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# Clinical Orientation of the Preclinical Dental Student: Impacts upon the Teaching Program

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CLINICAL ORIENTATION OF THE PRECLINICAL DENTAL STUDENT:  
IMPACTS UPON THE TEACHING PROGRAM

by

Richard Michael Stamm

A Thesis Submitted to the Faculty of the Graduate School  
of Loyola University in Partial Fulfillment of  
the Requirements for the Degree of  
Master of Arts

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LOYOLA UNIVERSITY CHICAGO

## LIFE

Richard Michael Stamm was born in Lockport, Illinois on December 20, 1924.

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Upon graduation from dental school, the author served on active duty with the U.S. Navy until August, 1950 when he opened an office for the general practice of dentistry in Lockport, Illinois. A part-time member of the faculty at Loyola University School of Dentistry, Chicago, Illinois, from 1953 through 1958, he became a full-time faculty member in 1963. He held the title of Assistant Professor of Operative Dentistry and is presently Chairman of the Operative Dentistry department. He is a member of the Executive Committee, Curriculum Committee secretary, and moderator of several student organizations at the dental school.

In 1958, he published an article in the Illinois State Dental Journal concerned with "The Recent Graduate."

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## CHAPTER I

### INTRODUCTION

In the dental curriculum the basic aim of the clinical orientation program is to prepare the preclinical undergraduate student to assume better his duties and responsibilities as a student-dentist. The clinical student is expected to assume the role of a dentist, to possess the necessary basic background in order to perform dental services for patients, to understand clinical policies and procedures that must be followed as a student, and to prepare himself for the day he will receive his Doctor of Dental Surgery degree, pursuing his chosen profession.

This paper deals with the undergraduate dental student's transitional experiences, transition from the preclinical years to the clinical experience of the last two years of the dental curriculum.

This transition varies greatly from school to school; however, many teaching programs provide just a brief clinical orientation lecture series upon completion of the preclinical requirements. This is usually scheduled following the final examination period of the last semester or quarter of the sophomore year.

Based upon both student and faculty comments, upon the viewpoints of a number of dental educators, and my personal experiences, improvements are essential if this transient stage is to be more meaningful and productive to the student.



Following the clinical indoctrination period, the policies, procedures, and format are still very obviously vague in the mind of the new junior student; there is a noticeable hesitancy on his part to assume the new role of student dentist. It is apparent that the basic dental science technic fundamentals and basic biological science principles are not co-ordinated with either his clinical responsibilities or his initial patient contact. In most instances, a period of approximately six months lapses before the student is able to initiate or utilize the fundamentals taught or acquired during the preclinical orientation. Motivation, incentive, and inspiration, which was somewhat lacking during the sophomore year, have now gained momentum. The student is now eager and willing to apply his knowledge and to attempt to achieve in all aspects his new role. However, with only a few exceptions, there is a tendency that he will lag behind in his actual performance.

Hence the objective of this study is to determine if new methods are being used to better the preclinical dental student in attaining his new role, and still preserve the knowledge he acquired in the basic background, while continuing his growth and development as a professional man. His attained role must be maintained in a more efficient teaching environment. Gathered knowledge must be integrated with clinical pursuits. The transition period should be a harmonious, as well as a continuous phase of the learning experiences offered in the teaching program.

In addition to these, the secondary objective of this study is to compile information relevant to the methods utilized to integrate, co-ordinate, and correlate the basic science subject matter to clinical dentistry, to

suggest those topics that should be included in a freshman clinical orientation course, and to offer methods of orientating the preclinical students to clinical responsibilities necessary to the preclinical teaching program.

It is known that many dental schools in the country have orientation programs for each individual discipline. Perusal of available literature indicates that modifications of or additions to existing teaching programs have often been attempted; however, any correlation or integration of the clinical disciplines into the development of an orientation program are lacking. This investigation attempts to gather data to provide a complete clinical orientation program rather than to isolate mere segments of a clinical orientation program.

## CHAPTER II

### HISTORICAL BACKGROUND OF DENTISTRY

Much has been written about the foundations of education. These investigations do not usually pertain to the foundations of dentistry, per se, but are concerned with the background of the overall education system. Some mention is given to medicine, of which dentistry was considered a branch; however, higher education subject matter does not include detail related to the professions.

One of the earliest influences on our beginning education systems came from the ancient Eastern civilizations. The Graeco-Roman tradition was one of the forces still in operation at the time the new world was discovered. The cultural contributions of these early civilizations were utilized to perfect the remarkable Greek culture from which subsequent civilizations have drawn. The oratorical law and learning by way of mouth was one of the earliest systems of education.

It is impossible to fix the exact time in history when the dental art made its first appearance; however, there is ample proof of its existence among the civilizations of Egypt and Phoenicia. Studies reasonably assure us that the elementary practice of medicine and dentistry among the early Eastern civilizations became the basis for Greek achievement in medical science. This era produced the groundwork upon which scientific medicine developed. Dentistry as a special branch of medicine is not discussed independently in the

Hippocratic Canon<sup>1</sup> but there are many direct references to the teeth, jaws, and oral cavity that indicate interest taken in them by Hippocrates.

Galen (131-204 A.D.), the most famous physician of Rome and one of the most influential characters in the history of medicine, made a most thorough study of the teeth. He was the first to notice the nerves of the teeth, accurately judging the source of innervation. He described extractions and treatments for aching teeth.<sup>2</sup>

Teaching by showing and telling was the essential means of training. In a sense, we might conclude that higher education did include dentistry as a branch of medicine in its earliest form.

The Fall of the Roman Empire was brought about by the Teutonic invasion of Italy. The effects of paganism on Roman civilization restrained further progress in all areas of education. Actually a retrogression took place; the Judeo-Christian era was not one of advancement for medicine. For a period of five or six centuries everything was almost at a standstill.

Two trends during this era did maintain what had been accomplished. The first was the development of monasticism, a forceful agency in promoting the useful as well as preserving the fine arts. Much that was salvaged from the ancient culture and maintained for future generations must be credited to

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<sup>1</sup>J. Ben Robinson, The Foundations of Professional Dentistry (Baltimore: Waverly Press, Inc., 1940), p. 23.

<sup>2</sup>Ibid., p. 25.

the devotion of these worthy monks. The second factor was the opportunity among the Mohammedans of Arabia for scholars to pursue, unmolested, the study of the sciences and the useful arts. Thus, in all areas of education, at a critical period of the world's history many achievements of the past were preserved for posterity.

The early part of the sixteenth century was characterized by a drastic change. The Renaissance had come to Europe. There was a turning away from the religious view to a more worldly view. Although Martin Luther believed in predestination and that man cannot earn salvation by good work, he and his followers were driven by a logic to support education for all people. This change from the dominance of education by the church to its control by secular forces led to the establishment of schools and school systems by cities and interested people. Religion was a prominent factor in the teaching of the school but the control of the school was not in the hands of the church. John Calvin, born in 1509, was strongly influenced by Luther's doctrine. Religion, too, was an essential part of learning and man was predestined at birth according to the Calvinistic system. The results of Lutherism and Calvinism brought about a group of reformers whose influence was very lasting. Europe's political and economic life was controlled by this thinking for many years.

It was not until the latter part of the sixteenth century that Francis Bacon's "scientific method" had its beginning effects on education. He stressed that the only means of acquiring knowledge was through scientific study. This instigated an age of learning, investigation, and discovery which

found expression in a rapidly developing literature. It marks the beginning of a successful revolt of intellectual thought against the ancient philosophers and teachers.

Let us examine advancements made in dentistry during this same period of time. This era marks the beginning of a useful dental literature which aided the advancement of both the art and science of dentistry. The first dental text on the anatomy of the teeth was written by Eustacheus in 1560. This brought forward the knowledge of macroscopic anatomy of the teeth. About twenty different texts on the subject of dentistry appeared during the sixteenth century.

The "Age of Enlightenment" brought about a rapid development of rationalism co-ordinated with scientific thinking. The foundations of American culture and education during the colonial period were greatly influenced by these major forces. Although the new world society was based on equality, the colonists had separate patterns of social life. At the beginning of the colonial period the prevailing thought was based upon theological conceptions reinforced with religious sanctions. The early roots of the enlightenment period, the change from religious to secular thinking and action, began to grow in the seventeenth century. Philosophy and religion were faced with the problem of what to do with the new scientific findings and theories. The traditional Calvinistic concepts were slowly being challenged by such men as Rene Descartes, whose dualism theories when applied to man, insisted that human nature was composed of two separate and coequal substances - mind and body. The mind can think and operate according to the laws of logic and

mathematics. The body is a machine and operates according to scientific and mechanical laws. William Harvey, in his studies of anatomy, physiology, and medicine began to show that the human body operated according to natural laws. With these views, the idea of predestination was slowly being erased.

Two important laws were passed that had a significant effect on our education system. The Law of 1642 required that all children be educated by the town and the Law of 1647 revised the earlier law so that every town containing fifty or more families must hire a teacher for reading and writing. Every town with over one hundred families must hire a master to teach Latin. The first great significance of these laws was that the state could require towns to actually establish schools and public funds could be used to support schools. After these laws were passed, the town actually became responsible for education and this was the beginning of a form of compulsory education.

Higher education during the earliest colonial growth was governed by religion. The motives in establishing the first two colleges, Harvard in 1636 and William and Mary in 1693, were religious. It was not until the following century that colleges showed signs of the practical and scientific interests.

Numerous valuable contributions were made in medicine during this period. The most important was the discovery of circulation of the blood by Harvey. His application of the microscope to scientific investigation brought about an entirely new area of study. Marcello Malpighi, Professor of Medicine at the University of Bologna, discovered the transition of blood from arteries to veins by means of the capillary system. He is considered the "founder of

Histology." Anton van Leeuwenhoek is responsible for the construction of a more powerful type of microscope so that detailed studies and additional experimentation could be made. The first to give a complete account of the red blood corpuscles, he was responsible for early histological studies on tooth structure. Frederick Ruysch greatly improved histological study by development of anatomical preparations for microscopic observations.

The introduction of the scientific approaches revolutionized the thinking of our philosophers and educators. It was the beginning of the break from the teachings and philosophy that arrived with our forefathers in America. The frontier movement had its effects on thought that prevailed in the "old world." It was the beginning of a social order based on equality. The start of compulsory education for all was a step on a ladder that continued to rise; not to be overlooked is the start of community support.

This author feels that medicine and dentistry had gained more strides in the early formative years prior to the seventeenth century than did overall education programs. Formal dental education, per se, did not exist as it was still a branch of medicine. Forward movements and advancements were a result of individual practitioners rather than schools. The early primitive practitioner recognized dentistry as an art and a science. The needs and demands of dental care were primarily based on what we presently would classify as an emergency type situation; however, much present day thinking stems from the earliest concepts known to the profession.

The leaders in the philosophy and implementation of education concerned themselves primarily with the education of children. Less attention



has been given to the art and science of professional and higher education. This is understandable since the first steps had to be taken in the direction of general education.

The evolution of dentistry and dental education has been guided by changing concepts.<sup>3</sup> Each adds and builds upon the preceding one a new emphasis and direction. These concepts are readily reflected in corresponding developmental stages. The first two stages, mechanical and biological, had their beginnings prior to the eighteenth century.

For the first one hundred years or more, much of the medical and dental care in the colonies was supplied by the clergy. They were, almost without exception, highly educated men who had studied medicine in Europe.<sup>4</sup> In medicine, dentistry, and law, the preceptor system for training physicians and lawyers continued far into the nineteenth century, even after the medical and dental colleges and law schools were well established.

American dentistry as an organized profession had its birth during the six-year period from the formation of the first dental society in 1834 in New York to that of the first national society in 1840. During this interim, the first dental journal, The American Journal of Dental Science was introduced in 1839. The Baltimore College of Dental Surgery, the first dental school, was founded in 1840.<sup>5</sup>

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<sup>3</sup>Isaac Schour, "Changing Concepts in Dental Education," Journal of Dental Education, XXIX, No. 3 (June, 1965), p. 149.

<sup>4</sup>Bernard W. Weinberger, An Introduction to the History of Dentistry in America (St. Louis: C. V. Mosby Co., 1948), II, p. 7.

<sup>5</sup>Ibid., p. 362.

Weinberger's study reveals that dentistry was well-founded by professional men. Although they possessed little of the vast knowledge considered essential today, the majority of the individuals were honest of purpose, and sincere and capable exponents of the profession. A quotation from this valuable documentary of the history of dentistry in America indicates the many basic fundamentals of dentistry which had their origins during this period.

Let us begin with the problem of oral hygiene, for was it not for the purpose of educating the public at large along the principles of oral hygiene that our literature first came into existence, in the writings of Skinner and Longbothom and one finds that during the later decades of the eighteenth century the recent slogan that a clean tooth does not decay had its origin in the records of the Greenwoods? The clinical picture of pyorrhea alveolaris and its treatment by Fauchard in 1746 is certainly a remarkable presentation of the subject. How much have we added to this? The construction of the early artificial bridgework, with the ancient's concept of the necessity of keeping the gum margins free, and the use of pivot teeth were the contributions of our first artisans even before the days of the present era. In America, late in the eighteenth century, human and animal teeth, either fixed by pivots in remaining roots or fastened to adjoining teeth by wires, bands, or ligatures, or set on base plates carved from ivory, gave way to the gold clasp and gold swaged plate.<sup>6</sup>

Much gratitude should be expressed the world over for the many contributions our forefathers of the colonial period gave to dentistry and the profession. The mechanical stage of dentistry was well established with the meager sources and materials available in this era. It was not until after this early period in history that the social, pedagogic, and humanistic stages in dentistry emerged.

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<sup>6</sup>Ibid., p. 363.

