

Marion W. McCrea

REPORT ON THE COLLEGE OF DENTISTRY  
SEOUL NATIONAL UNIVERSITY

This report is made on the basis of a three-week study of the College of Dentistry, Seoul National University, Seoul, Korea, by Marion W. McCrea, Associate Dean and Professor, School of Dentistry, University of Minnesota. It contains recommendations pertinent to the possible development of a contract with the University of Minnesota to provide aid to the College of Dentistry, Seoul National University. It also contains recommendations about PPA 89-53-436, PRO AG 89-53-436, and PIO 89-53-436-3-70269.

The recommendations are given first, and each of them is supported by appropriate descriptive material on the area concerned.

Included also are other pages in which certain related facets are discussed in order to assemble for convenient study a resume on the total picture of the College of Dentistry.

Although this report may appear to be critical in certain areas, it should be understood that the comments are intended to aid the College. They are in no way to be construed as fault-finding, when, as a matter of fact, the Faculty is to be commended for the work it is doing and for the vision it has for the future of the College.

Respectfully submitted,

Marion W. McCrea

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### Recommendations

Reference is made to PPA 89-53-436, PRO AG 89-53-436, and to PIO 89-53-436-3-70269.

1. The inspection of the facilities of the College of Dentistry, Seoul National University, reveals, so far as the dental anatomy and technical laboratory is concerned, a real need for rehabilitation in the form of providing necessary items of equipment as outlined in the above references. This facility, when rehabilitated as planned, will serve as the "hub" of clinical dentistry as it will be used for instruction in all of the technical phases of operative dentistry, dental anatomy, complete denture prosthodontics, partial denture prosthodontics, crown and bridge prosthodontics, and dental materials. The item of \$60,000 will be used almost in its entire amount for the proper equipping of this laboratory, as it will secure laboratory benches, electric motors, manikens, dentoforms, and gas burners. A few items of equipment are included which do not have a direct bearing on this laboratory. However, the items are for clinical areas in which there is currently a very great need for them. It is, therefore, recommended that the item of \$60,000 be expended for commodities to which mention is made in the above references as outlined.

2. It appears as though the inability to procure American teachers and advisors as outlined in the above references makes it necessary to deobligate the amount for contract services for this fiscal year. This deobligation is most unfortunate. In the first place the envisioned program and purposes of the obligation were not realistic, as they did not anticipate the difficulties to be encountered

in the securing of five persons of the quality desired, particularly for the periods of time indicated. Many of the likely persons not only have faculty positions but they also have private practices and other obligations that are deterrent to any such arrangement. Then, too, the consequent result has been a delay of developments for the educational program for the College of Dentistry. Perhaps, this delay is not too important, provided the funds are available in the future, but if funds are curtailed, a total year for which funds were provided, has been wasted. It should be added also that certain misapprehensions may have developed which could be a hindrance to any future educational programs in dentistry. It is, with regret, that it is recommended that the funds for contract services be deobligated for the fiscal year.

3. It is recommended that a contract be negotiated with the University of Minnesota in accordance with the proposals outlined under the item of "Proposed Minnesota Contract."

4. It is recommended that two of the four participants scheduled for the 1958-1959 academic year be assigned to the University of Minnesota, for reasons discussed under the item of "Proposed Minnesota Contract."

#### Proposed Minnesota Contract

An analysis of the educational pursuits of the Korean faculty members abroad indicates that they have received vast improvements in their technical skills, and that they are putting these improvements into practice in their teaching programs. But, their studies abroad

have stressed the technical aspects of dental education, with little or no attention being given to methods of teaching, methods of curriculum planning, methods of research, and methods whereby their knowledge can be made more readily available to the students. No attention has been given to the need for more extensive use of audio-visual aids.

These educational benefits are required currently, and will become more important if a pre-dental curriculum of some type were imposed, if research activities in dentistry are to be activated, if sectioning of classes were to be effected, and if the Table of Organization is increased as expected.

It may appear that the suggested additional training involves more of the College of Education than it does the College of Dentistry, and that is somewhat correct. However, the University of Minnesota is at a good advantage to provide these courses, as its own School of Dentistry is now undertaking a comparable program for its own teachers presently employed and those who probably will be employed in the future. It can be added that several other dental schools, seven to be exact, are also carrying on a comparable program under the auspices of funds from the Public Health Service. The basic problems are the same in the College of Dentistry, Seoul National University, as they are in American dental schools, but far more intense.

Thus, the proposed contract with the University of Minnesota encompasses training in educational fields as well as in those of the dental field, a provision which is particularly relevant as the program of the College of Dentistry is expanded. Details of this phase of the contract; i.e., courses to be included, are not necessary at this time, but if required can be provided.

It is the considered opinion of the reviewer that a more lasting and more effective teaching result will be accomplished if the Korean members are sent to the University of Minnesota for at least two years of education, rather than for one year as now provided under the ICA participant program. This opinion is based on several reasons, the more important of which are (1) time will be provided for the above-mentioned inclusion of suitable educational courses of significance to dental education, (2) time will be provided to give a thorough training rather than a thumb-nail sketch training in the particular dental area, (3) time will be provided to compensate for that lost in the acclimatization of the Korean faculty members, an amount which can be as much as three months in a year program, as the dental schools are closed in the summer time. At the University of Minnesota the program would obviate this loss of effective time, as during the first summer they would be enrolled in a special course of English for Koreans, and in the second summer they would be engaged in educational courses.

It is therefore recommended that the proposed contract with the University of Minnesota include provisions for training as outlined above and that the provisions for participant training be for no less than two years for each participant. Then, too, if the contract is negotiated, it can be integrated with the present ICA participant program for the first year, in line with the next recommendation.

