learned professions, is serious concerning establishment of a firmer foundation upon which to further its advancement and contribution to society through the healing arts.

It is perhaps necessary to emphasize the fact that these remarks are not intended to imply any magic in a bachelor's degree as such. It is possible, and not infrequent, for one to possess a bachelor's degree and still be far from being educated liberally. It must be apparent, on the other hand, that the baccalaureate degree from colleges and universities of the United States is still the most useful index for the assessment of a basic and broad preparation for a professional education and for life.

Considering the baccalaureate degree from this standpoint, it may be interesting to note how far the dental schools have gone since 1937 in achieving a fuller college pre-dental preparation. From 1937 through 1956 the baccalaureate status of graduates of dental schools of the United States is presented in Table I.⁴

TABLE I—PERCENTAGE OF GRADUATES OF DENTAL SCHOOLS IN THE UNITED STATES FROM 1937 THROUGH 1956 HAVING BACHELOR'S DEGREE OR OTHER DEGREE PRIOR TO ADMISSION TO DENTAL SCHOOL.

<i>Year</i>	<i>Percentage of Graduates</i>	<i>Year</i>	<i>Percentage of Graduates</i>
1937	20	1947	27
1938	22	1948	24
1939	22	1949	32
1940	25	1950	33
1941	32	1951	23
1942	29	1952	24
1943	29	1953	36
1944	29	1954	44
1945	28	1955	47
1946	26	1956	45

⁴Council on Dental Education, American Dental Association, *Dental Students' Register*, 1943, 1956-1957 Issues, Tables 5.

Table I shows there has been a steady and substantial growth in the baccalaureate status of dental graduates in spite of the large fluctuations resulting from World War II and the Korean conflict together with the shadows of Selective Service and endless rumors of war. While progress in attracting college graduates to dentistry has been slow, its pace, nevertheless, has been definitely creditable and promising in face of the fact that the last generation of young men has been at war for a large portion of their lives. In spite of the healthy growth in the baccalaureate status of dental graduates, the foregoing statistics reveal that no more than one-third of those who graduated from dental schools during the past twenty years began their studies with the benefit of college degrees. It might be assumed that most of the other graduates had only about one-half or two-thirds of what the regular college curriculum offered in the way of "preparation for life."

A few pertinent questions are significant at this point. Is it not true that many of our college graduates are frequently limited in general knowledge of the cultural fields if they were science majors? Where is there time, short of a four-year college program, for a student who is majoring in science to pursue meaningful courses in philosophy, logic, literature, history, economics, geopolitics, language, and the like? When 30 to 36 hours of science are prescribed in a two-year pre dental program where is there an opportunity to squeeze in anything significant in the realm of the arts courses? Do we not crowd out practically all possibility for study of the humanities?

Does the dental student have less need for the undergirding of a liberal education than does the prospective teacher, minister, accountant, social scientist, attorney, or any other person seeking a learned career? Is the dental student not being shortchanged by dental educators when the two pre dental years are crammed only with science courses as criteria for admission to the study of dentistry? How can a pre dental student be exposed to the refining processes of the liberal arts curriculum when pre dental requirements minimize the importance of the last two years of college work? Have we taught our students that their success as professional men is dependent almost wholly upon how they perform in their offices? Has this been done to the extent that many of our practitioners are so fatigued at the day's end that they feel little or no responsibility for activities apart from the dental office? What has been overlooked in laying the groundwork that so many in the professions—not necessarily dentistry—mistake prosperity alone, for success? It has been said many times that people in the healing arts are much more concerned about "making a living than making a life."

How favorably do dentists compare with other capable and privileged citizens in contributing to the multitude of progressive activities and civic enterprises designed to make a better community or a better world? If, in the final analysis, our real concern is laying the groundwork for more perfect living, the emphasis on preparation for life must begin before the prospective dental student is subjected to the narrowing influence of professional education. He must be inspired through his learning to a social consciousness which will carry over into his maturity.

The Report of the Subcommittee on Preprofessional Education of the Survey of Medical Education was published in 1953 under the title, *Preparation for Medical Education in the Liberal Arts College*, by Severinghaus, Carman, and Cadbury, Jr. The central thesis of the report emphasizes the necessity of a sound liberal education as a basis for admission to medical school. This volume is perhaps the most thoroughgoing and incisive study of preprofessional education ever published.

Because of its pertinence to pre dental education, a review of that searching report might well have consumed all of this presentation. I commend it to every prospective dental student, dental teacher and dental administrator for careful and critical consideration. Much of its content might well be applied to dental education to the same extent that it pertains to medical education. With no attempt to paraphrase the philosophy that embraces the recommendations at the end of each chapter, I should like to quote several of them.

The first is from the chapter on "The Premedical Student."

"That no person should be denied the opportunity to fit himself for the profession of medicine because of color, creed, national origin, or socio-economic status."