## CHAPTER III

### RECENT TRENDS IN DENTAL EDUCATION

All areas of dental education have moved ahead with great dynamic growth. There is little doubt that this growth and development will continue. The past fifteen years have evidenced significant developments and advances, not only in the biologic aspects, but to a great degree, in the clinical sciences. The profession and its educators fortunately have recognized that possession of technical skill and scientific knowledge is by no means the total picture of a professional man; however, too few efforts to broaden the preparation for dentistry beyond these two objectives have been offered. Dental educators must be aware of the many social changes that are occurring in the population. Dentists must be able to cope with and adapt to the demands and needs of the public today as well as tomorrow. Blackerby's proposal for the establishment of departments of social dentistry in the dental schools was one of the first outbursts regarding this important aspect of a teaching program.<sup>7</sup> Since that time, some institutions have attempted to bring this suggestion to reality. These attempts have been rather limited since it meant adding courses to an already overcrowded curriculum. Schools cannot develop this social awareness by means of a one-hour lecture course scattered through the junior

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<sup>7</sup>J. M. Hein, "Socially Sensitive," Journal of Dental Education, XXVII, No. 2 (June, 1963), p. 181.

and senior years. To be forceful and effective, it must be pursued throughout the entire course of study. The philosophy of the present and the future dental schools must place the development of social sensitivity on a par with the objectives of technical capability and scientific knowledge.

The interrelationship that exists between sociology and education today should be emphasized. Attention must be given to available sociological material such as the facts pertaining to the changing community. At the time the first dental school was founded in Baltimore in 1840, Chicago had a population of 4,000 people. When Chicago's Loyola University School of Dentistry was founded on February 20, 1883, the population of Chicago was close to 1,000,000. According to the 1960 census, there were 3,550,440 people living in Chicago proper. By the time Loyola's proposed dental school will be constructed in 1968, the population of Chicago might be expected to exceed four million.

Along with this population increase, one must consider the group or class of people who have migrated to an area over a period of time. It is essential to understand the needs and demands of these groups; consideration must be given to the type of employment these individuals are capable of pursuing. These facts are vitally important to the dental profession and to dental education.

A manpower shortage exists in dentistry which is more acute than that in any other health profession.<sup>8</sup> Not only must the local area be considered

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<sup>8</sup>Dental School Planning, U.S. Dept. of Health, Education, and Welfare Publication No. 940 (Washington: U.S. Government Printing Office, 1962), p. 36.

but the national level as well. It will be impossible to provide a proportionate supply of dentists for the population increase. According to the 1962 report from the United States Department of Health, Education, and Welfare, the national dental force would total only 118,000 dentists in 1975, 16,000 below the number required to maintain the current required ratio of dentist to the number of patients for whom he is capable of performing dental services.

Further expansion of educational facilities is planned; however, its completion would not permit the training of enough additional dentists to halt the decline in proportionate supply. Many school plants are obsolete and unadaptable to the needed changes in the method and content of the dental educational process.

One of the solutions to the above manpower problem is to educate the dental student to utilize the services of auxiliary personnel. The emphasis on the use of auxiliaries will offer many ideal areas for developing the social sensitivity of dental students. They must be educated to direct and lead small groups of employees, motivating and inspiring them to work as an effective dental health team. The dental student will encounter the necessity to understand and appreciate the motives, aspirations, and drives of the dental hygienist, dental assistant, and dental laboratory technician. Experience will enable the student to effectively utilize auxiliary personnel upon graduation.

Another trend that confronts the dental educator is the actual increased demand for dental care. The Brauer Report to the Illinois Dental

Society on May 31, 1963 states that the growing demand will come from people now receiving only emergency or no dental service. The advent of the labor unions expressing a concern and interest in the dental needs of their members will encourage and provide dental care. Prepaid insurance programs are coming to the fore. This trend will bring about dental service to those who previously felt they could not afford complete care.

An increase in longevity and the increase in an awareness of the importance of dental health will require a change in curriculum planning. The teaching program must place particular emphasis on preventive dentistry. Time must be devoted to community and state health department preventive dental services. The development of sound research programs to provide a stimulation to the students who have the potential to continue in this area must be included among the school's objectives.

The dental student of the future must become familiar with dental hospital procedures. His background must include an exchange of knowledge with persons engaged in these associated fields of service to provide the best health service to the patient. The demands stem from those services designed to provide care to such groups as the handicapped, the chronically ill, the aged, and the mentally ill. These individuals cannot be served within the traditional pattern of a dental practice. Not only must the dental student of today become familiar with his responsibilities as a member of a dental health team but he must become orientated to his role as a member of the over-all patient health team.

One trend that must be considered as a most important factor related

to dental education is the change in the dental educator. Like other aspects of life today, dental teaching is becoming more complex. It requires special understanding and appreciation of teaching skills if dental education is to keep pace with the modern concepts of professional education.<sup>9</sup> Too many dental teachers have been following the empirical methods of their former teachers and this tended to perpetuate a traditional pattern of education without sufficient and constant self-analysis and evaluation. Our dental educators might possess a vast knowledge, but they must be in a position to pass on this material to the student. A teacher must be a guide to understanding, not simply a communicator.

Much has been said about the struggle for federal aid to education, particularly in the private schools.<sup>10</sup> Fortunately, the trend within the past few years has been financial assistance for construction of teaching, health and research facilities. Although monies are limited and must be matched on a prorated basis, this does enable the construction of badly needed teaching facilities. Dental educators throughout the country are very interested in these funds to improve existing or provide new dental schools to allow expansion of enrollment. It has instigated some very important changes in teaching programs. Even though funds are not allotted in many cases, it has, at least, brought about newer and improved concepts of dental education.

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<sup>9</sup>W. R. Mann and G. Parkin, "The Dental School Applicant," Journal of the American Dental Association, LXVIII (1964), pp. 554-568.

<sup>10</sup>C. Butts, A History of Education in American Culture (New York: Hoft, Rinehart and Winster, 1963), pp. 515-561.

It is evident that various trends do effect the dental school teaching programs. Provisions must be made in the curriculum to provide the training that is very essential to prepare the student for these changes. As long as the profession is aware of these trends, the dental educators should adapt to the situation. Federal aid will be a great help to provide the needed facilities to bring about the necessary modifications.

To paraphrase George Packer Barry, President of the Harvard Medical Center:

What are the enemies that we, as teachers, face as we seek to improve dental education? Surely our enemies include habit and simple inertia, contentment with the status quo and self-satisfaction, fear of change, slavish adherence to orthodox and conventional beliefs and procedures, failure to understand the significance of social evolution, and the consequent expansion of the opportunities and responsibilities of the dentist.<sup>11</sup>

Most of the countries of the world, including the United States, feel that higher education or training is the responsibility of the universities. Presently there are forty-nine dental schools located in the United States. Six additional states have started construction of dental schools. All of the present schools are approved or provisionally approved and recognized by the Council on Dental Education as accredited.

The freedom of speech and thought that exists in the United States is expressed in the various dental school curricula. Although the basic frame-

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<sup>11</sup>G. P. Barry, "Report of Sixth Teaching Institute," Journal of Medical Education, XXXIV (1959), pp. vii-ix.



work of each curriculum resembles that of another, each university has its own "peculiarities." One factor which is common to all is that minimum standards are required for accreditation by the Council on Dental Education of the American Dental Association. The Council does not standardize curricula of dental schools but it does require a minimum length of four academic years to fully accredit a dental education program. The Council also considers the objectives and purposes of the school and how well the school succeeds in accomplishing these aims. Several recommendations include the following: The curriculum must be flexible and should be determined by the aims of the individual program; it recommends subject areas which must be included in the teaching program; also, the curriculum should acquaint the student with the effective utilization of auxiliary personnel. The state and government permits each university to abide by its own regulations. The methods by which the above requirements are accomplished are the responsibility of each school. The important point is that the graduate of today must be prepared for these trends.<sup>12</sup>

An earlier understanding of the patient in the teaching program would certainly better prepare the graduate for this challenge. Dewey mentions that education is the formation of the mind by setting up certain associations and connections of content by means of subject matter presented from without.<sup>13</sup>

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<sup>12</sup>Interview with Dr. John M. Coady, Assistant Secretary Council on Dental Education, March 18, 1968.

<sup>13</sup>John Dewey, Democracy and Education (New York: Macmillan Company, 1964), p. 156.

Effective in the teaching of a technic course is the inclusion and association of clinical observations.

Custer's report concerning the development of a technic course at Temple University agrees with this philosophy and also adds,

an excess of medically orientated science courses and inadequate coverage of dental technic procedures tend to stifle the strong motivating factor of the preclinical dental student.

It is imperative to offer the student a broad general view of dental technic in order to assist him in increasing this awareness and ability to relate theoretic material to dental practice, as well as to enable him to assimilate discussions not necessarily related to classroom activities.<sup>14</sup>

The findings of Schield's study related to student motivation in a technic course also confirms this viewpoint. "Students who received a minimum amount of clinical observation demonstrated an increased competence in both technical and clinical dentistry."<sup>15</sup>

Rodney A. Clark reports that a learner develops along certain facets of effectiveness; these processes provide a learner with a concept of being meaningful.<sup>16</sup> In like manner, the author feels that actual clinical experiences can enable basic concepts and procedures to not only be meaningful and significant but provide a concept of autonomy. Louis G. Terkla observed that

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<sup>14</sup>F. Custer, "Improving the Dental Technic Curriculum," Journal of Dental Education, XXX (September, 1966), p. 319.

<sup>15</sup>H. W. Schield, "Factors Influencing Motivation in a Preclinical Technic Course," Journal of Dental Education, XXVI (September, 1962), pp. 256-261.

<sup>16</sup>Rodney A. Clark, "Learning Our Differences," Educational Leadership, XXIV, No. 6 (March, 1967), pp. 485-488.

the majority of dental schools do not have curricula which introduce freshman and sophomore students to the clinical patient. "A large gap exists between the learning of skills in the laboratory and in the classroom and the application of these skills in an actual clinical setting."<sup>17</sup>

Anderson's study further emphasizes a need to close this technic-clinical "gap." His study reveals the fact that the student absorbs instruction much faster when he reaches the patient stage even though still in the sophomore year. Patient contact early in the preclinical phase serves to correlate fundamental concepts with the actual clinical situation. This would also stimulate student interest and initiative.<sup>18</sup>

As the student learns the basic biological and dental science fundamentals, Schour reiterates the importance of the students' better understanding of the social and humanistic stages of dentistry. The necessity of this understanding early in the teaching program is emphasized by his comment,

the whole patient has become much more important than his dental and oral components. . . . The dental graduate should achieve an awareness of his professional responsibilities, not merely to the tooth and jaws as in the technical stage, to the patient as in the biological stage, to the community as in the social stage, but also to the society and to the world in the just emerging humanitarian and humanistic concept of dental education.<sup>19</sup>

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<sup>17</sup>Louis G. Terkla, "Advantages and Disadvantages of Introducing the First Year Student to Clinical Dentistry," Journal of Dental Education, XXVIII (December, 1964), p. 412.

<sup>18</sup>P. G. Anderson, "Practical Application in Accelerated Preclinical and Clinical Teaching," Journal of Dental Education, XXVIII (June, 1964), pp. 130-134.

<sup>19</sup>Schour, "Changing Concepts," p. 152.

Education has always been concerned with the problems as well as the advantages of change. However, the rapid pace at which changes are currently taking place creates a more severe problem. Present curriculum planning requires a degree of co-operation which is lacking in various schools. Many existing curricula suffer from "vertical" integration.<sup>20</sup> Little effort is made to correlate basic science taught in the preclinical years to the clinical teaching program. Similarly, during the last two years of study, few attempts are made to relate clinical dentistry to basic science taught in the first two years.

Applied science and review courses offered in the last two years of study attempt to correct this separation. The author is inclined to agree with Myers statement that

while these plans have merit, they are largely remedial, and therefore, are not radical enough to come to grips with the heart of the problem. The fact that the basic and clinical disciplines are separated in the thinking of the faculty, thus separated in the other course offerings of the school, undermines the plan no matter how well intentioned it may be. It is necessary to unify the clinical and basic sciences at all levels and at all points of contact if the purpose of integration is to be achieved.<sup>21</sup>

Early clinical exposure seems to enhance the student's appreciation of basic sciences. An oral problem no longer is an abstract intangible. In

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<sup>20</sup>Byron S. Hollinshead, "Dentistry in the United States: Status, Needs, and Recommendations," Summary Report of the Commission on the Survey of Dentistry in the United States (Washington, D.C.: American Council on Education, 1960), p. 45.

<sup>21</sup>Howard M. Myers, "A Really New Dental Curriculum," Journal of Dental Education, XXX (September, 1966), pp. 291-292.

the student's freshman year, as well as in subsequent years, a definite program to correlate the basic biological sciences, basic dental sciences, and clinical dentistry should be developed through a series of conjoint lectures and demonstrations. In this course, a definite correlation and integration of basic preclinical course content with clinical implications can be presented. For example, the taking of impressions in the freshman or sophomore year Prosthodontics course would involve various disciplines including Anatomy, Dental Materials, and Prosthodontics. The significance of anatomical structures, the properties of impression materials, and the technique of impression-making on the manikin as well as on the clinical patient would be correlated.

The same procedures could be developed in all disciplines. Rather than offering separate courses, an analogous series of activities could be planned and integrated with the fundamental content of a particular subject. At no point would the student receive separate and distinct instruction in either the clinical or theoretical phase.

Curriculum changes as suggested by Myers confirm the author's viewpoint in that the intentions of such a program are that (1) all areas be taught simultaneously, (2) the varying levels of sophistication be across the board in each area, and (3) the appropriate topics be fitted in the instruction by team-effort. The result would be a well-integrated, interrelated series of learning experiences, thereby presenting major areas of dentistry in a unified and meaningful manner.<sup>22</sup>

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<sup>22</sup>Ibid.

Nedelsky outlines principles which should guide the construction of the dental curriculum for 1980. His report details some of the changes which should be anticipated if dental educators are to provide teaching programs to meet public needs and demands. Although one might not fully agree with his predictions, many of his suggestions and comments warrant consideration in this investigation.

Responsible students will not accept knowledge - whether memorizing the content of lectures and books or particular technics - as the principal objective. They will accept understanding, that is, the ability to apply knowledge to new situations and the ability to learn without the teacher's aid. These objectives are clearly related to their future work and growth and, given that the future is certain to bring change, are the only objectives that are completely reliable.