Since the present documents and arrangements provide that four Korean faculty members are to be sent to the United States for the academic year 1958-1959 under the ICA participant program, it is recommended that two of the four be sent to the University of Minnesota

preferably in the areas of operative dentistry and dental materials, since in the opinion of the reviewer these areas can be most benefited at the University of Minnesota, particularly since the reviewer has been to the College. The other areas are of no less significance, but it is believed that more benefits can accrue in the two areas mentioned as no one has been to the United States in operative dentistry and the other person will be better equipped to use the rehabilitated facilities for which equipment is being provided. Another potential benefit can also accrue if a two-year participant program is developed with the University of Minnesota, as the two persons can be retained for the additional year for other educational pursuits in line with those recommended. It can be added that some of these educational courses will be provided during the 1958-1959 academic year. It is recommended further if the two can be sent to the University of Minnesota that they be sent prior to August 1, 1958, as that is the time at which the special course in English begins.

The existing documents for contract services for the College of Dentistry provide that American educators be sent to Korea for teaching and other purposes. This arrangement did not develop, nor is it believed that it can be developed in the future, as the educators are not available for such extended service. The program for participant training as outlined will, it is believed, provide a better training and one which will be more lasting, particularly if the two-year plan can be extended for several periods. It is, however, recommended that the proposed contract should provide for an American educator to come to Korea in due time after the first contingent of well-trained Koreans

has returned to assist them in implementing their programs, and offering such other assistance as possible. The other assistance could include plans for future participants, plans for equipment improvements, and plans for further rehabilitation of the physical plant. This educator need not be here for an extended period of time, nor need he be deprived of his obligations which deter him from coming for a longer period. Another factor is that it will be far less expensive to have short-term advisorships, which in the opinion of the reviewer will be more suited to the College of Dentistry. The funds saved can be used to provide more participant training on the two-year plan.

It is also recommended that the proposed contract include provisions whereby equipment and rehabilitation as indicated can be provided.

It is also recommended that plans be effected in the University of Minnesota contract for the procurement of adequate text books and other pertinent literature, particularly subscriptions to journals. Without these improvements in the library the students will be handicapped further and the much needed research cannot be done. There are facilities for research, and it is felt that some of the faculty members can carry on research problems, but without adequate literature, they cannot do much.

It is recommended further that the contract with the University of Minnesota be effected as of January 1, 1959, in order to integrate the above-mentioned proposals with the contract, and to provide the reviewer with sufficient time to make certain that the proposals can be handled effectively at the University of Minnesota. It is believed

that they can, but official approval must be received, and it must be made certain that all details can be accomplished.

This proposed contract anticipates a long-term assistance program which begins by aiding those areas of dental education in most need of aid. Obviously certain ultimate details are not included in this report, as they cannot be foreseen with complete assurance. It appears to be far better to begin the program as outlined for the three years, and to allow sufficient flexibility for contract extension after stock has been taken of the results accomplished and new vistas come into view. It is a slow process but one which will provide the best results.

#### Introduction

The College of Dentistry, Seoul National University, was founded in 1922 as the Kyung Sung Dental College with facilities in the Kyung Sung Medical College. Subsequently, in 1924, the School, while remaining a private proprietary school, was moved to its present downtown location in a then new building on the site of an old palace of the Lee Dynasty.

Until 1945, or for approximately 20 years, the School was operated by the Japanese, with a large share of Japanese students. The available statistics indicate that approximately 500 Korean dentists were from this School. Shortly after the Liberation, the late Dean Park and a group of Korean dentists, educated almost exclusively under the Japanese system of education, assumed the responsibility of the School. This group operated the institution as the Seoul Dental College, a

private institution, until 1946, when it became a part of Seoul National University, with the name being changed to the College of Dentistry, Seoul National University. During the period 1950 to 1953, the College operated at Pusan, on a somewhat interrupted basis. Approximately 500 Korean dentists were graduated from 1946 until 1956, inclusive.

These well-known facts are presented to point up several circumstances which are directly related to the educational program of the College, particularly since the College is attempting to utilize Western methods of education.

In the first place the physical plant, although extended since its original founding, is some 30 years old, a fact which in itself is not too detrimental, but one which is a handicap since the plant was constructed to accommodate smaller classes than are now being admitted. Then, too, the physical plant has not had the benefit of the usual repairs which should be made to compensate for normal wear and tear over a 30-year period. It can be added that the size of the student body is now twice the size of former years.

Most of the top-level faculty has been trained under Japanese methods, which seemingly emphasize the lecture rather than the laboratory method of teaching. At least the examination of the class schedules and the curriculum suggest strongly that the lectures are given far too frequently to be consistent with the Western system of education.

The total dentist population in Korea is approximately 1,000, of which number only about 700 are actually in private practice, the

others being engaged by the military services or in teaching. This total number of 1,000 dentists has, almost without exception, been trained either under Japanese methods or under methods employed by teachers who were trained by the Japanese. Then, too, approximately one-half of the total was trained in a school operated by private enterprise, which, if the comparable pattern of early dental education of the United States were followed, was for profit to the owners, rather than for educational purposes, except so far as they happened to be involved on happenstance.

The conditions of the Republic of Korea have been such in the past 10 years that a stable continuously developing program of dental education could not be established only until recently.

#### Predental Education

Students are admitted to the College of Dentistry without the advantage of prior collegiate education. This circumstance has prevailed since the beginning of the College, and, of necessity, it means that no member of the present faculty of the College has had arts and science education, save for that which a faculty member may have acquired voluntarily either prior to or subsequent to his dental education.