"That special curricula for premedical students, special course sections, or special treatment for them within a course should be avoided whenever possible, and that every student, irrespective of what he intends to do vocationally, should think of himself as a liberal arts student in search of a well-rounded education and should be treated as such."⁵

The second is from the chapter on "A Balanced Education."

"That medical schools should strongly urge students to secure a broad liberal education."

"That distribution requirements should be retained and, where necessary, strengthened. The distribution requirement obligates every college to create and maintain courses that should fulfill its purpose as to content and outlook as well as quality of teaching and the rigor of standards. It is further recommended

⁵Severinghaus, Aura E., Carman, Harry J., and Cadbury, William E., Jr.: *Preparation for Medical Education in the Liberal Arts College*, New York, Toronto, London. McGraw-Hill Book Company, 1953, p. 20.

that the educational program of all students should include work in courses offered at a mature level in the biological and physical sciences, the social studies, and the humanities."

"That liberal education should be extended both into precollege work and into the medical school. This is partly a problem of teaching personnel and methods and partly a matter of curricular change and emphasis."⁶

The third is from the chapter on "Majors and the Culminating Year."

"That every student's program should provide for the development of his intellectual capacity along at least one line toward a high level of maturity.

"That colleges should take steps to make sure that the final year before the award of the bachelor's degree is a truly culminating year.

"That the major should promote an increasingly mature mastery of a field of knowledge, and not be merely a patchwork of more or less related courses."

"That the practice of granting a bachelor's degree to students who have substituted work in a medical school for this potentially culminating year should be abandoned."⁷

The final quotation is from the chapter on "The Several Disciplines."

"That courses in the sciences which are taken by premedical students should emphasize principles and modern points of view."

"That colleges should not permit pressure from self-appointed accrediting agencies to influence their educational policies.

"That every department (and this applies especially to chemistry) should keep its major requirements low enough so that students with an interest in the subject are not discouraged from majoring in it, even if they do not intend to use it directly in a job or in graduate school."

"That each student should be encouraged to reach a relatively advanced level in one or two subjects outside his major field."⁸

These recommendations indicate that the background of a competent liberal college education is a necessity for prospective medical students in the pursuit of higher standards in medicine. Dentistry can wisely seek no less.

The major thesis of this presentation is that a dental student needs to have, prior to his entrance into the dental school, a competent and liberal college education. This is in no way inconsistent with the obvious need for a beginning student in dentistry to have a satisfactory preparation in science. This is a recognized and reasonable demand. The problem exists when science is substituted for and defined by some as culture.

Strained definitions are not helpful in unveiling the logic where frank differences of opinion are involved. "Man cannot live by bread alone" was not intended to deny the positive truth that his body must be nourished by bread's life-giving and sustaining elements. The im-

⁶*Ibid.*, p. 83.

⁷*Ibid.*, p. 152-153.

⁸*Ibid.*, p. 127, 128.

portant matter is how may our students be supplied with these necessary elements in proper balance and amount to assure adequate preparation to embark securely on dental education. Details of this discussion belong to another presentation, but the opinion may be ventured here that no shortcut will do justice to the need.

Mathematics, physics, chemistry, and biology are fundamental tools for a student entering the study of the preclinical sciences. Not only is a competent knowledge of these subjects essential for success in the basic and clinical aspects of dental education, but also for the practitioner who is to keep abreast with the literature and the practice of modern dentistry. These form the vocational aspects of a student's preparation for the study of dentistry.

With standards placed at this high level it is provident wisdom to exercise the greatest care in the selection of students who will be most likely to fulfill society's demands for well-qualified dentists. In this, there are considerations which involve more than the content and extent of the predental curriculum, the assessment of college units, and the quality of grades. There are the spiritual and personality considerations which are not remotely apparent in a transcript or in a thoroughly searching aptitude test analysis.

Dental educators deserve credit for the development of reliable media for the prediction of a student's academic and technical potentialities for the study of dentistry. The transcript of the college record is an indispensable guide for evaluating a student's ability and qualifications. The aptitude test has been even more accurate in predicting the level of performance to be expected of the applicant in dental school. These two resources form excellent measuring devices for the intellectual and technical qualifications of candidates for dental school. Notwithstanding these successes, a means of arriving at personality traits of drive, integrity, stability, poise, dignity, moral stamina, unselfishness, self-assurance, sincerity of interest and purpose, and general social maturity and adjustment in the candidate must also be sought. These are fundamentally important criteria for an individual's real worth in any field.

Until dentistry has arrived at some systematic and scientific process for a more reliable determination of a student's personality fitness, dental educators are duty-bound to continue vigorously assessing those traits, as well as educational background, which will improve the status of our profession. In the meantime, it is incumbent upon us to emphasize to the dental candidate that he must face a self-analysis in character traits, coupled with academic and technical fitness, as an important area of predental requirements. Only through the acquisition of high quality manpower will our vision of the ideal dentist be more fully realized.