The students will also accept a curriculum and teaching methods that are designed to meet the objectives of understanding and the ability to learn and that abide by known principles of pedagogy.

.....

The interrelation between the basic sciences, technic, and clinic not only should be rational but capable of maintaining the students interest. Students who are not interested in the clinical work are probably in the wrong field and should be so informed. A technic course can hold the students interest if each learned technic is immediately followed by a clinical application. The clinical use of newly learned basic science principles is even more important, because the utility of such principles is less obvious to the students.<sup>23</sup>

A curriculum must have continuity, sequence, and integration. All basic concepts must be stressed and should remain throughout a teaching program. Certain minimum levels of maturity are necessary before these basic

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<sup>23</sup>Leo Nedelsky, "The Dental Curriculum," Journal of Dental Education, XXXI (September, 1967), pp. 337-338.

concepts can be taught with reasonable success and efficiency. Fundamental to this concept of preparedness are four of Hilgard's essential principles of readiness and pacing:

1. Skills that build upon developing behavior are most easily learned.
2. The more mature the organism, the less training is needed to reach a given level of proficiency.
3. Training given before the maturational readiness may bring either no improvement, or temporary improvement.
4. Premature training, if frustrating, may do more harm than good.<sup>24</sup>

Nedelsky mentioned that clinical application of a particular technic should follow immediately after the student has learned the technic. The author feels this application does not necessarily mean that the student must actually perform the task. The learning experience can be in the form of observation of assisting another student who would be performing the same technic procedure.

The continuity and sequence of basic science education gradually ceases as the student enters the clinic. There should, however, be an integration of science and clinic procedures throughout the four-year curriculum. The inter-relationship between basic sciences, technic, and clinical procedures should function to maintain student interest and stimulation of intellectual growth. A student should attain a thorough understanding of the various basic biological and dental science disciplines and comprehend their role and applications to his present practice and the future growth of dentistry. The student should

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<sup>24</sup>E. R. Hilgard, Introduction of Psychology (New York: Harcourt, Brace, & World, Inc., 1957), pp. 60-63.

be prepared for the continuation of self-education and study during his school years and after graduation so that his accumulated knowledge may be applied to new situations as they arise.



## CHAPTER IV

### METHOD

This study is concerned with descriptive research which involves school surveys, casual comparative interrelationship studies, and developmental trend studies. Data collected is expressed quantitatively and qualitatively.

The present study was undertaken to investigate what dental educators are presently doing and planning to better prepare the preclinical dental student for his clinical duties and assignments. It is intended to determine whether there is a significant trend toward preparing the freshman and sophomore student in any manner other than the traditional method. Traditionally, upon completion of the preclinical requirements, a student is exposed to a brief seminar and/or lecture orientation period, supposedly indoctrinating him to his last two years' clinical experience in the four-year undergraduate teaching program.

There can be no doubt that planning for the future is beset with unknowns; however, on the basis of current evidence, the direction clinical indoctrination should take can greatly be effected by the shortcomings of a present clinical orientation program. The 1967-1968 enrolled junior class at Loyola University School of Dentistry was assigned a written paper entitled "Improvement of Clinical Orientation." Written ten weeks after completion of the clinical orientation period, each paper expressed student opinion after

he had the opportunity to perform dental services for approximately ten patients. In addition, a poll was taken of the same class to gather student opinion pertaining to topics and presentation methods of a freshman pre-clinical orientation course. The period of time was sufficient for each student to evaluate his clinical experiences and methods employed to orientate and adjust to clinical procedures, records, and patients.

The comments were compiled to serve as a basis to determine if weaknesses actually exist in the present teaching program. The replies would also indicate which changes must be made in the present orientation program. Prior to assignment of clinical duties, the students experienced the traditional four-week lecture and seminar orientation and instruction which immediately followed the completion of the sophomore year.

The second means of obtaining information pertaining to this paper was a questionnaire poll of the various department chairmen and faculty members at Loyola Dental School. The study was undertaken to investigate the opinions of these individuals, to determine whether there was any similarity between opinions and comments, and to compare the faculty comments with those made by the students in the written paper assignment. The faculty was also requested to submit topics and recommendations for a specific clinical orientation course planned for freshman students enrolled in the 1968-1969 academic school year.

The reader must remember that Loyola Dental School has been in the process of developing an entirely new curriculum for its proposed dental school. The twenty-three subjects included in this study have been assigned

the task of making an overall study and review of the present curriculum, re-evaluating and co-ordinating present course content, designing new courses, and proposing teaching methods which present subject matter in the forthcoming teaching program.

The poll involved four topics:

1. Exposure of the student to clinical procedures prior to the junior year
2. Exposure of the dental student to clinical procedures as early as the first quarter of the freshman year
3. Topics selected and teaching methods employed in a clinical orientation course, per se
4. Procedures and methods recommended for clinical orientation of the preclinical dental student in addition to the clinical orientation course, per se

On the basis of the combined information obtained from the two sources mentioned, a questionnaire was compiled and sent to administrators and teachers at every dental school in the United States and Canada. This form was designed to gain an assessment of the present methods as well as those anticipated or planned for the next three years in the teaching program.

All schools in the United States and Canada were chosen for this descriptive survey because of the limited published information pertaining to general trends in orientation. Literature revealed that many schools have programs developed in a specific area or discipline; however, few publications indicate that all disciplines within a school are fully co-ordinated and integrated in such a program.

Each individual who completed the questionnaire was requested to furnish four types of information:

A. General Information Pertaining to Background

1. Name and academic rank
2. Number of years teaching experience
3. Discipline in which the individual was associated

B. General Information Regarding Clinical Orientation in the Preclinical Teaching Program

1. Feasibility of clinical orientation in the first two years
2. When the clinical orientation program should commence
3. Type of orientation recommended for the more efficient indoctrination to and/or handling of the clinical patient by the beginning clinical student
4. Type of duties the preclinical student would have as his responsibility if he were scheduled to assist an upperclassman
5. Clinical disciplines involved if the student were assigned a patient prior to the junior year

C. Specific Information Pertaining to the School's Clinical Orientation Program

1. Type of instruction and training presently employed to introduce and acquaint the beginning student to the clinical patient
2. Type of instruction and training employed to acquaint the beginning student to the clinical patient which has been started within the past three years
3. Type of instruction and training employed to introduce and acquaint the beginning clinical student to records and distribution of supplies
4. Type of instruction and training employed to acquaint the beginning clinical student to records and distribution of supplies which has been started within the past three years
5. Type of preclinical instruction and training which should be included in a dental school's teaching program within the next three years

D. Specific Information Pertaining to a Clinical Orientation Course

1. Should clinical orientation courses, per se, be included in the teaching program?
2. If No, what type of clinical orientation do you recommend?
3. If Yes,
  - a. should the course carry regular academic credit?
  - b. would twelve quarter hours be sufficient time for this course?
  - c. if not, how many quarter hours would you recommend for such a course?
  - d. when should the first credit course be offered?
4. Which topics should be included in a clinical orientation course?
5. Which quarter should each topic be offered?

The last source of information pertaining to this survey involved interviews and correspondence from dental educators. The subjects were selected on the basis of their involvement in curriculum planning and curricular change.

On the basis of data gathered, a recommended clinical orientation course for the beginning freshman student is presented. In addition, subsequent clinical orientation procedures are recommended and incorporated in a preclinical teaching program at a school of dentistry.

## CHAPTER V

### RESULTS

The sample of students selected for this study was the 1967-1968 junior class at Loyola University School of Dentistry, Chicago, Illinois. Representatives of thirteen states, the class consists of forty-eight married students. Sixty-three members of the class completed four years of pre dental college education, forty-five having earned the Bachelor's degree. The sample of students was chosen for this study because of their availability, varied backgrounds, and familiarity with clinical orientation at Loyola Dental School.

The student comments compiled from the assigned written paper, "Improvement of Clinical Orientation," are listed in three categories: Method of Orientation, Clinical Patient Orientation, and Departmental Orientation. Any statement repeated or indicated by five or more students was recorded. Each category lists the opinions in order of frequency that the comment was made by the seventy-six respondents.

On the basis of the student response, it can be noted in Table I that there are definite but varied views concerning the present method of general orientation. Many indicated that confusion and difficulty to recall details pertaining to their orientation presentation exist. A vast majority of the students stressed a desire to assist and/or observe an upperclassman in the first two years of the teaching program; in particular, this point was emphasized for the sophomore year. Most respondents also indicated that a sophomore student should be allowed to do simple operative dentistry procedures.

TABLE I

## STUDENT OPINION PERTAINING TO METHOD OF ORIENTATION

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Comments Pertain To	Frequency
1. Sophomore should assist upperclassman	75
2. Clinical orientation is mass confusion	73
3. Sophomore should observe upperclassman	71
4. Sophomore could perform operative dentistry procedures	70
5. Freshman and sophomore orientation courses indicated	64
6. Freshman should observe upperclassman	51
7. Orientation details are difficult to recall	40
8. Orientation period is too short	10
9. Assign sophomore more clinical responsibilities	10
10. More audio-visual aids should be used	8
11. Orientation was of little value	5
12. Lectures are "wordy" and wasted time	5

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The student's first contacts with the clinical patient warrant consideration. Topics pertaining to this initial encounter are found in Table II. Although the topics vary, the students indicate much more subject matter pertaining to the clinical patient is desired. Many of the comments infer that actual diagnostic as well as overall clinical procedures and format are vague when the initial patient assignment is made.

TABLE II

## STUDENT OPINION PERTAINING TO ORIENTATION TO THE CLINICAL PATIENT

Topics Pertain To	Frequency
1. Registration procedures	28
2. Patient behavior	26
3. Clinical patient characteristics	20
4. Patient charting and records	20
5. Patient management	20
6. Patient history	16
7. Patient scheduling	16
8. Clinical operations	8

Table III indicates that most of the students feel that the preclinical student would become better acquainted with departmental procedures if he were allowed to assist an upperclassman and perform simple clinical procedures in



the various departments. The comments reflect a preference for departmental rather than the overall general clinical orientation. Compact manuals, visual aids, and demonstrations of department procedures are preferred to lengthy lectures to familiarize the student to the individual clinical discipline.

TABLE III

## STUDENT OPINION PERTAINING TO DEPARTMENT IMPROVEMENT

Comments Pertain To	Frequency
1. Preclinical student should assist an upperclassman	75
2. Permit simple clinical procedures	70
3. Expansion of radiograph procedures	28
4. More emphasis on patient diagnosis	27
5. Compact departmental manuals and visual aids are essential	27
6. Departmental instead of general orientation	26
7. Inefficacy of departmental lectures	26
8. Student should do complete registration of classmate	25
9. Student should do completed diagnosis of classmate	25
10. Distribution of clinical materials and expendables	20
11. More demonstrations of departmental procedures	20
12. Defining departmental requirements and procedures	10

Table IV is a poll of the same class of seventy-six students who responded to the feasibility of including various topics in a freshman clinical orientation credit course. It is noted that topics pertaining to community dentistry are primarily stressed with a strong emphasis on knowledge pertaining to the clinical patient, per se.

TABLE IV

STUDENT VIEWPOINTS PERTAINING TO INCLUSION OF TOPICS  
IN A FRESHMAN ORIENTATION COURSE

Topic Pertains To	Affirmative Response	Negative Response
1. Proper Oral Hygiene	71	5
2. Personal Hygiene	66	10
3. Instrument Identification	46	30
4. Charting of Teeth	43	33
5. Patient Records	41	35
6. Patient Psychology	40	36
7. Exposure of Radiographs	35	41
8. Processing Radiographs	31	45
9. Equipment Used in Radiodontics	22	54
10. Miscellaneous Subjects	22	None

Faculty viewpoints are most important to any educator involved in curriculum change. If their suggestions are reflected in student opinion, it is the author's contention that this knowledge must be considered in planning a teaching program. The sample selected for the faculty poll included department chairmen, directors, and educators involved in curriculum planning at Loyola University's School of Dentistry, Chicago.

All faculty replies to the questionnaire indicated that a student should be exposed to clinical procedures prior to the junior year. Of the twenty-three replies, fourteen teachers believe that a student can be exposed to limited clinical exposure as early as the first quarter of the freshman year. The following reasons were given for the early orientation: incentive, motivation, gaining confidence, inspiration to appreciate one's chosen profession, better correlation of subject matter, understanding of the clinical patient, insights to dentistry and the future, subject matter taught in pre-clinical years would be more meaningful, and to promote reinforcement and association learning.

The remaining respondents gave two basic reasons for including actual clinical contact later in the teaching program. Nine indicated that a student must complete certain basic courses to develop a background prior to any clinical exposure. Four mentioned the transition from college to a professional school is too traumatic; the student should first orientate himself to dental school.

The majority indicated that in the first quarter of the freshman year, the student should serve as an observer of an upperclassman and clinical pro-

cedures. The preclinical student would thus become aware of his role in the clinic. In the third quarter the freshman should be assigned as an assistant to an upperclassman. This would enable the development of a sense of responsibility to the patient; also, he might acquire a sense of appreciation for technics and principles taught in basic biological and dental science courses.

Emphasis placed in the basic biological sciences area in the freshman year would shift to the basic dental sciences in the sophomore year. As the student would progress, clinical exposure should increase. Small group demonstrations relating to departmental procedures would be offered. The student could be involved in disciplines such as Radiodontics and Oral Diagnosis. Charting, taking radiographs, scheduling of appointments, and taking patient histories could be mastered prior to individual patient assignment. This would initiate the understanding of patient handling and care. Clinical format and policy would be understood; patient behavior and peculiarities would no longer seem vague; basics taught earlier in the teaching program would be more significant and meaningful. The transition has taken place with continuity. The "gap" would be closed.

In the latter portion of his sophomore year, the student should begin to treat clinical patients. Concurrently, he becomes familiar with the utilization of dental auxiliaries. He is thereby well-prepared to begin his clinical practice as he is completing the sophomore year.