Another point of perhaps even greater significance is that the College attempts to squeeze into the freshman year of the four-year curriculum certain amounts (20 class hours per week for each of two semesters) of liberal arts and science subjects. The amount so squeezed in is, by American standards, equivalent to 40 semester hours

of credit, or at least one full year of study. This amount is given in addition to almost one full year, again by American standards, of basic medical science courses.

Thus a chain reaction of squeeze is set up and it prevails in the remaining years of the dental curriculum, except that it becomes progressively less severe from the second to the third to the fourth years. The end result of this situation is that time is taken from the upper years for actual clinical instruction, because non-clinical lectures must be included. Then, too, since clinical time is so precluded, it means that lectures are substituted for clinical and laboratory experience.

This obvious defect has been recognized by the Faculty, and steps have been instituted to alleviate the condition. The College has proposed, and it has been approved by the University and partially by the Korean government, a pre dental course. However, the proposed pre dental course appears by American standards to be far too heavy. The minimum pre dental requirement in the United States is 60 semester hours of credit, to include one year of English, one year of physics, one year of general chemistry, one year of zoology, and one-half year of organic chemistry, with all science courses to include laboratory instruction. The balance of the 60 hours is made up through electives. Some of the dental schools require more than the minimum, and approximately 50 per cent of the pre dental students have arts and science degrees at the time of entrance into dental school. It has not, however, been shown with conclusion that more pre dental study insures better dental students.

The proposed pre dental curriculum, which the reviewer understands can be changed even after approval, was developed by analyzing the present premedical curricula of several of the medical schools. It follows them very closely. In content, when compared with American standards, it contains the equivalent of 72 semester hours of credit in the freshman year and 74 in the second year -- a total amount sufficient for a bachelor's degree.

The reviewer appreciates the desire to have the dental students well grounded in liberal arts subjects, but also questions whether the crowded curriculum will produce the desired result, as a dilution factor will probably result. It appears to the reviewer that consideration should be given to providing a pre dental curriculum with fewer courses, thus making it possible for a better understanding of them.

It is entirely possible that the American standards are too low; however, it is believed that if the standards are to be increased they will be so increased by adding years to the pre dental curriculum rather than by compressing more material into the present two years.

The proposed pre dental curricula is shown at the top of the next page.

There is no doubt that all of the courses have value, and are desirable, but the load is too heavy to accomplish understanding, and it appears that more time should be devoted to the laboratory part of the science courses.

Subject	First Year		Second Year	
	Lect.	Lab.	Lect.	Lab.
Korean	2		2	
English	6		6	
German	4		2	
French			2	
Latin			2	
General Botany	2	4		
General Zoology				4
General Physics	2		2	2
General Chemistry	4	4		
Physical Chemistry			2	
Comparative Anatomy			2	
Embryology			2	
Genetics			2	
Mathematics	4		2	
Psychology	2			
Cultural History	2			
Outline of Philosophy	2			
Moral Philosophy	2			
Physical Training	1		1	
Economics			2	
Organic Chemistry			4	4
Total Hours per Week	33	8	33	10

It is the opinion of the reviewer that subsequent educational programs for the members of the faculty of the College of Dentistry should include efforts to point out just what the value of a pre dental education is, and to point out patterns of curriculum planning by which these objectives can be attained.

#### Admissions Requirements

Students are admitted currently without any formal arts and science education, a circumstance which prevailed in the United States some 40 years ago. The current admissions requirements are (1) completion of a three-year high school course or its equivalent, or

completion of a high school course abroad, and (2) passage of an appropriate examination of the University.

The present freshman class of somewhat over 100 students was selected from over 400 applicants, a ratio of acceptees to applicants not too different from that prevailing in the United States, at least so far as numbers are concerned. The quality of the students was not examined, but the reviewer is lead to believe that it is comparable to that in the United States, when the various standards are considered.

The educational implications of this lack of predental requirements have been pointed out under the heading of "Predental Education."

#### Enrollment and Graduate Statistics

Prior to 1946, a total of 521 Korean dentists graduated, and from 1946 to 1956, 539 have been graduated, with the average during the latter period of 35.5, with a range from 19 in 1951 to 58 in 1954. These data for the period 1946-1956 suggest that the average total enrollment for a four-year period has been 122, a total student body size which could be accommodated in the present facilities.

Since 1954, each class has had an enrollment of over 100 students, and the current enrollment for the four classes is over 500. It is expected that the enrollment will be maintained at about 450 students.

This situation means that the facilities are doubly crowded. It means also that ways and means must be explored to increase teaching effectiveness or to build a new dental building. Effectiveness in teaching will be aided greatly if the increased Table of Organization is approved. However, with its approval will come the added responsibility of teacher training, considerable of which will have to be

accomplished locally. It may be necessary to section the various classes in order to utilize faculty and space effectively. It appears that some person on the faculty, or better yet several persons, should be trained in an institution in the United States where class sectioning takes place. This statement is made because the reviewer is well aware of the difficulties that can ensue if experience of this type has not been had. It is not any easy matter to section classes for effective teaching, even though it may appear on the surface to be such.

#### Curriculum

Since there are no predental requirements at the present time, the dental curriculum contains certain courses that are actually prerequisite studies. In the United States these subjects are given in the predental years, of which the minimum is two for admission to a dental school.

The academic year in dentistry consists of two semesters of 15 weeks each, a total of 30 weeks, as compared with an academic year of from 32 to 36 weeks in the United States.

Although a few minor changes have been made in the curriculum as present in this report, it is essentially as given, and the variations do not change the intent of this report.

