ACADEMY OF AMERICAN GOLD FOIL OPERATORS

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Message From the President

It is a pleasure and honor to bring greetings to the membership of the American Academy of Gold Foil Operators and to have served the Academy over the years.

Our organization has fostered not only good fellowship but also an enthusiasm for quality dental health care. In recent years there has developed a philosophy of dental care that stresses speed and efficiency to provide more dentistry to more people. As a result, some de-emphasis has occurred in the teaching of direct filling golds in our schools and in some areas the Academy has been accused of being too restricted in their field of interest.

Those who would suggest this are not truly as knowledgeable of the goals and aspirations of this academy as they should be.

We can boast of a membership made up of the finest dentists in the world and there is not a single member who limits his practice to gold foil. On the contrary, we have leaders in the field of ceramics, occlusion, pedodontics, research, material science, etc. Our interests cover the full spectrum of quality dental service and the common bond of an interest in direct filling golds serves as the catalyst to bring us together year-after-year to interact and participate in a healthy exchange of thought and ideas.

Many other organizations have been established and most have commendable goals and aspirations. They have interesting programs and still they are not able to attract the membership to attend the meetings on a year after year basis.

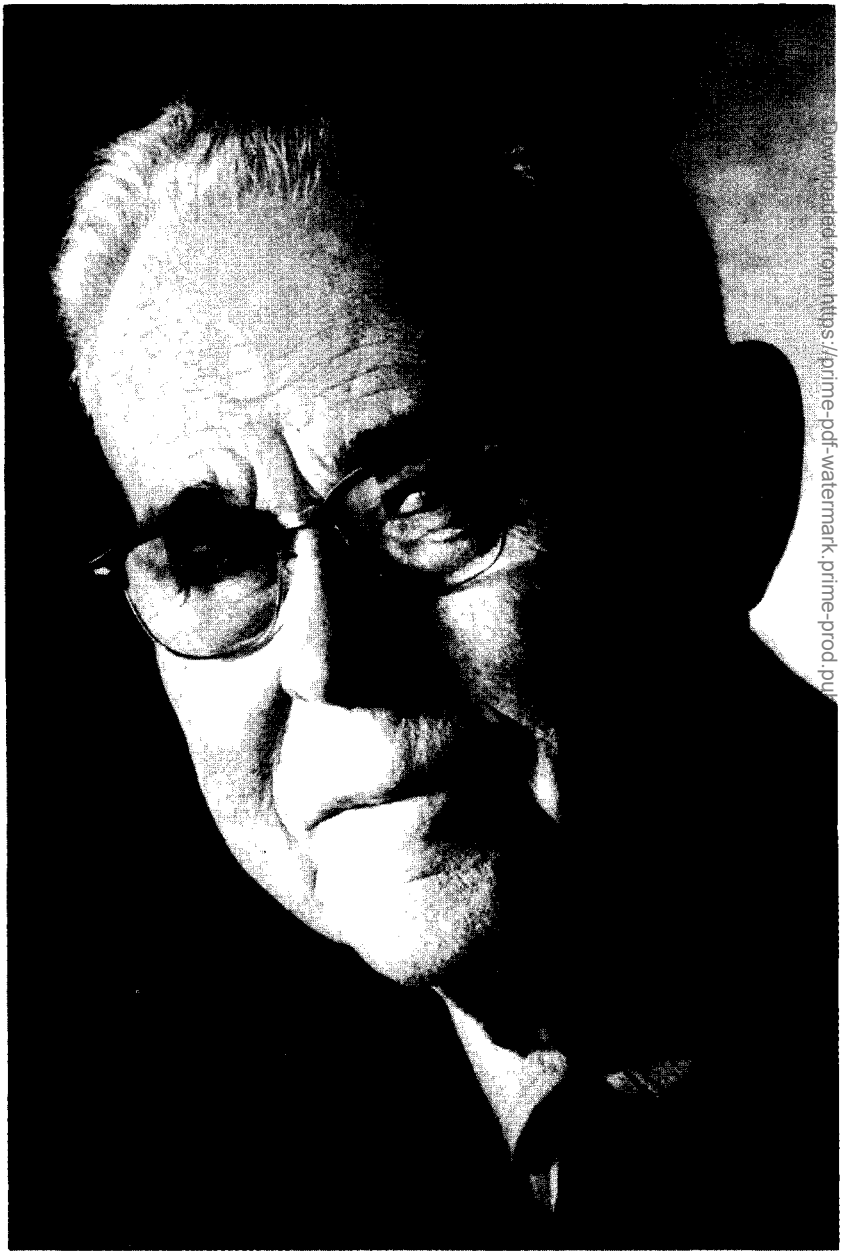
As a working Academy, we have visited dental schools and military installations throughout the United States in an effort to support the teaching efforts of the schools and promote quality. The friendships which have developed

as a result of this activity are far stronger than one would expect from a mere organization. It is more of a fraternal bond cemented by shared interests. I am certain that each of us who have maintained an active interest in supporting the American Academy of Gold Foil Operators has received far more than he has given.

To this end I would urge those of you who have been members in name only to activate your interest and share your talents with us. There is much to be done in the area of general dentistry today and with the whole-hearted support of all of our members, we can affect immeasurable good.

If you have any suggestions or recommendations to make in behalf of the Academy, please let your Executive Council know. Be willing to participate in committee activities and make yourself known to the Program Chairman if you would be interested in participating as a clinician or essayist at the annual or interim meetings.

I thank you for the opportunity of working as President of the Academy and look forward to serving you and the profession in helping to maintain quality and to continuously strive for excellence.