The topics most often recommended for a freshman clinical orientation course are listed in Table V. Subject material pertaining to Community Dentistry, Oral Diagnosis, Operative Dentistry, and Radiodontics was most frequently suggested.

TABLE V

TOPICS RECOMMENDED FOR FRESHMAN ORIENTATION COURSE  
BY LOYOLA DENTAL SCHOOL FACULTY

	Topic Pertains To	Frequency	Total
Community Dentistry	The Clinical Patient	14	37
	Oral and Personal Hygiene	13	
	Introduction to Dentistry	5	
	Caries Control	4	
	Professionalism	2	
Oral Diagnosis	Diagnostic Procedures	10	25
	Charting and Registration	9	
	Laboratory Procedures	4	
	Dental Emergencies	2	
Operative Dentistry	Operative Dentistry Procedures	10	18
	Restorations and Materials	3	
	Chair Positions	3	
	Instrumentation	3	
Radiodontics	Radiographic Interpretation	6	13
	Radiodontic Procedures	5	
	Equipment Used	2	
Other	Miscellaneous Subjects	1	10

A comparison of student and faculty views pertaining to clinical orientation reveals that the respondents are in accord regarding exposure prior to the junior year. The majority expressed approval of orientation in the first quarter of the freshman year. Table VI compares the opinions regarding the various methods of introduction.

TABLE VI

COMPARISON OF STUDENT AND LOYOLA UNIVERSITY FACULTY OPINIONS  
PERTAINING TO CLINICAL ORIENTATION

Opinion	Faculty Response	Student Response
1. Exposure to clinical orientation prior to the junior year	100%	100%
2. Exposure to clinical orientation in the first quarter of the freshman year	61%	67%
3. Freshman should assist upperclassman	25%	50%
4. Sophomore should assist upperclassman	96%	99%
5. Freshman should observe upperclassman	83%	67%
6. Sophomore should observe upperclassman	96%	93%
7. Freshman perform services for clinical patient	16%	51%
8. Sophomore perform services for clinical patient	70%	92%

There is a positive response to all methods compared except when the freshman would be assigned as an assistant or allowed to perform clinical patient

care. The students, however, were less opposed to these methods than the faculty. Many of the faculty indicated that as the dental student progresses, clinical patient contact should increase.

Viewpoints pertaining to exact topics which should be included in a freshman credit course, per se, were somewhat varied. However, it will be noted in Table VII topics pertaining to Community Dentistry, Oral Diagnosis, Operative Dentistry, and Radiodontics were overwhelmingly suggested.

TABLE VII

COMPARISON OF TOPICS RECOMMENDED BY STUDENT AND FACULTY  
FOR FRESHMAN CLINICAL ORIENTATION

Topic Pertains To	Faculty Response	Student Response
1. The Clinical Patient, per se	78%	80%
2. Oral and Personal Hygiene	70%	86%
3. Oral Diagnosis Procedures	65%	60%
4. Operative Procedures - Instruments	61%	65%
5. Radiodontics	48%	41%
6. Miscellaneous Subjects	44%	29%

A sample of the questionnaire which was mailed to deans, educators, and individuals involved in dental school curricula in the United States and Canada can be found in the Appendix. The response was most satisfactory.

Replies were received from representatives of forty-seven of the forty-nine dental schools in the United States and three of the eight dental schools in Canada.

Of the fifty-nine educators who replied to the questionnaire, thirty-four were completed by deans and/or administrators. As can be noted from Table VIII, the majority of the inquiries were returned by full-time teachers who had more than ten years teaching experience.

TABLE VIII  
TEACHING EXPERIENCE OF RESPONDENTS TO QUESTIONNAIRE

Teaching Experience	Part-Time	Full-Time	Total
None	1	. .	1
Less than five years	2	5	7
More than five years	3	11	14
More than ten years	4	33	37
Total	10	49	59

Fifty-seven teachers indicated clinical orientation should be included in the first two years of the dental school teaching program. Thirty-nine specified the first year while eighteen suggested the second year.

Table IX refers to the various dental school disciplines represented in the survey. The larger faction of educators taught in the clinical and/or preclinical dental science areas.



TABLE IX  
DISCIPLINES REPRESENTED IN QUESTIONNAIRE SURVEY

Teaching Discipline	Number of Respondents
Clinical Dental Science	22
Clinical and Basic Dental Science	16
Clinical Dental and Basic Biological Science	8
Clinical and Basic Dental and Basic Biological Science	1
Basic Biological Science	2
Administrative Only	10
Total	59

Although responses to the method of orientation varied somewhat, eighty percent indicated that clinical introduction should be a combination of three or more methods. Two trends were evident. As the dental student progresses, one group stressed the degree of patient exposure should increase. The following is an example of this thought: after initial lectures and/or seminars, the student commences his orientation as an observer in the clinics; awareness of his role is next enhanced by performing assistant chairside duties for an upperclassman; transition is then completed when the student is assigned a clinical patient in the sophomore year. A number of replies also indicated

that prior to assignment of a clinical patient, in certain areas, such as Diagnosis and Radiodontics, a student should serve as his classmate's patient.

The second tendency is to assign a clinical patient to the freshman student early in the first year. The preliminary assistant-observer methods were considered neither important nor effective. Some also commented that this is a waste of time since the beginning student is not trained to assist. Opinion is that only a trained dental assistant should be assigned this responsibility. Early patient assignment would enable the freshman student to perform introductory clinical procedures. Topics such as appointment making, taking case histories, charting, or performing laboratory tests which would be presented in the various basic courses could then be applied in the clinical setting. This would also enable the student to perform simple clinical procedures following techniques taught in dental science laboratory sessions. Basic biological science principles would become much more meaningful if immediate application in a clinical environment were possible.

Forty responses indicated a clinical patient should be assigned to a sophomore student; of these, twenty-one also designated the assignment of a clinical patient to a freshman. Negative outnumbered positive comments pertaining to block assignment of underclassmen in clinical departments. Very few educators indicated that sophomores should observe upperclassmen; responses were slightly more favorable towards this method as an aid for the freshman student. Tabulation of the methods selected for clinical orientation appears in Table X.

TABLE X

METHODS SELECTED FOR STUDENT ORIENTATION TO THE CLINICAL PATIENT  
ACCORDING TO SURVEY

Method	Favorable Responses
Lectures	26
Seminars	25
Course Credit	13
Freshman student observes upperclassman	21
Sophomore student observes upperclassman	10
Freshman student assists upperclassman	14
Sophomore student assists upperclassman	20
Freshman student assigned clinical patient	21
Sophomore student assigned clinical patient	40
Freshman block assignment in clinical disciplines	16
Sophomore block assignment in clinical disciplines	22

A consideration of the views represented by the three different survey groups shows variation. There is overwhelming agreement that clinical orientation should exist prior to the junior year. Positive comments outnumber negative comments concerning assignment of clinical patients to sophomore students. However, there is a marked difference of opinions concerning all other methods except freshman students assisting upperclassmen. Fifty percent of the students favored this policy but approximately seventy-five

percent of each remaining group rejected the suggestion. This comparison is presented in Table XI.

TABLE XI  
COMPARISON OF METHODS SUGGESTED FOR CLINICAL ORIENTATION

Discipline	Survey Response	Faculty Response	Student Response
1. Exposure to clinical orientation prior to the junior year	97%	100%	100%
2. Exposure to clinical orientation in the first quarter of the freshman year	32%	61%	67%
3. Freshman should assist upperclassman	24%	25%	50%
4. Sophomore should assist upperclassman	34%	96%	99%
5. Freshman should observe upperclassman	36%	83%	67%
6. Sophomore should observe upperclassman	17%	96%	93%
7. Freshman assigned clinical patient	36%	16%	51%
8. Sophomore assigned clinical patient	70%	70%	92%

As noted in Table XII, the majority of the respondents indicated that Oral Diagnosis, Community Dentistry, Periodontics, Radiodontics, and Operative Dentistry should be involved if the student is assigned a clinical patient prior to the junior year. Although not in the same sequence, this

tabulation agrees with the prime topic recommendations made by the Loyola University faculty and students.

TABLE XII  
DISCIPLINES INVOLVED IN CLINICAL PATIENT ASSIGNMENT  
PRIOR TO JUNIOR YEAR

Discipline	Number of Affirmative Replies
Oral Diagnosis	45
Community Dentistry	36
Periodontics	35
Radiodontics	35
Operative Dentistry	34
Anesthesiology	23
Dental Auxiliary Utilization	22
Pedodontics	17
Prosthodontics	17
Endodontics	7
Oral Surgery	7
Orthodontics	6
Fixed Prosthodontics	3

The responsibilities of the student assigned as an assistant to an upperclassman varied. Most frequently mentioned were those considered

typical chairside dental assistant duties; i.e., patient and operatory readiness, mixing materials, passing instruments, maintaining a dry field of operation, sterilization procedures, etc. In order of prevalence, obligations also advised were:

1. Prophylaxis and polishing procedures
2. Exposure of radiographs
3. Radiographic interpretation
4. Dental health instruction
5. Impression taking
6. Insertion of restorations
7. Application of the rubber dam
8. Prosthesis adjustments
9. Application of matrix bands
10. Treatment planning

Two problems encountered by the subjects in the student sample involve the students' first contact with the clinical patient and their knowledge pertaining to records and distribution of supplies. The type of instruction and training employed to solve these difficulties was requested in Part B of the survey questionnaire. Data compiled was classified according to instruction presently used, that which had been instigated within the past three years, and that which should be included within the next three years.

With rare exception, little change is anticipated to acquaint the student to records and distribution of supplies. Orientation in this area is grossly overlooked. Presently most schools pursue the traditional pattern of presenting lectures and information following the completion of the sophomore

year. A few replies suggested methods which are used and should be helpful to those educators confronted with this problem.

1. Seminars and small group demonstrations before the student is assigned to the clinic.
2. Printed information is given to each student as he starts his clinical role.
3. Duty days in distribution areas to acquaint the student with the format and policy.
4. Lectures given to promote a thorough understanding of dispensibles and their distribution.
5. Clinical records and charts should be used in preclinical technic courses.
6. Assignment of students in areas such as Oral Diagnosis and Radiodontics to further promote familiarization with charting and registration procedures.
7. Allow a student to completely register, diagnose, and provide a treatment plan for a classmate prior to actual clinical patient assignment.
8. Visual aids in the form of sample records and charts properly completed should be available.

Comments pertaining to student preparation for his initial patient contact were more frequent. Tables XIII and XIV indicate the percentage of respondents who utilize various methods of instruction to acquaint freshman and sophomore students to the clinical patient.

TABLE XIII

## INSTRUCTION EMPLOYED TO ACQUAINT FRESHMAN STUDENT TO CLINICAL PATIENT

Type of Instruction	Present Method	Recent Change	Future Programs
General clinic orientation lectures	33%	25%	19%
Demonstrations and seminars	21%	40%	37%
Observation of clinical activities	15%	57%	11%
Classmate is student's first patient	10%	20%	4%
Assisting an upperclassman	9%	25%	22%
Other	12%	17%	7%

TABLE XIV

## INSTRUCTION EMPLOYED TO ACQUAINT SOPHOMORE STUDENT TO CLINICAL PATIENT

Type of Instruction	Present Method	Recent Change	Future Programs
General clinical orientation lectures	30%	0%	24%
Classmate is student's first patient	18%	0%	4%
Demonstration and seminars	15%	0%	40%
Assisting an upperclassman	9%	67%	10%
Observation of clinical activities	8%	100%	4%
Other	21%	0%	18%



Presently, orientation lectures are used as the principal means of indoctrination. Although seminars and small group demonstrations are not so frequently mentioned, they are the most repeated suggestions for future programs. A comparison also reveals that freshman orientation procedures are recent innovations in many schools.

Tables XV and XVI indicate the principal disciplines involved in clinical orientation. Although they are not in identical sequence for each class, the departments most often responsible for this objective are Oral Diagnosis, Operative Dentistry, and Periodontics. Responses indicated that greater responsibility should be placed in the Community Dentistry department when planning orientation programs. Replies also favored an increased involvement of the Operative Dentistry department.

TABLE XV

## DISCIPLINE INVOLVED TO ACQUAINT FRESHMEN TO THE CLINICAL PATIENT

Discipline Involved	Present Method	Recent Change	Future Programs
Oral Diagnosis	30%	35%	12%
Operative Dentistry	17%	0%	28%
Periodontics	15%	25%	14%
Community Dentistry	14%	46%	28%
Prosthodontics	7%	20%	2%
Oral Surgery	4%	67%	2%
Radiodontics	4%	67%	0%
Other	9%	14%	14%

TABLE XVI

## DISCIPLINE INVOLVED TO ACQUAINT SOPHOMORES TO THE CLINICAL PATIENT

Discipline Involved	Present Method	Recent Change	Future Programs
Periodontics	22%	10%	15%
Operative Dentistry	18%	18%	16%
Oral Diagnosis	15%	21%	11%
Oral Surgery	12%	18%	2%
Radiodontics	10%	11%	9%
Prosthodontics	6%	17%	6%
Community Dentistry	5%	40%	25%
Other	12%	9%	16%

Part D of the questionnaire was concerned with opinions relating to the development of a clinical orientation course, per se. There were fifty-two favorable and seven negative responses. The latter suggested that clinical orientation should be a responsibility of several departments and would be most beneficial if it were incorporated in the period immediately preceding the acceptance of patients. Twelve percent of all replies indicated that departmental orientation lectures were presented at the end of the sophomore year.

Of those individuals who indicated approval, thirty-nine felt this course should carry regular academic credit; thirty-four indicated that twelve

quarter hours would be sufficient time to accomplish the objectives sought, while the remainder indicated that this amount of time was not ample.

Seventy-one percent indicated the course should be offered either the first or second quarter of the freshman year. A majority also indicated that a second course, per se, should be offered in the sophomore year.