As discussed under the topic of "Predental Education" the freshman curriculum is too heavy in lecture hours, even though many of the courses are of that type of instruction. The main difficulty is that the year does not contain hours for instruction in dental subjects, thus causing them to be placed in subsequent years.

Freshman Program

<u>Course</u>	<u>Terms Given</u>	<u>Lecture</u>	<u>Laboratory</u>
Korean	1 and 2	2	
English	1 and 2	4	
German	1 and 2	2	
Philosophy	1 and 2	2	
History of Culture	1 and 2	2	
Biology	1 and 2	2	
Athletics	1 and 2	2	
History, Medical Science	1 and 2	2	
Chemistry	1 and 2	2	
Anatomy	1 and 2	4	3
Histology	1 and 2	3	3
Physiology	1 and 2	4	3
Biochemistry	1 and 2	3	
Biochemistry	2		3
Total Hours		43	46

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The only course taught by the faculty of the College of Dentistry in the freshman curriculum is the course in histology, and for a class of over 100 students there are only two teachers: one professor who also at this time serves as dean, and one paid assistant.

The other courses are given by other areas of the University, and so far as the basic medical sciences are concerned, the quality of teaching rests entirely with the Faculty of Medicine. It should be added at this time that since the various faculties of medicine in the United States are so occupied with their own students and their own researches, considerable thought is being given to having the various associated schools of dentistry train and employ their own teachers for these areas. In fact, many of the schools of dentistry have done so already. Another advantage of this separate faculty is that the basic science teachers, being already trained in dentistry in

addition to their basic science education, are more likely to engage in researches pertaining to the field of dentistry, than are teachers who are trained in medicine. They can also provide clinical applications to dentistry, whereas medical personnel cannot do so.

One obvious defect of the included preidental subjects is that physics, mathematics, zoology, and organic chemistry are not included. It is difficult for the reviewer to understand how students can comprehend many of the dental subjects without prior education in these fundamental areas. The proposed preidental curriculum attempts to correct this fault. However, the attempt appears to the reviewer to be all too inclusive, and because of this situation may fail to accomplish objectives of importance to their subsequent education in dentistry.

Sophomore Program

<u>Course</u>	<u>Terms Given</u>	<u>Lecture</u>	<u>Laboratory</u>	<u>College Giving</u>
Biochemistry	1	2		Medicine
Pharmacology	1 and 2	2	3	Medicine
Pathology	1 and 2	4	2	Medicine
Bacteriology	1 and 2	3	3	Medicine
Hygiene	1 and 2	3	3	Medicine
Dental Morphology	1 and 2	2	3	Dentistry
Oral Histology	1	2		Dentistry
Oral Embryology	1 and 2	2		Dentistry
Oral Pathology	2	3		Dentistry
Dental Materials	1 and 2	2		Dentistry
Surgery	1 and 2	2		Dentistry
Physical Diagnosis	1 and 2	2		Medicine
Oral Embryology	2		2	Dentistry
<b>Total Hours</b>		<u>29</u>	<u>16</u>	

It will be noted that considerable of the instruction each term is given by the faculty of the College of Medicine. It is noted further that considerable emphases are given to the lecture method, and in subjects where laboratory is decidedly indicated; e.g., dental materials, oral histology, and oral pathology.

The above-mentioned circumstance may be related to the lack of microscopes and suitable laboratory equipment and space for instruction in oral histology and oral pathology. Under the item of "Physical Facilities" suitable space is suggested, but it needs to be rehabilitated for use.

The equipment to be provided under the present plans for the rehabilitation of the Dental Anatomy and Technical Laboratory will make it possible for suitable laboratory instruction to be given in dental materials. Likewise, one of the participants for FY 1958 is to be trained in this area.

Here again, the question of having the faculty of the College of Medicine participate so strongly in the teaching of the dental students arises, particularly since that faculty has its own work to do, and under these circumstances the teaching of the dental students may be relegated to persons of lesser qualifications than are used to teach the medical students.

Junior Program

<u>Course</u>	<u>Terms Given</u>	<u>Lecture</u>	<u>Laboratory</u>
Oral Pathology	1	2	2
Oral Hygiene	1	1	
Clinical Pharmacology	1 and 2	1	
Oral Surgery	1 and 2	4	
Pedodontics	1 and 2	3	
Full Dentures	1 and 2	3	3
Crown and Bridge	1 and 2	3	3
Operative Dentistry	1 and 2	4	
Dental Fillings	1 and 2	2	3
Orthodontics	1 and 2	2	
Internal Medicine	1 and 2	2	
Otorhinology	1 and 2	2	
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Total Hours		29	11

Note 1. The courses in internal medicine and otorhinology are given by the medical faculty.

Note 2. In addition to the curriculum above, the junior students are scheduled for 8 hours of clinical operation during each term.

It will be noted here also that considerable stress is given to the lecture method of presentation, and in areas where technical ability for clinical use is of utmost importance. The improvement of the dental anatomy and technical laboratory will aid greatly in the correction of the physical facilities to change this situation. However, all of the teaching staff has not had training abroad to learn of the methods to be applied in the rehabilitated facility. For example, no one in the area of oral hygiene and the area of operative dentistry has been abroad.

Senior Program

<u>Course</u>	<u>Terms Given</u>	<u>Lecture</u>	<u>Clinic</u>
Clinical Prosthetics	1 and 2	1	
Operative Dentistry	1 and 2	1	
Clinical Oral Surgery	1 and 2	1	
Oral Diagnosis	1 and 2	1	
Narcotics	1 and 2	1	
Radiology	1 and 2	1	
Jurisprudence	1 and 2	1	
Pharmaceutics	1 and 2	1	
Dietetics	1 and 2	1	
Clinical Practice	1 and 2		23
Total Hours		9	23

To have the senior year include lectures without any laboratory work is common practice in the schools in the United States. However, this pattern presupposes that the students are trained adequately to perform clinical operations. Then, too, the schools in the United States almost without exception have at least one-half of the time of the junior year devoted to actual clinical practice, and in some schools the students are in clinical practice in the sophomore year.