GEORGE M. HOLLENBACK

Dedication

Dr. George M. Hollenback of Southern California, internationally prominent dentist and dental researcher, died November 30, 1973, at a Los Angeles area convalescent hospital. He was 87.

Dr. Hollenback was born on a small farm in Coldwater, Kansas, September 27, 1886. When George was 17, a toothache forced him to walk five miles to a physician who gave him something for pain and suggested he visit a traveling dentist on his next visit to the area. The experience prompted him to study dentistry. Since he did not have a high school education, he studied on his own in preparation for the college entrance examinations. His entire formal education consisted of 42 months in a country school. He graduated in 1908 from the School of Dentistry at the University of Missouri at Kansas City (formerly University of Kansas City). He practiced dentistry in Montana for several years and then came to California in 1919, where he practiced until 1955, spanning a total of 48 years. During that period, he took time off to attend Northwestern University where he received his Master of Science degree in 1945. In 1964, he was awarded the Doctor of Science degree from the University of the Pacific at San Francisco.

Dr. Hollenback authored more than 100 published scientific articles covering the fields of cast gold restorations, waxes, compacted gold, investments, impression materials, amalgam, various restorative techniques and procedures, and the composite resin systems. These articles were the direct result of his own personal scientific research with virtually all of the data accumulated from testing apparatus of his own design. Dental instruments and equipment invented by him are in use throughout the world.

Dr. Hollenback held the following academic appointments:

Professor Emeritus, School of Dentistry, University of Kansas City
Associate Professor, Operative Dentistry, Loyola University, Chicago
Professor of Dentistry, School of Dentistry, Loma Linda University

This issue of the Journal is dedicated to Dr. George M. Hollenback – clinician, scientist, teacher, and member of this Academy. His influence and memory has been established in each of us. *Editor*

Professor of Dental Materials, College of the Pacific, San Francisco

Professor of Dental Materials, University of Southern California

Dr. Hollenback was the recipient of many honors including the Pierre Fauchard Gold Medal, the Souder Award, and the William J. Gies Award.

A staunch supporter of dental education and research, Dr. Hollenback provided the financial backing for several promising young dental educators and made substantial gifts to several dental schools.

Dr. Hollenback's life will serve as a hallmark for those who succeed him to emulate, in some small way, the ability and character of this great man.

Earl W. Collard
Donald A. Welk

R. B. Wolcott
Editor

Times For Change

In recent years, there has been a growing clamor to give "new life" to the dental curricula by streamlining courses, reducing redundancies of course material, initiating three-year programs and increasing student quotas, modifying grading systems, and curtailing didactic, laboratory and clinic experiences in restorative procedures. There is strong evidence for need to improve upon teaching competency and effectiveness, but there is even greater evidence that such change cannot be accomplished at the expense of quality.

At the last meeting of the Academy, two prominent clincians and educators presented disturbing evidence that dental graduates were not being properly tained. It is widely known that State Boards have been targets of abuse from many sectors of this country. Criticisms for many years have centered upon gold foil as a clinical procedure to judge clinical competency. One state, conceding to demands, substituted the cast gold procedures for the gold foil test. This concession did nothing to alleviate the problem. It did, however, illustrate dramatically that significant numbers of dental graduates were unable to demonstrate competence, regardless of procedure. When the State Board examinations were judged by an *independent* committee, only 8% of the examinations were evaluated as revealing skills adequate to meet criteria of acceptability. The *State Board* itself, somewhat less severe, is forced by legislative pressures to accept over 50% of the examinees. Amalgam procedures were performed with similarly disturbing results. It is assumed that each State Board applicant endeavors to demonstrate his best judgment and skill, using the more than adequate time limits. If, under these conditions, he is incapable of meeting basic, established performance criteria, one must assume that he is either inadequately trained, or that he chooses to ignore fundamental criteria of acceptability.

It seems unlikely that a new dental graduate with so much at stake in his career would intentionally disregard basic principles and competencies that have been proven scientifically sound for years. Now would this newly graduated professional, with his "eyes in the sky", choose deliberately to abandon his integrity, and "self-destruct" by poor performance. Therefore,

it would seem that our dental schools, and the teachers, must assume responsibility for these catastrophic deficiencies. We owe it to our students to prepare them in such a way that Boards do not have to be a massive "clearing house" for our graduates. The Boards cannot be blamed for dental education inadequacies. The Academies of Gold Foil Operators and Operative Dentistry, with leadership from their concerned memberships, can continue to help and to lead the way in combatting forces that would deny opportunities for dental students to be better equipped and more competent upon graduation.

These Academies with their dedicated memberships have been influential in many professional endeavors since their foundings. Now, they must continue to do even more to meet the challenges given them by those who showed such professional courage and concern at our last annual meeting. This writer urges that officers, committees, and members continue to demonstrate a renewed dedication.

Editor

Clifford H. Miller

Troublesome Trends in Dentistry

There are many changes taking place in the profession of dentistry today and many of these are as a direct result of external pressures being applied. Some are good since they represent new advancements in the field of technology and teaching methodology. We currently have the most sophisticated types of instrumentation and equipment available and materials that are refined to the point where their accuracy and dependability exceed the skill of the most gifted practitioner.

In the area of dental education we have progressed from the part-time teacher/practitioner to the career-oriented full-time dental educator. As a result, teaching has undergone fantastic change in recent years. We now think of behavioral objectives, task analysis, and motivational psychology. Programmed instruction, self paced learning modes, and computer assisted instruction are in common use in the dental schools throughout the country. In the area of operative dentistry, educators are cooperating on a national scale to reach agreement on technical procedures and conserve time through the elimination of duplication of effort. A serious attempt is being made to accomplish this by Project ACORDE.