The topics which were indicated for a freshman clinical orientation course are tabulated in Table XVII. The comparison is made of those items

TABLE XVII

## GROUP COMPARISON OF FRESHMAN CLINICAL ORIENTATION COURSE TOPICS

Topic Pertains To	Survey Response	Faculty Response	Student Response
Proper Oral Hygiene	88%	70%	86%
Personal Hygiene	88%	57%	86%
Instrument Identification	84%	13%	61%
Patient Behavior	75%	61%	53%
Charting Procedures	74%	39%	57%
Patient Records	64%	61%	54%
Patient Appointments	48%	35%	54%
Xray Equipment	44%	9%	29%
Radiograph Processing	35%	22%	41%
Radiograph Exposures	32%	26%	46%
Other	22%	44%	29%

the Loyola University student and faculty samples recommended to the topics indicated by the educators in the survey. A majority of the subjects in each group agreed that four topics, namely patient records, personal hygiene, patient behavior, and proper oral hygiene, should be included in the context. The majority were also in agreement that the topics pertaining to radiodontics should be presented later in the curriculum. Students and the survey group agreed that instrument identification and charting procedures could be taught in the freshman year; however, the Loyola University faculty maintained this material should be introduced during individual departmental orientation in the sophomore year. The opinion was that these topics should be gradually considered as the situation arises. The student would become familiar with an instrument when it would be used for a particular technic; the restorative procedure or diagnostic notation should be charted at the time that the principle is taught.

Even though some differences of opinion exist among educators, it is evident that there is definite agreement pertaining to the sequence of introducing specific topics and subjects in the curriculum. Although many curricula include the suggested orientation topics as isolated departmental subject matter, it is conceivable that the material could be compiled and presented in a correlated introductory clinical orientation course, per se.

The final aspect of this investigation was to then determine if this approach had been attempted. If so, the results would possibly give an indication of the success of such an endeavor. Pitfalls could be recognized and corrected before encountered. The accumulation of this knowledge would be most valuable.

While one does not consult with any one expert to seek answers or solutions to problems relating to curricula, it is, however, of value to compile and to integrate the philosophies of those who are considered experts in this field. One approach is to gather information from teachers, curriculum planners, administrators, and educational philosophers concerned with dental education. This compilation of data is most valuable to a dental curriculum committee to assess changing concepts which otherwise might be neglected. This does not imply general acceptance of these concepts just because other schools or educators might favor them. As justly stated by Krug, "it does not mean that one should try to follow the trend."<sup>25</sup>

Availability of data does not preclude the need for further surveys by curriculum committees. Specific questions or problems regarding a curriculum may not necessarily be solved simply by national surveys of other schools. However, interviews, consultations, and correspondence with dental educators and members of organized dentistry were most helpful as an aid in formulating objectives.

Some schools are changing the traditional curriculum and teaching program by introducing the student to an earlier clinical experience. Hence, a concerted attempt is made to correlate the basic sciences with the student's clinical experiences.

Dr. Mervyn A. Rogers, Professor of Clinical Dentistry, McGill University, Montreal, Canada, states:

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<sup>25</sup>Edward A. Krug, Curriculum Planning (New York: Harper and Row, 1957), p. 261.

The early introduction of the dental student to the clinical situation is now generally accepted as desirable. I agree and feel that it is a learning challenge to the student and, no less important, it is a strong motivating force. The student quickly realizes that basic sciences are necessary to clinical practice rather than hurdles to be overcome and forgotten.

We haven't been able to do this at McGill because of space and staff limitations. The latter is rapidly being corrected and we are planning new facilities. Once these aims have been met we plan

- a) To introduce first year students to the main clinic at least one half-day every two weeks beginning in the last half of the academic year. They will begin by examining each other and when they have learned what to look for and how to see it, they may progress to clinic patients. We feel that they could quickly learn to separate the normal from the abnormal even if they cannot categorize the latter.
- b) Early in the second year they will spend one-half day per week doing simple prophylaxes and charting, progressing to simple restorations, radiology, and local anaesthesia.

They should then enter their junior year ready for a real challenge in clinical practice.<sup>26</sup>

Dr. Rogers, however, feels that the preclinical student should not assist an upperclassman since there is little that the student could do but routine assistant duties. He further remarks that the seniors are not always the best examples for students to emulate.

The effects of earlier clinical experience is substantiated by the statement of Dr. Norman Trieger, Chairman of the Curriculum Committee at the University of California School of Dentistry, Los Angeles, in regard to a recently approved curriculum revision.

It is working surprisingly well; it has fostered even greater interdepartmental co-operation in teaching. The freshman students

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<sup>26</sup>Letter from Dr. Mervyn A. Rogers, Professor of Clinical Dentistry, McGill University, Montreal, Canada, December 20, 1967.

are finding new meaning in studying the basic sciences after they have had initial clinical exposure. I think you will agree that dental education is in need of some profound improvements if we are to break the lock-step which has resulted in more and more material being pumped into the curriculum without opportunity for evaluation.<sup>27</sup>

Emphasis is given to several of the guidelines which have been incorporated in the revision.

1. The broad concerns of oral health - caries, periodontal disease, malocclusion, and related oral diseases of the hard and soft tissues - require integrated presentations early in the student's professional career.

2. Co-ordinated, interdepartmental teaching is the responsibility of the curriculum.

3. The curriculum should be directed to the total patient concern early in the teaching program to maximize on his desire to help people and at the same time stimulate interest in the related basic sciences.

4. A spiraling curriculum is essential. By graduated and planned reinforcement, new material is introduced on successive, more sophisticated levels.

5. A "clinical laboratory," considered as an adjunct to the technique laboratory, is essential to the curriculum. A parallel teaching program between the two laboratories should continue concomitantly, providing patient contact and rapport long before actual restorative procedures are performed.

The University of Texas at the Houston Dental Branch is also in the process of applying a curriculum revision. Although experimental and subject

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<sup>27</sup>Letter from Dr. Norman Trieger, Chairman, Curriculum Committee, Professor of Oral Surgery, University of California School of Dentistry, Los Angeles, January 12, 1968.

to change, the freshman student is exposed to clinical experience the first quarter of the teaching program. Each department is allocated one-one hour period the first quarter to use as it deems best for this orientation purpose. Coincidental with the orientation sessions various departments integrate and give lectures which introduce the concepts of prevention and oral disease, oral health, hygiene, and physical therapy methodology. Clinic for the first year student consists of clinical activity in four categories. The first of these involves diagnostic procedures, including interviewing, history taking, charting of dental conditions, and examining the oral cavity. The remaining three categories are roentgenology, prophylaxis, and advanced diagnostic procedures. Clinical involvement during this period is accomplished on a student to student basis under close supervision. It is during the third quarter of the freshman year that the student is assigned selected clinical patients.

Dean John V. Olson remarks:

The clinical faculty has observed that the freshman and sophomores are making a smoother transition into clinic and are exhibiting more concern over the welfare of their patients than recent classes of juniors and seniors have demonstrated. The faculty has been very conservative in its planning for the clinical activity of the first and second year students, trying to maintain a care for the welfare of the patient and to see that the students lose nothing by this departure from tradition.<sup>28</sup>

A quotation from Dr. John M. Coady, Assistant Secretary, Council on Dental Education, American Dental Association, substantiates many of the statements included in this last section.

For the past decade, dental educators have placed increased emphasis on the need for increasing the dental student's knowledge,

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<sup>28</sup>Letter from Dr. John V. Olson, Dean, The University of Texas Dental Branch, Houston, January 5, 1968.



in both scope and depth, of the sciences basic to dentistry. Today, it is fact that the quality of basic science instruction in most schools has greatly improved. However, there is still the perennial problem of applying this knowledge to the clinical practice of dentistry.

In former years, such approaches as a two-week clinical orientation course or a summer orientation course to the dental clinic was required by various dental schools. The results, needless to say, were unsatisfactory.

At present, a new approach appears to have some merit. The student is exposed in the first years of dental study with core basic science subject matter. Courses in Oral Biology are then offered and utilized to supplement the student's basic science knowledge and at the same time orient this knowledge to clinical practice. Specifically, this multi-disciplinary approach is utilized to co-ordinate and integrate the basic sciences with problems of the mouth through lectures, seminars and multi-purpose laboratory exercises. All subject matter related to this discipline is explored in depth and appropriately correlated to diagnosis and the cause and prevention of oral disease.<sup>29</sup>

Students should have an opportunity to instruct a clinical patient in dental health education as well as to become orientated by observation to the dental auxiliary utilization program. Perhaps the student's formal work could be accomplished by seminars and temporary patient contact following the seminars. When the student enters the second year of the program, he should have an opportunity to accomplish actual procedures in oral diagnosis, treatment planning, prosthetics, and operative dentistry.<sup>30</sup>

#### Summary

This study was undertaken to investigate methods which are used to prepare the preclinical dental student for his transition to clinical dentistry. It was intended to discover recent trends and changes taking place which may facilitate this orientation in a more efficient and meaningful manner.

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<sup>29</sup>Interview with Dr. John M. Coady, Assistant Secretary Council on Dental Education, March 18, 1968.

<sup>30</sup>Follow-up letter to interview with Dr. John M. Coady, March 18, 1968.

Although prime emphasis is placed on innovations which have been completed consideration must be given to the compiled suggestions which would facilitate curriculum change.

An attempt was made to identify some of the facets of a present teaching program that may be responsible for needed changes and lack of preparation for current trends in the dental profession. Three groups were selected for this investigation. The present junior class at Loyola University's School of Dentistry voiced their criticisms regarding the orientation program, opinions pertaining to methods of orientation and suggestions for topics in a freshman clinical orientation course. The recommendations of this sample were compared to the suggestions of the two remaining groups. The second sample represented the dental school faculty at Loyola University, and the third group consisted of subjects from fifty other dental schools in the United States and Canada.

Data revealed that there is overwhelming agreement that clinical orientation should exist prior to the junior year. A majority of each group concurred with the procedure of assigning a clinical patient to the sophomore student. There were diversified opinions concerning other methods of orientation. A majority of the subjects in each group agreed that the Oral Diagnosis, Community Dentistry, Periodontics, Radiodontics, and Operative Dentistry departments should be involved in early introduction to clinical dentistry.

The survey group did not favor the assignment of the underclassman to an upperclassman as an assistant; the other two groups, however, indicated a significantly high preference for this policy. Typical chairside dental assistant duties were primarily recommended as the responsibilities of the student-assistant.

Lectures and seminars are the most frequently used methods in current orientation programs. Many respondents indicated emphasis should be placed on small group demonstrations and seminars in future programs and expressed approval of a freshman student assisting an upperclassman. Even though clinical orientation of the freshman student is a relatively recent innovation in a number of schools, a great majority favored an academic credit freshman clinical orientation course, per se. Topics pertaining to Oral Hygiene, Personal Hygiene, Patient Behavior, and Patient Records were preferred by all groups; however, there were varied opinions concerning other topics.

To date, implementation of early clinical exposure in new teaching programs has met with success in three schools. Although these ventures are still in the formative stage, there are indications that the student does experience a more favorable transition to clinical dentistry.

The overall conclusion is that many educators are still following traditional methods of clinical orientation: a great majority of the administrators and teachers, however, are concerned with the changes needed in existing programs. Many trends are gaining momentum; the introduction of the student to the clinical patient in the freshman year; correlation of basic dental and basic biological sciences as part of curriculum change; co-ordination of the preclinical science courses to clinical dentistry applications; and recommendation of earlier clinical orientation programs.

Consistent with its heritage and background, the dental profession is not standing still. Many educators are not content with the status quo nor do they fear change. Provisions are being made in various curricula to provide the essential background for today's graduate to meet the challenge of tomor-

row. Changes in curriculum are usually slow; however, if only a limited number of teachers are presently willing to change or modify the teaching programs, it is hopeful that many more educators will follow this example.

## CHAPTER VI

### PHILOSOPHY AND OBJECTIVES OF A TEACHING PROGRAM

Ralph W. Tyler in his syllabus, Basic Principles of Curriculum and Instruction, states questions which must be answered in developing a plan of instruction. This investigation is concerned with three of these basic problems:

1. What educational purposes should the program seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?<sup>31</sup>

An educational program is directed by the expectations of certain outcomes. These aims and objectives are dependent upon many factors. The platform of education aims may be either narrow or comprehensive, balanced or unbalanced, depending on what the education philosophy of a teaching institution might be. Whatever its precise relation is to various kinds of knowledge, there is a general agreement on the type of problems with which philosophy is centrally concerned. They are those which raise the question of the meaning of human life and the significance of the world in which man finds himself.<sup>32</sup> Philosophy is often referred to as the interpretation of knowledge or human experience in the light of available knowledge. This means one's philosophy is

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<sup>31</sup>Ralph W. Tyler, Basic Principles of Curriculum and Instruction (Chicago: The University of Chicago Press, 1950), p. 54.

<sup>32</sup>Hilda Taba, Curriculum Development: Theory and Practice (New York: Harcourt, Brace and World, Inc., 1962), p. 196-205.

an attempt to organize the materials of human experience into some reasonably coherent arrangement.

A comparison of the philosophies of three different schools of dentistry reveal a similarity and general agreement on the types of outcomes with which they are concerned.

The educational philosophy of Chicago's Loyola University School of Dentistry is

to prepare the student for the general practice of dentistry by means of providing opportunity to build a solid foundation of dental knowledge and to attain professional skills; to motivate investigative curiosity and a desire to participate in the advancement of knowledge; and to guide in the development of a balanced sense of values as revealed by the intellectual, ethical, social, and moral attitudes; to appreciate the dignity and God-given rights of man, of all men, regardless of color, creed, or race; and to engender and nurture not only a sense of responsibility to the public whom the profession serves but to use this foundation to accommodate and adapt to the needs and demands expected of him in the future.