The number of clinical hours for the total year is 690. This number appears to be adequate so far as the senior year is concerned. However, when one considers that there are only 66 operating spaces, and these are in the various departments, and when one considers that there are almost twice as many students as operating spaces, it must be concluded that the actual clinical experience for each student is reduced to half. Then, too, in any clinical procedure, there is a loss of time that is inherent, and it is estimated by American standards to be about 50 per cent. Thus, when one considers these factors, the

actual effective clinical experience is about 180 hours, and it is spread through all areas of clinical practice.

### The Faculty

The current staff consists of two professors, three associate professors, seven assistant professors, seven lecturers or instructors, eight paid assistants, and thirteen non-paid assistants. There are also some graduate students and a few dentists who come to the school on very short schedules to lecture in special subjects, such as orthodontics. This staff of 40 does not include the members of the faculty of medicine who teach the basic medical science courses, nor the staff members of the Liberal Arts Faculty who teach the liberal arts and science subjects contained in the freshman year of the dental curriculum. The staff of the College of Dentistry is concerned primarily with the teaching of clinical dentistry and the related technical laboratory courses. The course in histology and the course in oral pathology are also taught by the College of Dentistry.

The present Table of Organization calls for 14 persons: three professors; three associate professors; five assistant professors; two lecturers or instructors; and one assistant. Currently there are three vacancies: one professor, one lecturer, and one assistant.

For the most part the twelve persons above the rank of lecturer were trained at the Kyung Sung Dental College, a propriety dental institution, or at Tokyo Dental College. The lecturers were educated either during the period shortly after the Liberation or during the period of and shortly after the Russian invasion. In any event the

the pattern prevailing at the time the lecturers were educated was not totally consistent with sound educational principles.

The paid and non-paid assistants serve as residents and interns. This group is not stabilized from year to year so far as a permanent faculty is concerned.

The graduate students and the paid and non-paid assistants comprise the group from which it is hoped by the Faculty to recruit future teachers of dentistry.

The major faculty carries most of the teaching load in didactic and considerable of the load in clinical teaching. The minor faculty assists where needed.

The average age for the professors is 41 plus; associate professors 39; assistant professors, 39 plus; and lecturers, 32 plus. The assistants of both categories average about 29 years of age.

In addition to the dental degree, several of the faculty members have obtained additional degrees; two have received their Ph.D. degree from Seoul National University; three have received their M.S. degree from Seoul National University; and one has obtained the D.D.S. degree from Indiana University as a part of his study abroad.

It is anticipated that the Table of Organization will be increased in the not too distant future, and if that occurs the teaching load per teacher will be relieved. Currently there are some 450 students, which means a teaching load for the members of the major faculty of 32 plus students for each person. This load is far too heavy for the clinical and the pertinent laboratory instruction required. In most American schools the load in these phases of instruction is calculated to be

about 10 to 12 students per teacher, although some variation exists in the various courses.

### Faculty Summary

1. The current teaching load per faculty member is too high.
2. This situation, it is believed, is probably a factor in the overloading of lecture time and the shortage of time spent for laboratory procedures where close attention must be given to the technical phases being taught. The same serious close observation also prevails in the clinical parts of the curriculum, and probably even more so.
3. This situation, until corrected, and even after correction, implies that more efficient methods of teaching are indicated, thus a need for courses in education as it applies to dental education.
4. This circumstance also suggests strongly the need to use more audio-visual aids, the need to place more of the learning responsibility on the student, and the need for more text books so that the student does not learn to depend on lectures for information.

### Faculty Study Abroad

One associate professor, head of the department of crown and bridge prosthodontics, studied two and one-half years at Indiana University at his own expense.

One associate professor, head of the oral pathology area, will complete at his own expense one year in August 1958 at the University of Alabama.

One associate professor, who serves as the head of the area of complete denture prosthodontics and director of academic administration, studied two years under AKF at the University of Alabama.

One assistant professor, head of the department of pedodontics, studied one year under AKF at the University of Washington.

One assistant professor, second in charge of the department of oral surgery, has just returned after 18 months study at the University of Munster (Germany) under a scholarship by that University.

#### Summary

The College of Dentistry instructs in 10 areas of dentistry, and only five have had faculty members who have studied abroad. These are for the most parts major faculty members, thus there is no depth in the faculty, a situation which places almost all of the responsibility on the few members of the major faculty.

#### Faculty-Course Distribution

The course pattern can be subdivided into six areas, and this is the pattern which prevails. In most of the American dental schools the pattern encompasses no less than 10 areas, each with its own faculty. This pattern is exclusive of the courses in the pre-dental curriculum and those taught by medical faculty. In other words, the American pattern with which comparison is made is as approximate to the Korean pattern as is possible.

Basic Science. This includes histology and oral histology. It has only one professor and one paid assistant for faculty, neither of whom have been educated abroad.

Oral Pathology. This subject has only one associate professor, who has had one year of training at the University of Alabama.

Pedodontics. This area has one assistant professor, one paid assistant and one non-paid assistant. The assistant professor has had one year at the University of Washington.

Surgery and Oral Surgery. This area includes narcotics, x-ray, surgery, and oral surgery. The faculty consists of one professor, two assistant professors, one lecturer, two paid assistants, and one non-paid assistant. Only one person, the second in charge, has been abroad for study. He has had two years at the University of Munster.