With all of these things going for us we should be producing the most knowledgeable and skilled dentists in the history of the profession.

There should be more pride in the profession both collectively and individually than ever before. I am sad to say that my experience and observations do not support this and it is the purpose of this paper to try and explain some of the reasons for the problems which the dental profession is currently facing.

Dr. Miller *is Associate Dean and Clinic Coordinator at Northwestern University School of Dentistry, where he earned his dental degree in 1957. He has held various offices in the American Academy of Gold Foil Operators, as well as in the numerous national and international organizations with which he is affiliated. He is a Board member for examination of dentists for Civil Service appointments; Counselor for the Chicago Dental Assistants Association; Consultant, Operative Section to the National Board of Dental Examiners.*

**Presented before Academy of Operative Dentistry - October, 1973 - Houston, Texas*

Perhaps one of the greatest problems which confront the dental profession today is a developing dissension between the ranks of the private practitioner, specialist, dental educator, and State Board examiner. Much of this disharmony has resulted from a conflict of interests that is brought about by governmental intervention in both academic and practice-oriented activities. Although it is currently popular to cast aspersions on anything which the government has dealings with, that is not my intention today. The first step in resolving a problem is to accept responsibility for it and understand its reason for being.

The government has become imbued with the philosophy that dentistry is a right and not a privilege and has made attempts, in a variety of directions, to provide ways of overcoming the presumed dental manpower shortage. The word "presumed" is used to indicate that this determination of a shortage has been based on statistical surveys that relate only to numbers and completely disregard the human element. There is no question that there are countless thousands of individuals who have never seen a dentist and millions of carious teeth throughout the country. Many of these are located in areas that cannot attract a dentist, however, and many of the individuals involved are not yet ready to seek the services of the dental profession. Many people have expressed the view that there is a difference between need and want, and this is certainly true. There is a problem relating to the desirability of a practice location, for those who have entered the profession of dentistry not only wish to serve humanity, but also want to have the independence to locate and raise their family in an area of their choice.

The statistics do not disclose these facts, however, and the first efforts of the government were in the direction of financial support for building new dental schools and enlarging and remodeling existing schools. The new schools didn't fare too badly in this regard since they could establish a class size and build a faculty to adequately teach the material. For the existing schools, however, this created somewhat more of a problem. In order to compete for available funds, certain promises had to be made to the granting agency that some resolution to the dental manpower shortage could be expected. This generally took the form of increased enrollment with those schools that increased their class size the most getting the money. In many institutions the faculty and staff were not correspondingly increased since the building dollars were for non-recurring expenditures and faculty and staff salaries could not be included. This obviously created problems in maintaining a quality educational program and generally had the greatest affect on clinical instruction, since this requires a more personalized educational approach. Students have the tendency to become disinterested and faculty become demoralized when the faculty/student ratio is such that effective teaching is hampered.

The next step in trying to improve the dental manpower shortage on the part of the government was by encouraging dental schools in the development of programs to train auxiliaries in expanded functions. With a generalized shortage of available funds the Universities once again found themselves in the position of competing for Federal support. This time new and innovative programs were the key issue in funding and a variety of programs developed

which proved that you could train anyone to do specific tasks if given enough time and money. If measured in terms of the learning experience, these programs were and are successful but since virtually every state has restrictions against auxiliaries performing expanded functions, it is questionable how helpful it has been in reducing the dentist's work load.

According to a recent news release, the 1974 dental hygiene graduate will be trained to:

- Perform a thorough preliminary oral inspection on each patient, including charting and intraoral photographic documentation.
- Take preliminary impressions and pour study casts for orthodontic or periodontal treatment.
- Place and finish restorations after the dentist has completed the cavity preparation.
- Administer local anesthetics, as well as nitrous-oxide analgesia.
- Perform a variety of periodontal procedures, including scaling and polishing technics, root planing, curretage, gingivectomy, and gingivoplasty.

This is but one example of the many programs that are currently in existence in dental schools throughout the country and serves to explain some of the reasons for a growing dissension between the schools and some private practitioners. To some, the EDDA and TEAM programs represent not an aid but a threat to their profession. There are those who feel that if the dental hygienist or assistant performed this amount of service, there would soon be no need for the dentist himself. Since the performance of these expanded duties for auxiliaries is still not legal, there are many who feel that they could be utilized in an unscrupulous and unethical fashion for great financial gain. In any event, the success of this program in fulfilling the avowed purpose for its establishment, namely providing more quality dental service to more patients is doomed to failure also. Even if the state legislature enacts the laws to allow auxiliaries to perform expanded functions, there is no provision that the people involved will elect to practice where the need is greatest. It is much more likely to see them locate in those desirable living and practice areas where the financial reimbursement for their services will be the most rewarding.

A third example of a troublesome trend in dentistry which confronts the University is also attributable to government intervention. Again I wish to stress that this is not a condemnation of the government because they were acting in good faith to resolve a problem. It is obvious to everyone that the highest percentage of dental disease occurs in the rural and minority areas. Our dental graduates were not electing to practice in Appalachia or the ghettos of the major cities, so the needs of these individuals were not being met. In an effort to resolve this problem Federal funds were made available to recruit and subsidize minority students and students from specifically designated areas. Now that these students are enrolled and are totally dependent upon some form of subsidy for their continuance in school, the Federal support is being reduced. This places an overwhelming burden on the schools to help find funding for these students. Again, the motives were honorable, but the desired result will not be achieved. Experience shows that if you provide people with the opportunity to lift themselves out of

an impoverished area, they will never beat a path to return but will rather take their new found place in society with all of the benefits which their new status permits.