The prime philosophy is to give the student a broad foundation of the basic sciences upon which clinical success and understanding of all health services rest. We seek to integrate general education, social and cultural improvement with a blending of science and professional competence.<sup>33</sup>

An integral part of a medical center complex, the University of Kentucky College of Dentistry's philosophy is

consonant with the philosophy of the University of Kentucky Medical Center as a whole; the College of Dentistry has as its aim the development of the biologically orientated, technically capable, socially sensitive dental practitioners who are keenly aware of the significance of their potential contribution to the total health of their

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<sup>33</sup>Application For Joint Construction Grant: PHS 4687, submitted by Loyola University School of Dentistry to the U.S. Dept. of Health, Education, and Welfare, Washington, D.C., March 18, 1965, p. 31.

patients. These practitioners should have confidence in their ability to render service, but should be aware of and dissatisfied with their limitations. They should be prepared to assume major responsibility for their continuing development toward a well-rounded professional man.<sup>34</sup>

Organized as part of Oregon's State System of Higher Education, the University of Oregon Dental School's four-year undergraduate curriculum is developed according to a similar general philosophy.

No course of instruction can serve as a substitute for intelligence and the will to learn. A well-planned and well-taught curriculum can, however, provide favorable conditions for the most effective development of the student's native abilities. The content, sequence, and methods of instruction can implement the application of intelligence and encourage the desire to learn. This is the basic educational philosophy on which the course of study at the University of Oregon Dental School has been built.<sup>35</sup>

On the basis of a philosophy, most objectives are stated on a general level to provide an orientation to the main emphasis in education programs. These general outcomes cannot be accomplished nor satisfied unless more specific aims are attained. The function of the latter objectives is to guide the making of curriculum decisions on what to cover, what to emphasize, what content to select, and which learning experiences to stress.

This investigation is concerned with specific learning exercises and experiences which should be stressed in the various courses included in the preclinical years of the teaching program. The author has used Loyola University's curriculum as the example to incorporate various suggested experiences which should permit a more satisfactory transition of the student to his

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<sup>34</sup>Bulletin of the University of Kentucky College of Dentistry, University Publication, LV, No. 10 (Lexington, Kentucky: University of Kentucky Press, 1963), p. 24.

<sup>35</sup>University of Oregon Dental School Catalog, No. 123 (Eugene, Oregon: Oregon State Board of Higher Education, July, 1964), p. 20.

clinical role. Selection of the teaching program is on the basis of the author's familiarity with it.

Teaching situations are peculiar to each institution. The range of variability in scope and depth of learning experiences would be as extensive as that in any other area of the curriculum. To ascertain which learning exercises would best suit every teaching program is impracticable; however an awareness of the methods used in existing programs and the suggestions offered for future programs should be an asset in attempting to accomplish this endeavor.

Before an orientation program can be developed, a basic philosophy must be understood. An attempt will then be made to organize the data compiled in a somewhat reasonably coherent clinical orientation program.

It is impossible to break a link between a philosophy of life and a philosophy of education - my philosophy of life is twofold - Catholic and Democratic. Yet as this relates to dental education, I must consider other more specific factors. I would not, nor do I feel, as a dentist and teacher that it is necessary to teach Catholicism or preach democratic principles while working in our education system. Since example is the great teacher in the matter of forming life attitudes, I can be a powerful influence for the development of virtues in lives of individuals if I demonstrate in my life these same virtues.

The school as the formal agency of education has a most important part to play in the development of the whole student. Therefore, I feel the teacher must be concerned with all phases of this development - physical, social,



moral and intellectual. The development of a solid foundation of dental knowledge and professional skills with an investigative curiosity is quite essential in the formation of a dentist. He must develop a proficiency in dental skills that will permit a continued development and perfection. The desire to participate in the advancement of knowledge must be accompanied by the development of a balanced sense of values. This must be revealed by intellectual, ethical, social and moral attitudes. An appreciation of the God given rights of man, of all men, regardless of color, creed, or race is a part of my philosophy. As a dental educator, I must instill in my students a sense of responsibility to the public whom the profession serves. They must use this entire foundation to accommodate and adapt to the needs and demands expected of them in the future.

The teacher has the duty and privilege of helping the students with whom he comes in contact by further developing personality traits of kindness, courtesy, understanding, compassion, and co-operation which should characterize the professional man as a citizen and public servant. Since he is expected to be a leader in the community, the student must therefore be prepared to meet this obligation.

The moral development of the student is an important factor. This phase is perhaps the most important and possibly the most difficult task for the teacher in all phases of education, from the primary grades through the professional level. I believe the school must provide personal guidance, disciplinary regulations, and a system of rewards and punishments truly social in nature. Above all the example of inspiring teachers can effect the training

in the moral virtues. As virtues are habits, teachers must continually strive to develop attitudes that will put these habits into action in those situations which call for them.

Teaching should be a way of life, not a part time job just to keep busy. Teaching is a profession with certain responsibilities. We must have knowledge and skills, but especially we should acquire skill in communicating our knowledge and skills to young people. Knowing our subject is no longer enough. We also must know how to teach it.

Specifically, my job is to impart knowledge; that is, to participate in the main function of the school: the mental development of the student. However, I do not believe this is my most important job in the clinic, laboratory, or lecture room. I have an obligation to strive to foster and perpetuate growth in knowledge and skills as well as understanding basic to wisdom. I would further hope to broaden and deepen the students' interests so that they will continue their education after graduation. In this endeavor I would hope to do my part in preserving and propogating the intellectual tradition of Catholic culture and our American heritage and culture.

## CHAPTER VII

### CLINICAL ORIENTATION IN A DENTAL SCHOOL

#### TEACHING PROGRAM

On the basis of any philosophy selected the principal objective of any dental school is to provide the best possible education for its students. An attempt to give them clearly defined goals, a deep sense of personal and social responsibility, and a firm understanding and commitment to ethical and moral standards. Effort is made to lay the foundation on which the students may then build and prepare properly for life.

In planning an educational program to attain given objectives, the decision must be made on the particular educational experiences to be provided. It is through these encounters that learning will take place and the educational objectives accomplished. Loyola Dental School strives to pursue these goals with a curriculum designed to be broad in scope, meaningful in detail, flexible in its execution, and maintain a maximum correlation between the various disciplines. The curriculum is divided into three major areas of study:

1. Basic Biological Sciences
2. Basic and Clinical Dental Sciences
3. Applied Sciences<sup>36</sup>

The student is exposed to these three areas of study throughout each of the four years of his dental education. However, as he progresses, there is a

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<sup>36</sup>Joint Construction Grant, "Narrative," pp. 55-56.

change in emphasis. In the freshman year the major concentration is in the basic biological sciences with less emphasis on the basic dental sciences. There is limited exposure to the clinical phase of dentistry. In the first year, as well as in subsequent years, a definite program to correlate the basic biological and dental sciences to clinical dentistry is developed through a series of conjoint lectures.

Emphasis shifts to the basic dental sciences in the sophomore year. As the dental student progresses, clinical exposure increases. Added emphasis is placed on the conjoint lectures. In the latter part of the sophomore year, the dental student is assigned complete clinical patient responsibilities. Concurrently, he becomes familiar with the utilization of the dental auxiliaries. He is thereby well prepared to pursue his clinical practice in the latter part of the sophomore year.

The junior student spends a significant portion of his training in clinical practice. The conjoint program is greatly expanded. The basic sciences and clinical sciences are presented on a more sophisticated level. The student begins to utilize effectively the well-trained dental assistants.

In the senior year emphasis is placed on a seminar program. The student is assigned to small groups for at least seventy-two hours of seminar. Special time is set aside for elective courses in areas of particular interest to the individual student. He continues his clinical practice and attends conjoint lectures. The student is indoctrinated in hospital procedures which include participation in teaching ward rounds. In this way the student becomes familiar with hospital dentistry.

A course in Community Dentistry including such subjects as public health, preventive dentistry, mass casualty, etc., spans the entire four-year program. A significant portion of this course is devoted to the behavioral sciences. It should be noted that in all four years, time has been left free of course work, allowing for independent study. This time may also be utilized for special projects, student research, or an honors program.

The curriculum prepares the student to meet any future changes in his profession. It develops in him an awareness of his role in the community as well as of the needs and desires of the patient. The application of this curriculum provides a healthy teaching environment that will motivate the student and stimulate his intellectual curiosity. It is felt that this curriculum provides the student with a basic dental education to enter dentistry as a health profession.

This investigation involves the transition from the preclinical to the clinical stages of the teaching program. Therefore, only the first two years of the dental curriculum will be stressed. Emphasis will be placed on the specific objectives related to the clinical orientation aspect of the student's education. The author's objective in this chapter is to list certain clinical orientation objectives sought and to also recommend methods of accomplishing these aims. The prime purpose of stating these objectives is to indicate specific changes desired in the students' patterns of behavior. An awareness of clinical procedures is sought in the earlier encounters. As the student progresses, it is believed that an appreciation of skills and techniques will emerge. The objective is to facilitate the transition in a most harmonious, meaningful manner.

## FRESHMAN CURRICULUM

<u>Major Areas and Disciplines</u>	<u>Number of Clock Hours</u>		
	<u>First Quarter</u>	<u>Second Quarter</u>	<u>Third Quarter</u>
<u>Basic Biological Science</u>			
Gross Anatomy	108	108	
Oral Anatomy			60
Biological Chemistry	72	72	
Physiology			72
Histology	60	48	
Microbiology			108
<u>Basic and Clinical Dental Science</u>			
Dental Materials	60		
Clinical Orientation	24		
Oral Morphology	60	48	
Restorative Technique			48
Prosthodontics		96	96
Clinic			
<u>Applied Science</u>			
Community	12	12	12
Conjoint	24	12	12
Free Time	<u>48</u>	<u>48</u>	<u>48</u>
<b>Total Clock Hours</b>	<b>468</b>	<b>444</b>	<b>456</b>

## SOPHOMORE CURRICULUM

<u>Major Areas and Disciplines</u>	<u>Number of Clock Hours</u>		
	<u>First Quarter</u>	<u>Second Quarter</u>	<u>Third Quarter</u>
<u>Basic Biological Science</u>			
Neuroanatomy	60		
Physiology and Microbiology	72		
Pharmacology		72	
Pathology	48	96	96
<u>Basic and Clinical Dental Science</u>			
Dental Auxiliary Utilization			12
Dental Materials	48		
Endodontics		48	
Fixed Prosthodontics		48	96
Operative Dentistry	96	84	
Oral Diagnosis			12
Orthodontics			48
Pedodontics		24	24
Periodontics			24
Prosthodontics	96	48	
Radiodontics		24	12
Clinic			96
<u>Applied Science</u>			
Community	12	12	12
Conjoint	12	12	12
Free Time	<u>48</u>	<u>48</u>	<u>48</u>
Total Clock Hours	492	516	492

## FRESHMAN ORIENTATION

Gross Anatomy

- Objectives:
1. To develop an awareness for a thorough knowledge of anatomy.
  2. To develop an awareness of the clinical application of anatomy.
  3. To develop an appreciation for co-operation among members of the health team.
  4. To become familiar with the hospital environment.
  5. To acquire a feeling of the "whole" patient concept.

Method: The student would be scheduled during two laboratory sessions in the second quarter to enable him to accompany and observe a health team involved in routine hospital surgical ward rounds, observe autopsy proceedings in a hospital environment, and assist during exodontia and oral surgery procedures.

Oral Anatomy

- Objectives:
1. To develop an awareness of sterile technics used in dentistry.
  2. To develop an understanding of the oral abnormality as an integral part of the entire patient.
  3. To acquire an interest in clinical dentistry.

Method: The student would be scheduled during one laboratory session in the third quarter to observe exodontia and oral surgery procedures, prepare tray setups for routine extraction cases, and become familiar with methods of sterilization.

Biological  
Chemistry and  
Histology

- Objectives:
1. To acquire habits of attention to fine details in the performance of laboratory procedures.



2. To develop an appreciation for the understanding of chemistry and histology as it relates to the clinical patient.

**Method:** The student would be scheduled during one laboratory period of either course in the second quarter. His duties would consist of assisting the laboratory technician in the medical laboratory of the Diagnosis department. The student would become familiar with various chemicals and drugs when dispensing the solutions for laboratory tests, perform laboratory tests, and observe procedures related to histological slides.

### Clinical Orientation

This course is outlined in detail in the following chapter.

### Dental Materials

- Objectives:**
1. To develop an awareness of the proper handling of dental materials.
  2. To acquire a familiarity with the properties of materials used in dentistry.
  3. To acquire a sense of responsibility towards the clinical patient.

**Method:** The student would be scheduled during the regular laboratory session of the first quarter to take impressions on a classmate. This should be done in a clinical environment. The student could also be assigned as an observer or assistant to an upperclassman to observe the handling of materials; he could also be given the responsibility of preparing waxes and mixing materials.

### Restorative Technique

- Objectives:**
1. To apply the basic understanding of dental and technical skills to actual patient care.
  2. To acquire an awareness of the close association of preclinical technics to clinical dentistry.

3. To acquire an appreciation of the skills essential for patient care.
4. To develop an awareness of the role of the dental assistant.
5. To acquire a familiarization with clinical format and policy.
6. To acquire habits of co-operation and responsibility during clinical procedures.
7. To acquire an awareness of patient behavior.
8. To develop an awareness of the doctor-patient professional rapport.

Method:

Two scheduled assignments would immediately follow the students' completion of a particular laboratory exercise such as cavity preparation and placement of an amalgam restoration. For two consecutive laboratory periods, the students would be assigned in pairs so that one would serve as the dentist and the other as the chairside assistant. This would be followed by the second assignment whereby each preclinical student serves as an assistant to an upperclassman. He would be scheduled in the clinic for one afternoon of the third quarter. His responsibilities would include seating the patient, placing the rubber dam, obtaining expendibles required for the particular exercise, and assisting the upperclassman with instrumentation, aspiration, and other typical chairside assistant duties. All charting and recordings for this procedure would be done by the freshman student. It is assumed that a TV demonstration-lecture would precede the laboratory exercises as well as the clinical assignment.

Prosthodontics

- Objectives:
1. To develop an appreciation of the correlation between fundamentals taught in anatomy and dental materials, basics taught in prosthodontics, and clinical dentistry.
  2. To develop an appreciation for the application of knowledge gained in dental materials to prosthodontics and clinical dentistry.