Operative Dentistry. This area includes dental fillings, oral hygiene, oral diagnosis, periodontics, and dental anatomy. The faculty consists of three assistant professors, two lecturers, three non-paid assistants, and seven paid assistants. No one has been abroad in any of these areas.

Prosthetics. This area includes complete denture prosthodontics, crown and bridge prosthodontics, partial denture prosthodontics, and dental materials. Two people have been abroad: one for two years at the University of Alabama, and one for two and one-half years at Indiana University. The total area has two associate professors, one assistant professor, four lecturers, one paid assistant, and four non-paid assistants.

In American dental schools, the usual individual areas are operative dentistry, partial denture prosthodontics, crown and bridge prosthodontics, complete denture prosthodontics, oral diagnosis, oral pathology, oral histology, radiology, oral surgery, pedodontics, periodontics, endodontics, orthodontics, and each has its separate staff, both for the technical and the clinical phases, although some

overlap may exist. In addition to the above courses or departments, dental anatomy and dental materials are included as departments with considerable frequency.

It is apparent that the Korean departmentalization is very much overlapped, and that the faculty is grossly deficient in numbers. Furthermore, many of the included areas have no faculty members who have received training abroad. It is anticipated in the Minnesota contract that suitable programs for training in these areas will be accomplished. For a more specific pattern of training see the section on "Overview of Dental Education" included in this report.

#### Library Facilities

The library is housed on the third floor of the dental building in a room that is far too small, since it contains the stacks, book racks, reading tables, and all other materials incident to a library. Considerable of the publications are in Japanese, and many of them are out-dated. Five hundred text books were provided in 1953 by UNKRA, and 250 were provided by OEC in 1956. Students are permitted to use the books in the library and if they are in sufficient quantity, the students are allowed to take them out for home use. However, an examination of the available books reveals that few are in numbers sufficient to permit much home use by the students.

There is a distinct shortage of periodicals of all types, a handicap which concerns the students and the faculty members. Likewise, this shortage also handicaps research efforts of the faculty members.

It should be added that most of the faculty members have prepared materials which are used as text books, and which the students buy, if

they so desire. Most of them purchase these pseudo-text books. The faculty members are to be commended for this effort, since without these manuals the students would be without any reading material. These manuals do have one obvious deficiency -- few, if any pictures -- and it is difficult for the reviewer to understand how a lecturer is able to stress certain points when adequate and well chosen photographs are not used.

The amount of space in the library for reading is not adequate. There is an adjacent so-called warehouse room which could be used to increase the size of the library, if the partition were removed, and the area rehabilitated for library use.

Any subsequent agreements must include the procurement of selected text books for student use, of subscriptions to current journals to enhance the continuing education of the faculty for their teaching and research responsibilities, and of other library literature not only for faculty but also for student use.

Any subsequent agreement must also include provisions for the enlargement of the library facilities and their rehabilitation to make them effective in use by the students and the faculty.

#### Physical Facilities

Although the present building was not constructed at the same time in its entirety, it is of the same type of architecture, and seemingly in sound condition. In fact to the eyes of a non-dentist who may visit the building, it appears to be excellent, but this conclusion cannot be supported, so far as the dental educational

program is concerned. An accurate opinion can be gained only by a person who has been in dental education, one who can, so to speak, open the cabinet drawers and realize the inadequacies.

The first floor is occupied by administrative and faculty offices. However, there are two rooms of considerable size that are not used at this time by the College of Dentistry. One is used by UNESCO through an agreement between that organization and the late Dean Park. The other is a former students' room, and is in bad need of general repair. It is also a rather large room and should be used. The present faculty offices are too crowded with personnel. It is the opinion of the reviewer that these two large rooms should be used by the College, but in order to do so they will have to be rehabilitated. These rooms could be used for necessary faculty offices or for student rooms. Since the enrollment includes a considerable number of female students (about 40 at this time) a small room has been set aside for their use. It is completely inadequate in size and contains no furnishings whatsoever. The toilet on the first floor should be rehabilitated for sanitary reasons.

The second floor is used mainly for clinical dentistry, with an oral surgery clinic of eight chairs; a pedodontic clinic of eight chairs; a prosthetics clinic of thirteen chairs, which is used for all phases of prosthetic dentistry; a diagnostic clinic of four chairs; a radiographic clinic of one chair; an operative dentistry clinic of twenty chairs; and a periodontic clinic of thirteen chairs. There are a total of 66 student working spaces in the clinical areas, for somewhat more than 110 senior clinical students. This floor also houses

a technical laboratory for clinical dentistry, a toilet, an operating room, and one small admissions and record office. The chairs and the incident dental units, operating lights and cabinets, are, with few exceptions, really new, having been secured in 1954 and 1955 with part of the \$150,000 supplied by the CRIK program. The balance of the above mentioned amount was used mainly to procure incident instruments, instrument sterilizers, handpieces, and materials for clinical use, and to procure lathes and minor items of expendable nature. A total of nearly 450 line items were provided. It is the opinion of the reviewer that the non-expendable items have suffered no more than the usual wear and tear under student use.

The second floor, as does the first floor, needs pointing up of the plaster and general painting. Here again on the second floor the toilet facilities are in need of general overhaul for sanitary reasons.

The clinical technical laboratory on the second floor seems to be adequate in size for the current patient load, but should the load increase, as it is hoped, this facility will be too crowded. So far as clinical instruments and general expendable supplies are concerned they are provided for the most part by the College, a procedure, which in itself is expensive, but seemingly necessary at the present time. However, some of the students do purchase some of their own instruments at least in part. It appears to the reviewer that as the economic conditions better and as the availability of items becomes more eased, the student should be required to assume some of the responsibility for the securing of instruments on a progressional increase basis, particularly those items which he can use in his practice after graduation.