Not only the government but industry and business as well have been attempting to make dental care a right for every human being. Since the cost for dental care was listed as a major deterent to individuals seeking the service of a dentist, the third-party payment programs were introduced. Welfare agencies, unions, insurance companies, the airlines, and many others entered into one form or another of third party payment, and the numbers are growing daily. In 1963 insurance companies protected 335,000 people against the costs of general and comprehensive dental service according to the Health Insurance Institute. In 1966 this figure had grown to 1.7 million and today more than 8 million people are protected. In 1963 there were 66 Groups that had dental care written into their health insurance policies. Today there are over 9,000 Groups in the United States.

Mr. Eric Bishop, assistant executive director for dental health, American Dental Association made the following statement at the 24th Annual Management Conference in June. "About 6 months from now, the nation will have been divided by the Secretary of Health, Education and Welfare into PSRO regions, areas in which Professional Standards Review Organizations will operate. Initially, PSRO's will minimally contend with hospital and in-patient services. It will review the necessity, appropriateness and quality of services being rendered under the aegis of Social Security Programs, including Medicare and Medicaid. Some dental services, particularly oral surgery, will be immediately involved. It takes no special gifts of prophecy to know that a far broader range of dental services will be included a bit further down the road. Indeed, the present law says that this will happen by 1976 but it is important to note, it can begin with the approval of the Secretary far earlier than that."

There are currently 15 million people with some form of dental insurance and many practitioners feel there are equally as many varieties of forms to be filled out. Unfortunately, there is neither a standardized form nor a unified coverage. With the third-party payment programs have come peer review and controlled pricing for service rendered. The imposition of these regulations on a profession with such a short time to adjust to the change has created a strong feeling of unrest. When a person is pushed, he is going to react and the harder he is pushed, the more violent the reaction. Thus we are currently hearing a great deal said about Unionization for Health Professionals.

According to an ADA Information Bulletin, there has been substantial growth in the number of dental and medical unions in the past two years. In New York, the first dentists union was formed in 1972 and just recently leaders of 12 local or regional unions met in St. Louis to form a federation of unions called the American Federation of Physicians and Dentists and boasting a membership of 25,000.

We must appreciate the fact that Dentists are an independent lot and like to have the opportunity of being responsible for making decisions relative to treatment and fees charged for service rendered. It is, therefore, easy

to see why there is a growing unrest among the profession. At times such as this when problems are being mutually faced by many people it is wise to resolve them by a united effort. Unions per se, however, do not appear to be the best course of action. In the first instance the formation of a union among health professionals for the purpose of any type of collective bargaining is illegal. No such organization can control the activities of its members or bind them to contractural agreements. Since the profession cannot form a union for the prupose of bargaining with the government or insurance companies on fees or other contractural arrangements, it would be foolish to become affiliated with such a move. The president-elect of the American Medical Association made the following comments after attending a recent meeting in Canada:

> I asked the Canadians what we in the United States could learn from their experiences in trying to stem the tide of governmental intrusion. Chief among their unanimous recommendations was the avoidance of any overt activity which could be equated with a strike against the sick or the poor. They said that regardless of the care taken in making public announcements, the media promptly termed any protest action as a strike. This tended to alienate public opinion and stimulated the government to prompt retaliatory intervention. This was the lesson of Saskatchewan and more dramtically, of Quebec.

The problems which I have mentioned are indeed real and serious and they do in fact demand a resolution. They may well be overshadowing a problem which is far more serious, however, in its affect on the profession of dentistry. It is distinctly possible that we have become so caught up in competing for Federal dollars and worrying about third-party payments that we have allowed some of our emphasis on quality to diminish and allowed our image to become somewhat tarnished. This problem is one which can be resolved but only with the united effort of all members of the profession. An organization such as this Academy of Operative Dentistry represents a strong force and if it lives up to its avowed ideals and goals, can effect immeasurable good.

We need not look beyond our own discipline — Operative Dentistry — to being restoring the pride that we must have in our profession.

David Grainger, in his keynote Address to this Academy in February, 1972, made the following comment:

> Operative Dentistry created dentistry and lost itself in the process. We are faced with an Operative Dentistry that has grown tired, tired from the loss of excitement, from the loss of prestige, from the loss of dignity, and even the loss of pride. This is no indictment against those who toiled within its structure, year after year, to further its aims and goals. Thank God for those men, for without them we would not have the opportunity today to meet the challenge of building something once again. The specialties are strong, they have forgotten their humble beginnings and now flex muscles in both the public and private sectors to the benefit of all that is dentistry.

These strong words represent an urgent plea to this Academy and all members of the dental profession who are concerned about maintaining high standards of quality in the profession.

The specialties have grown strong in recent years and they have had a powerful influence on the profession. They are organized and have loud voices which are heard throughout the country. They are heard not only by private practitioners, but also educators and administrators and their subjects are dramatic and exciting. Dental schools have responded to the voices of the Specialties with more time allocated in the curriculum and more specialized requirements in these areas of clinical endeavor. This, of course, to a degree, is progress but in some instances I am afraid that the progress had been at the expense of time allocated to learning the basic principles involved in quality restorative procedures. It is difficult to teach these fundamental principles in areas other than Operative Dentistry. Our voices have not been strong enough in recent years to maintain our fair share of the time allocation in the development of a dental profession.

You will recall that not too many years ago this problem did not exist in this country because we had giants in the field of Operative Dentistry protecting our vested interest in maintaining quality and excellence in the profession. We must all be deeply indebted to the leadership provided by Ingraham, True, Ferrier, Stibbs, Markley, Smith, Stebner, Jeffrey, Dawson, Romnes and others too numerous to mention. Most of these men are still carrying the banner for quality Operative Dentistry but they cannot do it alone nor can they continue forever. There must be new, strong, vocal leaders to replace them who have as much pride in the profession and desire for excellence as these men have. It is only through this type of leadership that the spirit for quality operative procedures can be rekindled in the minds of our teachers, students, and practitioners.