3. To acquire a familiarization with clinical format policy, and supplies.
4. To acquire an appreciation of maintaining proper oral hygiene.

**Method:** For one laboratory period during the third quarter, the student is assigned as an observer-assistant to a senior student who is taking impressions on a clinical patient. The freshman could prepare the patient, obtain materials required for the exercise, perform chairside assistant duties, and dismiss the patient.

Learning exercises have been provided which make the subject matter more meaningful without the addition of courses to an existing program.

Table XVIII identifies the total number of clock hours planned for this freshman curriculum. Experiences mentioned could be substituted with others which could equally well correlate the preclinical to the clinical aspects of dentistry.

TABLE XVIII

HOURS OF CLINICAL ORIENTATION INCLUDED  
IN AN EXISTING FRESHMAN CURRICULUM

Department	First Quarter	Second Quarter	Third Quarter
Anatomy		6	3
Biological Chemistry		3	
Dental Materials	3		
Clinical Orientation	24		
Restorative Techniques			3
Prosthodontics			3
Total	27	9	9

## SOPHOMORE ORIENTATION

Microbiology and  
Oral Pathology

- Objectives:
1. To acquire an appreciation of the total patient needs.
  2. To learn to work with and understand auxiliary personnel.
  3. To develop an appreciation for fundamental knowledge of research activities.

Method: The student is assigned in the teaching hospital or dental clinic for one laboratory period during the second quarter. He would perform routine microscopic laboratory tests. This should include the preparation and interpretation of a slide for a clinical patient.

Pathology and  
Oral Diagnosis

- Objectives:
1. To develop an understanding of the total patient needs.
  2. To acquire a spirit of intelligent inquiry.
  3. To develop an appreciation for independent thought and action.
  4. To acquire an understanding of oral and systemic relations in both health and disease.
  5. To develop an appreciation for the correlation of the basic biological and clinical sciences.

Method: During the second quarter, each student should be assigned for one laboratory session to the Diagnosis department. This would enable him to perform duties such as seating, registering, and charting out-patients. Observation of completed diagnosis and treatment plans for in-patients should be included in this session. Pathological lesions of the oral cavity should be explained to the student. This laboratory assignment should be followed by two duty days in Oral Diagnosis, where greater emphasis is placed on these duties. The student should be encouraged to perform numerous laboratory tests such as blood

typing, blood pressure, and oral smears on the clinical patient. The student should be expected to make diagnostic casts and mount them on an articulator. One of the first assignments in the third quarter should be the registration and complete diagnosis of a classmate.

### Physiology and Pharmacology

- Objectives:
1. To develop a meaningful understanding of the proper techniques for the administration of a local anesthetic.
  2. To acquire an awareness of dental emergencies.
  3. To become familiar with the total patient concept.
  4. To apply basic science principles to a clinical situation.
  5. To acquire training in careful observation of details.
  6. To develop a more thorough understanding of the clinical patient.

Method: A series of lectures pertaining to local anesthesia must be scheduled prior to this orientation procedure. Ideally included in the conjoint course, the Anatomy, Physiology, Pharmacology, and Oral Surgery departments could each contribute to the presentation. The administration of local anesthesia is then demonstrated to small groups. This introduction would be followed by student assignment to the Oral Surgery department during the second quarter of the Pharmacology course. Scheduling would be done during the "free time" allowed each student. Under close supervision, the student would then administer local anesthesia to all out-patients. Additional duties would include post-operative treatments and assisting during surgical procedures.

### Endodontics

- Objectives:
1. To develop an understanding of case histories.
  2. To acquire a familiarization with prescription writing in a clinical situation.
  3. To develop an appreciation of the importance of minute details.

4. To develop a clear concept of normal structure and function in order to recognize the abnormal.

**Method:**

A series of conjoint lectures with excellent visual aids should precede the laboratory. The Histology, Pathology, Pharmacology, and Endodontics departments would be involved in the presentation. The student then applies this knowledge to actual endodontic procedures on extracted teeth mounted in a manikin. This is followed by clinical assignment for one period in the second quarter. The student observes and assists an upper-classman in the clinical environment. In the third quarter, the student is ready to proceed with endodontic care on his assigned clinical patient.

**Radiodontics****Objectives:**

1. To apply the principles and techniques of taking intraoral roentgenographs in a clinical situation.
2. To develop a familiarization with the Radiodontics department.
3. To acquire a more thorough understanding of total patient care.

**Method:**

Following a series of lectures and small group demonstrations in the Radiodontics department, each student will take a full set of radiographs on a classmate. This format will be a part of the registration, complete diagnosis, and treatment plan work-up mentioned as orientation procedures under Pathology and Oral Diagnosis departments in the second quarter. The student would also be responsible for the development and processing details.

**Prosthodontics****Objectives:**

1. To apply technical experience to a clinical environment.
2. To develop a familiarity with the Prosthodontics department.
3. To develop meaningful and realistic attitudes towards full denture prosthesis.
4. To develop an appreciation of providing a health service to a patient.

5. To develop a more complete understanding of a clinical patient.
6. To develop a more complete familiarization with clinical procedures and policy.

Method:

This would be a combined technic and clinical course in complete denture prosthodontics.<sup>37</sup> Patients would be selected and screened by the faculty. Lectures are correlated through television demonstrations. The Anatomy, Dental Materials, and Prosthodontics departments would be involved. The simultaneous construction of complete dentures by each student for both a manikin and a patient is accomplished in the first and second quarters. The student should then be prepared to continue in the third quarter with his regular clinical assignment.

Operative  
Dentistry

Objectives:

1. To acquire familiarization with clinical operative dentistry format and policy.
2. To develop a more thorough understanding of the operative dentistry clinical patient.
3. To apply the basic understanding of dental and technical skills to actual patient care.
4. To develop a good sense of clinical organization and practice administration.
5. To develop the importance of proper instrumentation.
6. To promote a desire for personal discipline and excellence in operative dentistry procedures.
7. To encourage and develop co-operation with all members of the dental team.
8. To develop a wholesome respect for good ethical and moral clinical practice.

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<sup>37</sup>Judson C. Hickey, "Combined Course in Technical and Clinical Complete Denture Prosthodontics," Journal of Dental Education, XXIX (June, 1965), pp. 155-161.

Method: In small group seminars, proper prophylaxis procedures are explained and demonstrated. During one laboratory period of the first quarter, students are assigned to the operative clinic. Students will be paired so that one serves as the dentist and the other as a patient. A prophylaxis is completed for a classmate. In the second quarter, a completely diagnosed, faculty selected clinical patient will be assigned to a student for two laboratory sessions. Under close supervision, the student will do all procedures related to a class I amalgam cavity preparation and insertion. This would be followed in the third quarter by clinical practice in the Operative Dentistry department. Simple restorative procedures would be performed.

The total number of clock hours scheduled for the sophomore curriculum are summarized in Table XIX.

TABLE XIX

HOURS OF CLINICAL ORIENTATION INCLUDED  
IN AN EXISTING SOPHOMORE CURRICULUM

Department	First Quarter	Second Quarter	Third Quarter
Microbiology and Oral Pathology		3	
Pathology and Oral Diagnosis		3	
Physiology and Pharmacology		6	
Endodontics		3	
Radiodontics		3	
Prosthodontics	24	24	
Operative Dentistry	3	6	
Clinic			96
Total	27	48	96



An approach to implement patient contact and clinical orientation in the preclinical years has been presented for an existing teaching program. This approach is meant only as an aid to educators who are considering earlier exposure of the preclinical student without actual clinical patient assignment. There are many educators who feel that the beginning student is not prepared to accept the patient in the freshman year. A basic background must be attained before the student is ready for this role. Despite this opinion the author feels that many methods are available to acquaint the student to a patient without actual assignment. The outcome would certainly permit a better transition than that which exists in many teaching programs. This view is confirmed by the data presented in Chapter V.

As the different courses are presented and the various basic biological principles and basic dental science technics are taught, many more learning experiences involving the clinical patient could be planned. This chapter mentions only a few examples of what can be done to reinforce and associate learning exercises. A much closer correlation of the basic fundamentals to clinical dentistry could be planned in most existing programs. This objective, however, could be more easily attained if schedules would allow for more flexibility in all aspects of teaching and of the learning situation.

## CHAPTER VIII

### FRESHMAN CLINICAL ORIENTATION COURSE

A dental student must undergo a continual acquisition and building of knowledge and skills prior to his readiness to assume the responsibilities associated with patient care. A series of individual but related learning experiences must be presented before he can acquire the total picture essential for a patient service. Although this readiness and preparation is most important, there are certain aspects of the teaching program which could be presented to the freshman student early in the dental curriculum. An introduction to clinical dentistry could serve as a motivating factor so that the student might prepare better for his later role.

Clinical Orientation is a lecture-laboratory clinical course designed to introduce the student to clinical dentistry the first quarter of the freshman year. It carries two quarter hours academic credit and involves twelve sessions of student contact, each lasting two hours.

Topics have been structured to give the student a basic understanding of the practice of dentistry as a health service. As mentioned earlier in this investigation, topics which were most often suggested for this course pertain to proper oral hygiene, personal hygiene, patient behavior, and patient records. On the basis of these recommendations and the objectives planned for freshman introduction to dentistry by Loyola University's curriculum committee the course has been developed. The objectives, lesson outline, methods and procedures for each scheduled session are presented on the pages which follow.

Session I

- Objectives:
1. To acquire an awareness of the disciplines and support facilities in a dental school.
  2. To acquire an introduction to dentistry.
  3. To develop an awareness of dentistry and the profession.
  4. To develop an awareness of basic dental nomenclature.

## Lesson

## Outline:

1. Introduction
  - a. Meaning and nature of clinical orientation
  - b. Objectives of the course
  - c. Scope of the course
2. The Dental School Organization
  - a. Disciplines
  - b. Support facilities
3. Overview of What Dentistry Is
  - a. Dentistry as part of the total health service
  - b. The dental team
  - c. Role of the dentist
  - d. Professionalism
4. Basic Dental Nomenclature

## Method:

A lecture making extensive use of visual aids to identify the various dental school disciplines will be given to the entire class. This will be followed by dividing the class into two groups. One section will remain in the lecture hall to prepare a short paper on professionalism while the second section will have a tour of the dental school identifying each clinical discipline. This procedure will then be reversed for the two groups.

Session II

- Objectives:
1. To develop an awareness of the importance of good general health.

2. To develop an awareness of the need of good personal hygiene.
3. To acquire proper oral hygiene habits.
4. To develop an awareness of inter-discipline relationships.

#### Lesson

##### Outline:

1. General Health
  - a. Importance of
  - b. Good health habits
  - c. Personal hygiene
2. Oral Hygiene
  - a. Meaning of
  - b. Consequences of poor oral hygiene
  - c. Tooth brushes and dentrifices
  - d. Proper use of the tooth brush
  - e. Maintaining proper oral hygiene

##### Method:

A lecture making extensive use of visual aids will be presented to the entire class. This will be followed by small group demonstrations relating the proper method of brushing the teeth. Recognition of calculus deposits and observation of several general oral conditions will be stressed. Visual aids, such as models, graphs, and charts, and clinical patients will be introduced to facilitate the presentation. Teachers from the Oral Diagnosis and Periodontics departments would be involved in the learning exercise.

#### Session III

- Objectives:
1. To develop an appreciation of clinical equipment.
  2. To provide a basic knowledge regarding handling and care of dental equipment.
  3. To develop a basic familiarization with various dental equipment.

#### Lesson

##### Outline:

1. Dental Equipment
  - a. The dental chair and patient seating

- b. Proper chair positions
  - c. Operation of the dental unit
  - d. Other equipment in the dental operator
  - e. Care and maintenance
2. Rotary Cutting Instruments
    - a. Handpieces and contra-angles
    - b. Prophylaxis angle
    - c. Other
    - d. Maintenance and care
  3. High Speed Instrumentation
    - a. Torque
    - b. Speed ranges
    - c. Physical factors involved
    - d. The dental pulp
  4. Burs
    - a. Types
    - b. Indications and contraindications
    - c. Cutting procedures
    - d. Care
  5. Others

**Method:**

The class will be divided in small groups each assigned to an instructor. Demonstrations and lecture information pertinent to the dental operator will be given to each group in the clinical environment. Classmates will serve as patients as each student will practice proper patient seating and chair positions. Under close supervision, handpieces and contra-angles will be disassembled and reassembled by each student so that he becomes familiar with the parts, maintenance, and care of the instruments. The students will then use the various rotary cutting instruments on models provided.

**Session IV**

**Objectives:**

1. To understand the basic principles of instrument identification.
2. To develop a basic familiarization with hand cutting instruments.

3. To acquire appreciation for the importance of hand cutting instruments.

#### Lesson

##### Outline:

1. Hand Cutting Instruments
  - a. Manufacture of
  - b. Parts of an instrument
  - c. Types and names of
  - d. Uses of
  - e. Instrument formulae
  - f. Care of
2. Instrument Grasps
3. Rests, Guards, and Guides

##### Method:

This will be a lecture-laboratory session whereby the student will be given pertinent information pertaining to hand cutting instruments. This will be followed by demonstrations and usage of instruments on prepared models of extracted teeth.

#### Session V

##### Objectives:

1. To develop an awareness of the clinical patient and his behavior.
2. To develop an awareness of clinical format and policy.

#### Lesson

##### Outline:

1. Short recall quiz
2. The Clinical Patient
  - a. Behavior patterns
  - b. Types of patients
  - c. Personality traits
  - d. Management of
  - e. The first patient
3. Registration and Appointments
4. Clinical Policies
5. Clinical Records

- a. Types of
- b. Importance of
- c. Legal implications

Method: This session will be primarily a lecture-laboratory period. The student will be introduced to the various forms used in the clinic. The class will be divided into small groups and expected to complete various forms he will experience during his clinical assignments.

### Session VI

- Objectives:
1. To develop an awareness of the importance of efficient records.
  2. To develop an appreciation for details during dental procedures.
  3. To develop a motivation to pursue clinical endeavors.
  4. To acquire a basic understanding of diagnostic procedures.