The third floor contains an auditorium of considerable size, a lecture room to accommodate 100-plus students, a small inadequate locker room, two faculty offices, a dark room, a small warehouse, a toilet, two faculty research rooms, and a library. The small warehouse and the library were considered under the heading "Library Facilities."

The toilet facilities on this floor are in bad need of repair for sanitary reasons, and the entire floor needs to have the plaster pointed up and walls and ceilings painted.

The floor also contains a small room which was used formerly as a chemistry laboratory. It is not used at the present time, as it needs new laboratory equipment, and benches. In the reviewer's opinion it could be used for a microscopic laboratory and thus serve the areas of histology and oral pathology. It would also make an ideal research laboratory, or it could be used for the much-needed faculty offices. Under any circumstance in view of the crowded conditions it should not be permitted to remain unused, and provision should be made to put it into productive educational use.

The fourth floor contains two lecture rooms, each large enough to seat a class of 100-plus; a warehouse; four small faculty laboratories; one student laboratory, now used for histology and anatomy; and one general technical laboratory, which is recommended for rehabilitation in this report through documents already prepared. All of the rooms on this floor need to have the plaster pointed up and the walls and ceilings painted.

The general laboratory is used for technical purposes for all technical phases of clinical dentistry, and recommendation pertaining thereto is made as recommendation 1 in this report.

Summary

1. The entire interior of the building needs to have the walls and ceilings pointed up and painted.
2. The toilet facilities need rehabilitation for sanitary reasons.
3. The unused room space needs to be financed into productive educational use for research, library extension, faculty rooms, and student laboratories.
4. A study should be made in conjunction with the officials of the College of Dentistry to determine whether all space is being used to the utmost.
5. A study should be made in anticipation of an increased Table of Organization for the College to determine the feasibility of having sectioned classes, thus a more constant use of all class space.

Research

The value of research is indeed appreciated by the reviewer and by the faculty members, but they are faced with difficulties in doing research. In the first place, the faculty is not large, and most of the time is spent in routine teaching duties. To be sure, there are times when they could do research, but the facilities are not adequate, nor is the equipment. Then, too, many of the members of the faculty have not been trained in research methods, a training which is absolutely necessary, and one which can be provided in study abroad if time is allowed through the implementation of the "no less than two years of study" suggested in this report.

Research is essential to effective and stimulating teaching, but it cannot be expected that all faculty members are apt to research. Certain of them will be outstanding clinical teachers but not research inclined. Others will make excellent technical teachers, and others who may not be too proficient in clinical and laboratory teaching will be good investigators. It will take time to ascertain the paths to be followed by the faculty members, and it will take time to integrate properly the teaching, clinical and research programs. This facet of dental education can be augmented greatly through adequate assistance by American advisors on short-term duty, once the faculty has been trained and avenues of dental education are established.

#### Overview of Dental Education

The present organizational pattern of the dental curriculum of the College of Dentistry shows six areas or departments. This arrangement, probably necessitated by lack of faculty, is decidedly misleading when departmental coverage of courses is concerned. It is, therefore, important to clarify this pattern in order to make certain that the plans for a teacher-training program encompass subject matter coverage rather than departmental coverage.

The pages on "Faculty-Course Distribution" indicate the areas included in each department, but it is believed that a chart by courses as known in American dentistry and as used currently in the College will show to advantage the faculty training already accomplished and that needed in a long-term project as suggested in this report for consideration for a contract with the University of Minnesota.

Column I of the chart shows the departments as listed currently by the College of Dentistry, Seoul National University. Column II shows the present number of faculty members per department. Column III shows the course coverage included in each department as known by American dentistry and as included currently in the College. Column IV shows the number of man-years of study abroad already accomplished by the faculty of the College. Column V shows the number of man-years of study abroad for which plans are under way in the participant program of the ICA for FY 1958.

The proposed man-years needed to accomplish a sound educational system at the College of Dentistry, Seoul National University, is discussed in semi-specific terms. This is no intent to hedge, but at the present time a more definite plan cannot be established for many reasons; e.g., the possible increase in the Table of Organization which would make more manpower available to be sent abroad, the possible inclusion of the pre-dental curriculum, the pattern of future acquisition of supplies and equipment, the fact that no contract has been made with the University of Minnesota for this area of teacher training, and the fact that any plans will have to be approved by the University. Ideally it would be excellent to have every Korean faculty member sent abroad for no less than two years of study for each member. This is not realistic. Likewise it is not realistic to jump off on a program when so many factors could ensue which would add confusion and, at least in part, destroy the purposes of the program. It is the considered opinion of the reviewer that the first step is to settle all of the indecisions that now exist with respect to <sup>who</sup>~~whom~~ is

to handle the dental educational program and who is to be responsible for the procurement of equipment and supplies. After these matters are settled, including the possibility of extending the time of study for the Korean dentists who are to be sent abroad in FY 1958, and after a nucleus of Korean faculty members has returned, a step-by-step effective and economic program can be developed.

<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>
Basic Dental Science	3	General Histology		
		Oral Histology		
		Oral Pathology	1	
Pedodontics	3	Pedodontics	1	
Operative Dentistry	15	Operative Dentistry		1
		Oral Hygiene		
		Periodontics		1*
		Oral Diagnosis		
		Public Health		
		Endodontics		
		Dental Anatomy		
Oral Surgery	7	Radiology		
		Oral Surgery	2	1
		Anesthesiology		
		Pharmacology		
Prosthodontics	12	Dental Materials		1**
		Full Dentures	2	
		Partial Dentures	2 1/2	
		Crown and Bridge		

\*This person is to receive training in oral hygiene, periodontics, oral diagnosis and public health dentistry, all of which make far too heavy a load for a period of 12 months. Any one of the areas should have a person and perhaps more trained very well to assume all of the incident responsibilities.