It is a shocking thing to learn that gold foil has been eliminated from the required clinical experience list in many schools and the excuse given that it is too difficult a procedure to teach. In an era of the greatest technical skill and scientific knowledge, how can this be possible? At a time when we have sophisticated knowledge in teaching methodology and career oriented dental educators, it is inconceivable. There is no one today who can deny that when properly placed in selected situations there is no restorative material currently available that is comparable to a direct filling gold. How, then, can any school which accepts the responsibility for the total dental education of its students deny them the opportunity of learning how to utilize one of the best restorative materials available in dentistry? I am afraid that the problem does not rest with the students as some claim because students today are brighter and more motivated to learn than ever before. The problem rests with our faculty who have gotten lazy and apathetic to their responsibilities. Those schools which are not teaching direct filled gold restorations or porcelain inlays do not have faculty that are competent in these areas themselves and they must learn and we must teach them.

In traveling around the country visiting many different schools many of us have commented from time to time that we were concerned about the apparent apathy among the clinical students. Let me assure you that students do not come to school with apathy for the profession. They arrive with excitement and eagerness to embark on a new and challenging career. No one could be more motivated than a dental student the first day he enters a

technic course and picks up a handpiece. By practice and example, we must all take advantage of this student's eagerness to learn and maintain his motivation. Only in this way can apathy be eliminated and pride in the profession be established.

Dr. Alvin Morris, Vice-President for Health Sciences at the University of Kentudky stated in an address to the American College of Dentists that: "one of the obligations of dental educators is to continually identify for the student the frontier of professional thought and activity. The dental schools represent a key source of leadership with a strong responsibility to influence the future course of the profession."

Dr. Morris went on to say that perhaps the image of dentistry was somewhat tarnished because admission requirements to dental school were not very demanding and as such, it would be difficult for the student, and I quote, "knowing himself to be a little more than an average undergraduate with a limited education to be convinced that his chosen profession is a truly scholarly one." These remarks were made in 1965 and I can assure you that we cannot use this as an excuse for whatever we feel our image is, today!

For the Freshman Class of 1973, Northwestern University had 3,226 applications for a class of 105. The cumulative grade point average of this class was 3.28 and 69 of 105 had already received one degree and an additional 31 had in excess of three years college experience. Twenty-three states and four foreign countries are represented in this class. I am certain that similar admission statistics could be provided for many of the dental schools and thus we have superb material to work with. If the end product is not what we would hope for, the blame must rest with us.

The quality of our educational programs will ultimately be measured by the standard of dental service that is rendered by our private practitioners. An indication of the effectiveness of our efforts, however, can be found in the results of the State Board examinations. While there has been much consternation levied at the State Board examinations, they still maintain a certain check and balance on the educational programs and also on the profession at large.

Most dental examiners are concerned about the problems pursuant to taking a State Board examination in order to practice dentistry and have made real progress in recent years to reduce the complexity of the problem. Regional boards have been established in the Northeast and Central areas of the country and plans are currently underway to form a regional testing service in the Northwest. This not only facilitates the physical problems of taking a Board examination, but also serves to standardize the performance criteria that are expected by the examiners.

The examiners are working diligently to improve the conditions surrounding Board examinations and also minimize the penalty of failing a Board examination. Last year at this meeting Dr. William Collins, Secretary of the Northeast Regional Board addressed the members of the Operative Academy and suggested that students be required to pass either the State or Regional Board before they graduate from dental school. He refers to this as a "predoctoral examination." The benefit of such a program quite obviously would

be that if a student fails he can be given special instruction in his area of weakness prior to graduation and then by a cooperative arrangement with the faculty and Board examiners, allowed to graduate and enter practice without the present delays. This appears to be an excellent recommendation and Dr. Collins should be supported in his efforts to make it a reality.

There are some who would advocate the complete elimination of examinations for licensure, but few of the examiners themselves would agree. They are not looking to perpetuate the examinations because of the fantastic salary they are paid, since this doesn't begin to cover their expenses. They feel obliged to continue examinations primarily because they are concerned about the quality of work which they observe during these Boards. Dr. Clement Alpert, a member of the Northeast Regional Board of Dental Examiners, in a presentation at the Conference of Dental Examiners and Dental Educators in Chicago in 1972, stated the following: "Experience over the past fourteen years, has led me to the conclusion that the majority of average board applicants exhibit poor clinical skills. We rarely see an operator who has attained the degree of skill characterized or identified as a highly skilled or master clinician. I have often commented that Board examiners have the depressing duty, in the main, of separating the poorest from among the poor. The thrill of observing superior delivery skills unfortunately comes to us all too infrequently. We are well aware of the fact that the applicants have had a fine training in the basic sciences and that they are well schooled in philosophies and technics of delivery procedures. They have made acceptable records in their National Board examinations and seem to respond intelligently when interrogated in the clinics in oral exchanges. But the final phase of their training, the utilization of all the knowledge in the delivery of actual treatment to the patient, seems to be lacking and not up to acceptable standards."

These are critical comments and perhaps somewhat exaggerated to emphasize the point. The point, however, is undeniably there and we must accept the criticism of our teaching programs in a constructive fashion and take steps to correct the problems which exist. Faculties and practitioners alike must be constantly encouraged to strive for perfection and aspire to emulate the greatest tradition of this fine profession.