### Lesson

- Outline:
1. Physical Examination and Laboratory Tests
  2. Special Dental and Oral Examinations
    - a. Inspection
    - b. Palpation
    - c. Exploration
    - d. Percussion
    - e. Other
  3. Diagnostic Aids
    - a. Study models
    - b. Vitality test
    - c. Radiographs
    - d. Other

Method: A lecture covering the topics mentioned will be followed by small group demonstrations. Visual aids, such as slides, models and charts, and diagnostic aids will be used to facilitate the learning exercise.

Session VII

- Objectives:
1. To acquire a basic understanding of classification of cavities.
  2. To acquire a basic understanding of charting procedures.
  3. To develop an awareness for specific details when charting on a clinical patient.

## Lesson

## Outline:

1. The Dental Arches
  - a. Occlusion
  - b. Anatomical crown
  - c. Clinical crown
2. Classification of Cavities
  - a. Origin
  - b. Treatment
  - c. Surface
3. Types of Restorations
4. Missing and Replaced Teeth
5. Supporting Tissues and Structures
6. Calculus Formation
7. Charting Procedures

## Method:

Following the lecture and small group demonstrations, students will be paired. One will serve as the dentist while the other will be the patient. Complete charting and examination of the oral cavity will be accomplished under close supervision. It is anticipated that following this session, the students will be individually assigned to the Oral Diagnosis department to serve as observers or assistants to upperclassmen.

Session VIII

- Objectives:
1. To develop an awareness of the various clinical disturbances of the crown and supporting structures.



2. To develop an awareness of the need for total health care.
3. To acquire a basic introduction to operative dentistry.

#### Lesson

##### Outline:

1. Disturbances of the Clinical Crown
  - a. Disease - caries
  - b. Congenital and hereditary factors
  - c. Chemical - erosion - mottled enamel
  - d. Abrasion
  - e. Attrition
  - f. Accidental
  - g. Dietary
  - h. Anomalies
2. Classification of Caries
3. Restorative Dentistry
  - a. Definition
  - b. Responsibilities of

##### Method:

A lecture making extensive use of slides will be presented to the entire class. Small group demonstrations will follow whereby the students can observe various clinical manifestations of the oral cavity.

#### Session IX

##### Objectives:

1. To acquire a familiarization with dental caries and calculus formation.
2. To acquire an appreciation for the control of caries and calculus formation.
3. To develop a familiarization with various types of restorations.

#### Lesson

##### Outline:

1. Caries
  - a. Recognition
  - b. Causes
  - c. Diagnosis of
  - d. Prognosis of

## 2. Calculus Formation

- a. Recognition
- b. Causes
- c. Diagnosis of
- d. Prognosis of

**Method:** Primarily, this will be a lecture session utilizing slides to give the freshman student an awareness of dental caries and calculus formation. Completed clinical cases will be demonstrated in small groups to enable the students to develop a familiarization with dental restorative and corrective procedures.

### Session X

- Objectives:**
1. To develop an understanding of the importance of rubber dam procedures.
  2. To acquire a familiarization with the application of the rubber dam.

#### **Lesson**

##### **Outline:**

1. Field of Operation
  - a. Exclusion of Moisture
  - b. Cotton rolls
  - c. Gauze sponges
2. The Rubber Dam
  - a. History
  - b. Types
  - c. Purpose
  - d. Advantages
  - e. Disadvantages
3. Rubber Dam Clamps and Instruments
4. Application of the Rubber Dam
5. Removal of the Rubber Dam

**Method:** A lecture followed by small group demonstrations will introduce the student to rubber dam procedures. This will be followed by the application of the rubber dam on a classmate-patient.

Session XI

- Objectives:
1. To develop an awareness of the need for, and methods of patient education.
  2. To develop a familiarity to the whole patient concept.
  3. To develop a sense of appreciation for the various divisions of dentistry.

LessonOutline:

1. Recall Quiz
2. Patient Education
  - a. Importance of
  - b. Methods of
  - c. Preventive methods
3. The Whole Patient Concept
4. Relationship of the Various Dental Disciplines
5. The Dental Specialties

Method:

A lecture making extensive use of visual aids will be presented to the entire class.

Session XIIFinal Examination

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APPENDIX I



INTER-OFFICE COMMUNICATION  
LOYOLA UNIVERSITY

To Dr. \_\_\_\_\_ Date September 18, 1967

From Dr. Richard M. Stamm Subject Oral Biology Course Content

One of the new courses to be developed for the dental school curriculum is Oral Biology. This course will be offered in the first quarter of the freshman year. It is meant as an introductory course to (1) dentistry and (2) clinical exposure. The intention is to provide a more ideal transition from preclinical to clinical phases of the dental school teaching program. Your recommendations and assistance would be most helpful in the proper development of the course. To date, topics considered are as follows:

<u>Topic</u>	<u>Method of Instruction</u>
1. Proper Methods of Brushing	a. Lecture as to <u>how</u> and <u>why</u> b. Demonstration using oversized models, slides, and visual aids
2. Charting of Teeth	a. Lecture on methods and <u>why</u> this is important b. Assignment in Diagnosis Areas with the purpose of charting c. Examine mouth of classmate
3. Identification of Various Types of Restorations and Appliances	a. Lecture b. Models, visual aids c. Patient observation

Please complete the enclosed form and return to me by Thursday, September 28, 1967.

Respectfully requested,

Richard M. Stamm, Secretary  
Curriculum Committee

Enc. 1

Development of Oral Biology Course

Place an X in the appropriate space or briefly answer each question.

1. Should a student be exposed to clinical procedures prior to the junior year? \_\_\_\_\_ Yes \_\_\_\_\_ No.
2. Why or Why Not?
3. Can a student be exposed to limited clinical exposure as early as the first quarter of the freshman year? \_\_\_\_\_ Yes \_\_\_\_\_ No.
4. Why or Why Not?
5. Please indicate topics you would recommend as course content for the combined lecture-laboratory-clinic course. Please explain the teaching method you would use to make each topic more meaningful.

Topic Recommended

Method of Instruction

1.

2.

3.

4.

5.

6.

7.

8.

Development of Oral Biology Course (cont.)

6. This introductory course should be followed by additional exposure and clinical orientation during the preclinical years. Please indicate procedures and methods by which this objective should be accomplished. (If more space is required, do not hesitate to add more pages.)

a.

b.

c.

d.

e.

7. Name \_\_\_\_\_

APPENDIX II

November 22, 1967

Dr. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dear Dr. \_\_\_\_\_

A number of dental schools have expressed interest in early clinical training of the preclinical dental student. This is often accomplished by means of a clinical "observation" period for the freshman or sophomore student; some teaching programs have planned patient assignment to the sophomore student immediately prior to completion of his second year while other schools do not attempt clinical patient assignment until the junior year.

"Clinical Orientation of the Preclinical Dental Student" has been the topic selected for my research project in attempts to fulfill requirements for an M.A. degree in Education at Loyola University. In addition, as secretary of Loyola Dental School's Curriculum Committee, I would like to compile information pertaining to the subject which should be a valuable aid to curriculum planning in many dental schools.

A questionnaire to reflect your personal views is enclosed with this letter. The information and suggestions you might forward in completion of this form will be a great help in the fulfillment of the objectives mentioned above. I sincerely appreciate any time and assistance you might offer in the completion of this form. A self-addressed return envelope is enclosed for your convenience.

Sincerely yours,

Richard M. Stamm, D.D.S.

Enc. 1

Please place a check on the appropriate lines or briefly add your comments.

PART A. General Information

1. Number of years of teaching experience:

None _____	Other background _____
Less than five _____	Part time _____ Full time _____
More than five _____	Part time _____ Full time _____
More than ten _____	Part time _____ Full time _____

2. Academic rank:

Lecturer \_\_\_\_\_  
Instructor \_\_\_\_\_  
Assistant Professor \_\_\_\_\_  
Associate Professor \_\_\_\_\_  
Professor \_\_\_\_\_  
Administration \_\_\_\_\_  
Other \_\_\_\_\_

3. Discipline:

Preclinical \_\_\_\_\_  
Clinical \_\_\_\_\_  
Basic Science \_\_\_\_\_  
Community Dentistry \_\_\_\_\_

3. Do you feel clinical orientation should be included in the first two years of a dental school's teaching program? Yes \_\_\_\_\_ No \_\_\_\_\_.

4. When do you feel this orientation should commence?

a. First week of school \_\_\_\_\_  
b. First month of school \_\_\_\_\_  
c. Freshman Year, First \_\_\_\_\_ Second \_\_\_\_\_ or Third \_\_\_\_\_ Quarter.  
d. Sophomore Year, First \_\_\_\_\_ Second \_\_\_\_\_ or Third \_\_\_\_\_ Quarter.  
e. After completion of Sophomore Year \_\_\_\_\_  
f. Other \_\_\_\_\_

5. What type of orientation would you recommend for the more efficient indoctrination and/or handling of the clinical patient by the beginning clinical student?

a. Lectures \_\_\_\_\_ b. Seminar \_\_\_\_\_ c. Credit Courses \_\_\_\_\_  
d. Freshman \_\_\_\_\_ and/or Sophomore \_\_\_\_\_ students act as an observer.  
e. Freshman \_\_\_\_\_ and/or Sophomore \_\_\_\_\_ students assist upperclassmen.  
f. Freshman \_\_\_\_\_ and/or Sophomore \_\_\_\_\_ students assigned a clinical patient.  
g. Block assignment of Freshman \_\_\_\_\_ and/or Sophomore \_\_\_\_\_ students in various clinical disciplines.  
h. Other \_\_\_\_\_

6. If you feel the student should assist an upperclassman, what type of duties would the preclinical student have as his responsibility?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. If you feel the student should be assigned a clinical patient prior to the Junior year, which clinical disciplines should be involved?

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DISCIPLINE

Anesthesiology	_____	Oral Surgery	_____
Auxiliary Utilization	_____	Orthodontics	_____
Community Dentistry	_____	Pedodontics	_____
Endodontics	_____	Periodontics	_____
Fixed Prosthodontics	_____	Prosthodontics	_____
Operative Dentistry	_____	Radiodontics	_____
Oral Diagnosis	_____	Other	_____

PART B. Specific Instruction and Training Included in the Teaching Program

1. What type of instruction and training is presently employed at your school to introduce and acquaint the beginning student to the clinical patient? Indicate with an asterisk which type has been started within the past three years.

INSTRUCTION AND/OR TRAINING

CIRCLE YEAR GIVEN

a.	_____	1	2	3	4
b.	_____	1	2	3	4
c.	_____	1	2	3	4
d.	_____	1	2	3	4
e.	_____	1	2	3	4
f.	_____	1	2	3	4
g.	_____	1	2	3	4
h.	_____	1	2	3	4

2. What type of instruction and training is presently employed at your school to introduce and acquaint the beginning clinical student to records and distribution of supplies? Indicate with an asterisk which type has been started within the past three years.

INSTRUCTION AND/OR TRAINING

CIRCLE YEAR GIVEN

a.	_____	1	2	3	4
b.	_____	1	2	3	4
c.	_____	1	2	3	4
d.	_____	1	2	3	4
e.	_____	1	2	3	4
f.	_____	1	2	3	4

- PART C. What are your recommendations as to the type of Preclinical Instruction and Training Which Should Be Included in a Dental School's Teaching Program Within the Next Three Years?

TYPE OF INSTRUCTION AND/OR TRAINING

CIRCLE YEAR GIVEN

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a.	_____	1	2	3	4
b.	_____	1	2	3	4
c.	_____	1	2	3	4
d.	_____	1	2	3	4
e.	_____	1	2	3	4
f.	_____	1	2	3	4
g.	_____	1	2	3	4
h.	_____	1	2	3	4

PART D. Clinical Orientation Course for the Preclinical Dental Student

1. Do you feel that clinical orientation courses, per se, should be included in the teaching program? Yes \_\_\_\_\_ No \_\_\_\_\_.

2. a. If No, what type of clinical orientation do you recommend?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. If Yes, please answer questions 3 through 6.

3. Should these courses carry regular academic credit? Yes \_\_\_\_\_ No \_\_\_\_\_

4. Do you feel that twelve quarter hours is sufficient time for this course? Yes \_\_\_\_\_ No \_\_\_\_\_. Total quarter hours recommended \_\_\_\_\_.

5. When should the first course be offered?

Freshman Year, First \_\_\_\_\_ Second \_\_\_\_\_ or Third \_\_\_\_\_ Quarter.  
 Sophomore Year, First \_\_\_\_\_ Second \_\_\_\_\_ or Third \_\_\_\_\_ Quarter.

6. Please indicate which topics should be included in a Freshman clinical orientation course and the quarter the topic might be offered. If the course should be offered in the Sophomore year, please indicate when.

TOPIC	FRESH. YR.			SOPH. YR.		
	1	2	3	1	2	3
a. Identification of Instruments _____	1	2	3	1	2	3
b. Appointments _____	1	2	3	1	2	3
c. Records _____	1	2	3	1	2	3
d. Charting of Teeth _____	1	2	3	1	2	3
e. Personal Hygiene _____	1	2	3	1	2	3
f. Patient Behavior _____	1	2	3	1	2	3



g.	Proper Oral Hygiene _____	1	2	3	1	2	3
h.	Knowledge of Xray equipment _____	1	2	3	1	2	3
i.	Knowledge of Processing Radiographs _____	1	2	3	1	2	3
j.	Knowledge of Exposing Radiographs _____	1	2	3	1	2	3
k.	_____	1	2	3	1	2	3
l.	_____	1	2	3	1	2	3
m.	_____	1	2	3	1	2	3
n.	_____	1	2	3	1	2	3
o.	_____	1	2	3	1	2	3

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Signature and Date

APPROVAL SHEET

The thesis submitted by Dr. Richard Michael Stamm has been read and approved by the director of the thesis. Furthermore, the final copies have been examined by the director and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

May 2, 1968  
Date

John W. Wagnak  
Signature of adviser