\*\*This person is to receive training in several phases of prosthodontics, but with emphasis on partial dentures and dental materials. Here again the program expected for 12 months is far too ambitious.

NOTE: It has been recommended elsewhere in this report that the person to be trained in operative dentistry and the person for dental materials be sent to the University of Minnesota, with the hope that a contract with the University will be negotiated and an arrangement made possible for them to continue their studies abroad for another year.

The proposed "study abroad" schedule submitted by the College of Dentistry is as follows:

<u>Department</u>	<u>N u m b e r o f S t a f f</u>			
	<u>Lecturer</u>	<u>Man-Years</u>	<u>Assistant</u>	<u>Man-Years</u>
Basic Dental Science	1	1	4	8
Operative Dentistry	3	3	7	14
Oral Surgery	2	2	4	8
Prosthetic Dentistry	4	4	4	8
Pedodontics	-	-	5	10
Totals	10	10	24	48

Although the reviewer does not agree entirely with the proposed schedule, several comments in its behalf are pertinent. In the first place, the term "Lecturer" includes professors, associate professors, assistant professors, and lecturers. The term "Assistant" includes the presently-named paid assistants and the non-paid assistants. It also recognizes the fact that the area of operative dentistry, which is now too inclusive in scope and course coverage, needs distinct attention. This same recognition is given to oral surgery. So far as prosthetic dentistry is concerned, it is an opinion of the reviewer that since this area has had considerable emphasis already, it can be reduced and still be effective in teaching. The proposed schedule also recognizes that the area has had some benefit in the form of study abroad.

In contrast to the proposed schedule the reviewer is convinced that all Korean faculty members should have two years of study abroad, rather than one as suggested, and that a two-year pattern can be developed without robbing the faculty of too many teachers at one time.

The reviewer is in complete accord with the idea of the proposal that the younger faculty members be sent abroad.

It is also felt that the present department of operative dentistry, department of prosthetic dentistry, and the department of oral surgery should be redepartmentalized into small areas, thus establishing additional departments in the College of Dentistry. However, this plan cannot be effected until sufficient faculty members have been trained abroad to assume the leadership in the newly-created areas of dental education. In the breakdown of operative dentistry, the additional departments should be a department of periodontics, a department of endodontics, and a department of oral diagnosis to include the area of radiology which is now included in oral surgery. This repatterning has several advantages: (1) the text books are prepared on the lines as indicated; (2) each area is of its own right a specialized area in which research and teaching are sufficient to keep a staff well occupied; and (3) to have them all included as they are presently not in accordance with good teaching principles. The teacher-training program plans should include the education abroad of at least one person in each of the three areas, and for two years for each person.

So far as prosthetic dentistry is concerned, there are four distinct areas which should be departmentalized: full denture prosthodontics, partial denture prosthodontics, crown and bridge prosthodontics,

and dental materials. Some of the four areas have had faculty members abroad already, but in addition to them, at least one more for each area should be trained, and again for no less than two years each.

Pedodontics is a coming area in dentistry in Korea. It certainly needs additional persons trained -- at least two for two years each. In the first place the younger people are becoming more educated, and with education comes the desire for oral care. Then, too, their children will be felt to need better dental care. Added to these facts is the one that returning soldiers have been provided with some dental care and an awareness of proper oral care has been instilled. They, too, as economic conditions improve, will require dental care not only for themselves but also for their children. If an educational program of oral care were instituted in the various school programs, particularly in the earlier years, an awareness of proper oral health could be developed. It would be directed at the root of subsequent oral misfortunes, as they would be corrected in their incipiency, thus averting unmanageable conditions in later years.

This program in children's dentistry could well be a part of an over-all public health program, but it would require that faculty be trained not only in pedodontics but also in public health dentistry, its applicable methods, and the pertinent importances of such studies. This person would be able upon return to teach all students about the importance of public health dentistry.

Also as a part of a program of public health dentistry, it should be mentioned that there are no applicable figures on the incidence of dental caries, the dentist-population ratio so far as an effective ratio

is concerned, nor are there statistics on potential dental care programs. A trained person should make such a study, and it is believed that no person in Korean dentistry is so trained at this time.

It is variously estimated that over 60 per cent of the population of Korea over the age of 30 has some form of periodontal involvement. This point alone stresses the need for adequate and sound training in this field in the dental school. It is the opinion of the observer that this area is the weakest in the entire school, yet, it is a very important one.

Operative dentistry, oral surgery, and full dentures will still be for some time the "bread and butter" income of the practitioner of dentistry. However, if children's dentistry and periodontics were developed, the above-mentioned areas would be reduced. They would never be obviated, but the oral health conditions of the population would be improved greatly. At the moment the areas of periodontics and children's dentistry are not receiving the attention they should, not because the College is not aware of this situation, but there are not enough persons adequately trained to do the job properly.

Orthodontics even in the United States is thought by many to be for the elite, but nonetheless it is important. Currently this area is given by lectures. It is believed that more attention should be given to this field of dentistry.

Another factor should also be considered in a teacher-training program -- postgraduate and refresher courses for the practitioner. There are certain knacks to conducting successful educational programs of these types, but through them the practitioner can be kept up-to-date and can be introduced to the importances of preventive dentistry.