In conclusion then, it is essential that the direction and leadership in the dental profession emanate from the dental schools and the profession itself and not as a result of political or financial pressures that are brought to bear. This does not mean to imply that the dental health needs of the population or the support from Federal resources should be ignored. On the contrary, the dental profession must provide the innovative ideas to meet the ever increasing demands which the population is making for dental care and help in directing the government in the most appropriate ways of allocating funds to meet these challenges.

The talent is available to solve the many problems which confront dentistry today, but it must be catalyzed by rekindling the pride and enthusiasm for dentistry as a profession and directing its future from a unified effort emanating from within the profession. I AM PROUD THAT I AM A DENTIST AND I SINCERELY HOPE ALL OF YOU ARE ALSO!

Roy A. Fetterman, D.D.S., F.A.C.D.

Educational Trends Through The Eyes of a Review Course Director

I wish that I could only see
The teeth that once belonged to me.
The teeth with which I'd chew a roast
Or grind to dust a piece of toast.
Teeth which by their crookedness alone
Would tell the world they were my own.
False teeth are made by fools like me and you
But only Gold can make them chew.
Author Unkown

Too often this is the belated lament of too many patients. Upon whose shoulders should the blame for the loss of teeth be placed? The patient's, the dentists', the dental schools' or those who determine the teaching policies of the schools? As in all controversies, neither the answer nor the solution is simple.

Contrary to the belief of the public, the medical and dental professions have constantly worked on ways of decreasing the incident of dental diseases. Thirty-seven years ago when I graduated from dental school, Michael Walsh and Herman Becks were advocating Prevention through Nutrition — their contention being that with proper dietary habits in conjunction with proper tooth brushing habits, something like 83% of all tooth decay could be prevented. The graduates of that day were sent forth to crusade for the proper handling of the tooth brush twice a day and thorough scaling and polishing of the teeth at least twice a year. They also stressed the necessity of an annual full mouth set of X-rays. All of this information has been passed on to the

Dr. Fetterman *is in private practice in South Pasadena, California, and has also been a lecturer in Operative Dentistry in the UCLA Extension Program and the USC Dental School for many years. He has been a Director of the Jones Gold Foil Study Club for a number of years and also a member of the AAGFO. Throughout the years he has demonstrated and lectured before the Academy many times.*

This paper was presented to the American Academy of Gold Foil Operators October 26, 1974 at the University of Texas Dental Branch, Houston, Texas

patients over the years but has been received with relatively cool enthusiasm and little application, as you are all aware.

Today, the teaching emphasis on prevention is centered on plaque control but Medicine and Dentistry are *still* hammering away on the "good diet" bit. Edward O. Shanner[1] referred to plaque control as the "Hot Pursuit of Plaque" and suggests the addition of blood, saliva and urine tests to the good diet and clean mouth program for control of dental diseases. I quote from Dr. Shanner's article: "The technic of developing disease-prone profiles uses methods long known to dentistry, and makes prevention a science instead of an exercise in dexterity for improved oral hygiene."

Since the public chooses not to follow the teachings of the professor, then we must place much of the blame for a great deal of the dental problems where it belongs — upon their shoulders.

In recent years, there has been what I feel is undue emphasis on the medical aspect of dentistry being taught with de-emphasis on the mechanical aspects of the profession. We must ever be aware of the medical side of dentistry and continue to attempt to educate the patient on his part of the program for prevention; however, until the patient is convinced of the importance of his role or until an effortless shotgun preventative or cure-all treatment is developed for control of dental problems, we have only one alternative. That alternative is restorative dentistry, for we know that "preventative dentistry" can be practiced in its fullest sense only when it includes excellent "restorative dentistry."

We must therefore assure our students of the best possible training in all forms of restorative procedures, including compacted gold fillings. The first step in prevention through restorative dentistry is Operative Dentistry and this is most certainly a highly mechanical skill.

Let me quote you the conclusion of a survey entitled "Prevalence of Defective Dental Restorations" made some time ago by D. L. Moore and J. L. Stewart.[2] "More than one-third of the operative effort was consumed in replacing defective restorations."

From a very fine and very recent article by Clement C. Alpert[3] entitled, "A Dental Examiner's View of Dental Education," I quote: "Experience, over the past fourteen years, has led me to the conclusion that the majority of average board applicants exhibit poor clinical skills."

So it seems that a goodly portion of the blame for the dental ills of the public must be borne by our profession.

The fact of low quality dental services rendered the public is no secret. State and national journals, as well as the general news media, keep us informed of the shabby work done by so many of our profession. Unfortunately there are in dentistry, just as there are in all other lines of endeavor, too many who deliberately or through ignorance or just lack of ability deliver inferior services or merchandise. As a result, complaints from the public have forced the government to retaliate with a demand that relicensure be dependent upon a dentist's "keeping up." This means that each man must spend a given number of hours per year taking courses relevant to the dental field in order to qualify for the annual renewal of his license. One state

is now considering a minimum requirement of 100 hours of "continuing education" per year.

G. V. Black[4] was aware of this need for continuing education many years ago when he said, "The professional man has no right to be other than a continuous student."

A forced postgraduate program for all is bound to help some, but what about the man in the rural areas and in states where there are no dental schools? What a costly thing, time and money-wise, for him to be forced at regular intervals to travel great distances for this training. You know it will not be easy to get clinicians to travel to "Podunck Center" to teach three men. And what about the man who deliberately renders poor dental services? One of my students once remarked, "How do you give a man a conscience?"

I am 100% in favor of voluntary study clubs and I only wish I knew how to instill in every graduate the desire to keep dentally alert and aware of new trends whether or not he approves of or wishes to make use of them. The storehouse of dental knowledge can be likened to a good cook's pantry. You know all the ingredients therein. Some may be used rarely but from this supply of knowledge you take a pinch of this, a smidgen of that, a dash of the other, and season to satisfaction. Thus, you achieve the desired and completed dental restoration.

"We all know that the acquisition of additional knowledge and skill becomes much more difficult postgraduation," says Dr. Alpert.[3] Thus, it is imperative that dental students acquire the knowledge and skills needed before graduation.

A report of the University of Pennsylvania states: "A means to improve clinical skills is urgently needed in dental medicine." I say Amen to that.

It has long been my firm belief that the main reason for the occurrence of so much poor operative dentistry is that too many practitioners lack the knowledge of and the ability to apply the Fundamentals of Cavity Preparation as set down by G. V. Black. My opinion is based upon my observations and experiences over 37 years as a general practitioner, as a Gold Foil Club member and director for the same number of years, as a part-time instructor of operative dentistry for U.S.C. Dental School, and as an instructor of the same subject for the U.C. Extension Division for the past 14 years.

This "refresher course", as it is known, is offered twice a year for out-of-state men who wish to prepare for the California State Board. In addition to the course in which I teach, there is also a course offered for foreign-educated dentists wishing to practice in California. Currently, there are about 1000 foreign candidates trying to qualify for that precious piece of paper which will enable them to practice in California.

My classes consist of men who have failed the California Board from one to six or more times, as well as men who wish to take the Arizona or Nevada or Alaskan Boards. There is hardly a class without at least one or two recent graduates, and of the eighteen men in one Fall class, twelve were previous June graduates. There have been retired service men, men disenchanted with the northeastern section of the United States, and a smattering of foreigners from Egypt, Trinidad, Romania, Sweden, and England. My oldest student

was 68 years old. So, as you see, I have really had a cross-section of dental educations to observe.

I start each of my classes in the same manner. Each student is asked to prepare for a Class Two Alloy in an upper right second bicuspid on a typodont. I label each preparation with an identifying mark, place it in an envelope until the end of the course when the student makes another preparation. The before and after preparations are compared and only in this way can the student really see whether or not he has made any improvement in the use of the basic fundamentals. The following photos are some of the preparations that students have made — the befores and afters. (See Fig 1).

The first photos are of the class of 1961 — 20.

The second photos are of the class of 1967 — 18 and 12 of this class were 1967 graduates.

You have now seen samples of what the State Board Examiners see. It is obvious that these students lacked the knowledge and/or the ability to apply the basic fundamentals of cavity preparation, yet they were all allowed to graduate from a dental school and all passed a State Board Examination, somewhere. It seems rather obvious that some instructors and examiners lack the same knowledge as do these students, and as a result are unable to properly instruct them or to recognize the poor quality work done by

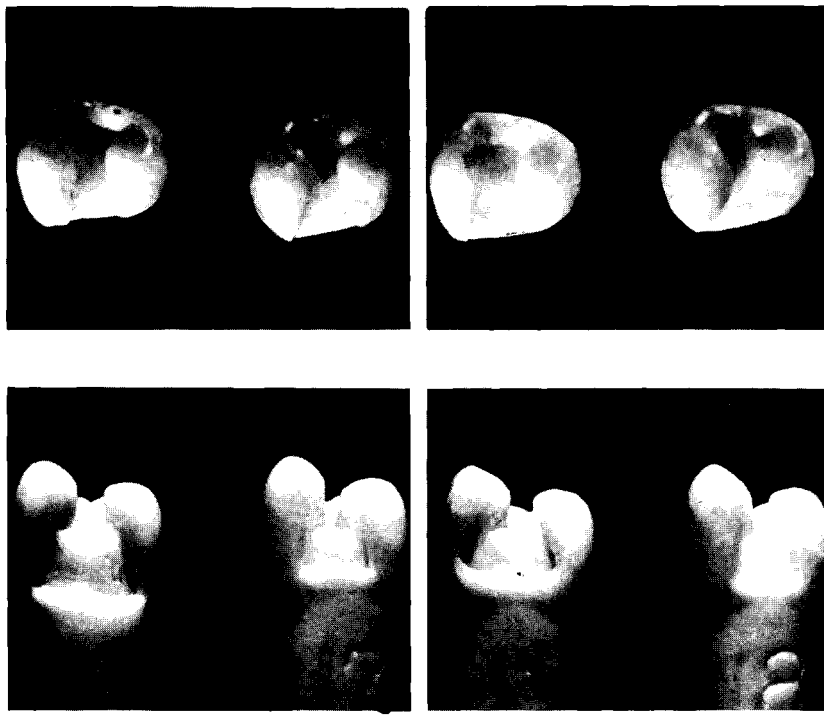


Figure 1. *Representative performances by two graduated dentists. Work at left of each photograph was performed at the beginning of course; work at right of each photograph was performed at the end of course.*

them. Perhaps, as Dr. Alpert says, they just separated the "poorest from the poor."[3]

I have been listening to complaints from students for 14 years and they vary little. They want instructors who can explain and demonstrate the corrections of their mistakes but instead, they say, when asked to demonstrate a correction the instructor will walk away, making it seem obvious that he can do no better than the student. They would like to have more of the time spent by instructors in the coffee lounge talking among themselves spent on a personal one-to-one relationship with the student. Few have had any praise for the closed circuit T.V., Video, or Audio instruction experiences. Many tell me they were exposed to basic fundamentals but were never "made" to produce them.

Now, that is a switch isn't it? Students complaining of the lack of discipline.

My students tell me they learn more from me in 18 days than they have learned in four years of dental school. This is, of course, flattering but not entirely true. When I get them they are truly motivated to learn and have a foundation upon which to place this concentrated review.

I correct their finger rest position, which I find is seldom taught per se. I teach them to sharpen their hand instruments. Would you believe I have had men who, in four years of dental school, had never sharpened their instruments? And, of course, I teach the fundamental principles of Operative Dentistry. I am a hard task master. When I say a seat should be flat, I mean "flat" and will accept nothing else. When I say that a wall is to be straight, I mean "straight" and will accept nothing less.

The adage that "Practice makes perfect" is not a 100% truth but its philosophy of application will certainly help to keep one on the road to that elusive point of perfection. I firmly believe that the only way a student can become proficient in any dental procedure is to repeat the procedure over and over under a competent and qualified instructor.

Coach Wooden of UCLA, when asked how he made his winning basketball teams, replied, "By spending 65% of every practice session on fundamentals."

The government demands, and rightly so, quality dentistry for its "public." There is no reason why this profession of ours cannot produce quality dentistry, but we must have dedicated and qualified operative instructors who are taught to teach operative. A dental degree does not qualify a man to be a teacher. Recent graduates who are teaching are doubtless sincere but they lack the clinical experience and knowledge necessary to diagnose and correct the problems of the learning students. Rather like the blind leading the blind.

I advocate that members of faculties of the operative departments belong to a study club, meeting on a regular basis with attendance being compulsory. All procedures being taught should be reviewed by the head of the department and all members agree on an acceptable standard. Each instructor should be required to produce on a patient an assigned procedure.

Perhaps instead of the government pouring money into "frills" and new buildings, scholarships, etc., it might well do better by providing money for salaries for teachers. Perhaps more attractive salaries would keep the part-time instructor teaching longer.

The need for more clinical experiences for the student has been mentioned, but one of the problems of the schools today is the lack of patients in the clinics. In fact, they are almost impossible to find. State Board candidates in California are paying patients $20 to $100, plus all expenses, to sit for them. This is the result of prepaid dental care plans.

Some schools, USC and UCLA for example, have been going into the field of mobile clinics for some time. Some schools bus deprived children to the clinic. USC did this when my daughter was there taking her Dental Hygiene training.

I heartily recommend that any of you who have not yet read Dr. Alpert's very fine article, to which I have referred several times, please do so. You will be gratified to learn of the new and very logical concepts in teaching which are beginning to take place. The University of Kentucky College of Dentistry now requires that all courses be reviewed periodically, and that all faculty submit to some form of evaluation.

Many of our profession regret the increasing national trend to de-emphasize the teaching to the compacted gold filling. Those of you who know me well know that I am a staunch believer of the use of gold foil where it is indicated. I have placed eight clearly visible Class III foils in the anterior teeth of my wife's mouth and I doubt that those of you who have known her, yea these many years, have noticed them. The oldest one of these fillings has been in place for 35 years. Would the composites have still been there?

A June 1973 poll[5] of 57 schools taken by the Operative Department of the College of Dental Medicine of the Medical University of South Carolina reveals that 44 schools still require gold foils as a discipline in *preclinical* technique, and 39 schools require a direct gold restoration in student clinical practice, although no mention is made as to the number required.

Of the 35 additional comments concerning cohesive gold restorations in dental practice of dental education, 20 were in favor of teaching the technique, considering it a valuable teaching instrument as well as the best restorative agent for certain classes of cavities.

Eleven felt the teaching of direct gold restorations was stupid, a waste of time only to please some state boards and felt that composites were far superior.

Four were aware of the value of foils but felt their teaching was now impractical because of the shortage of instructors who could teach the technique. A lost art?

I commend the University of South Carolina for its interest and effort in making this survey. Too bad the survey neglects to report how much foil work is required in the clinical years. From what my students tell me, there is apparently little required in any of the schools other than those of the West Coast.

A trend which I deplore is the present philosophy of "full coverage." In discussing cases with recent graduates, I find that where I would use a three-quarter crown, they would use full coverage — that is, porcelain fused to gold. I am often accused of not believing in full coverage and this is not true. I believe full coverage should be used when indicated but not when a three-quarter crown will do the job.

The argument in favor of full coverage seems to be that it is easier and faster and with this I agree, but I believe the conservation of tooth structure is more important than ease or speed.

The list of postgraduate courses available for men to take is now unbelievable. Clinics and lectures at district, state, and national meetings range from the "Use of Auxiliary Personnel" to "Full Mouth Reconstruction;" from "Acupuncture" to "Computerized Bookkeeping;" from "Endodontics to Space Maintaining." How often do you hear of a course on a review of the Basic Fundamentals of Cavity Preparation? One would think that no one needs to review or improve his basic skills, yet I have just given you facts which indicate that the average student exhibits poor clinical skills upon graduation. As a general practitioner, this graduate will spend about 90% of his time doing restorative dentistry, most of that time being spent in doing operative dentistry. I say there is need for postgraduate courses in Operative Dentistry.

There are gold foil and alloy table clinics using visual aids — usually models and slides generally showing the steps in filling the prepared cavity, but nothing on the proper utilization of the basic fundamentals in the preparation of that cavity. There are also many courses and clinics on inlay castings and full mouth reconstruction. Here again, with the visual aids plus some student participation. In most cases, pre-prepared dies are given the student to work with on the assumption that he already knows how to properly prepare for the restoration. Nothing to insure that the student understands and can apply the principles of the preparations.

With the exception of this organization and foil clubs, clinical chair demonstrations at conventions are a thing of the past. I can remember with much pleasure and pride when, as a senior, I was one of the several of Ernie Jones' students invited to give a chair clinic on the preparation and filling of a Class II alloy at a district society meeting. In those days, the dental supply houses set up chairs and equipment in the hotels where the conventions were being held. From San Diego to Portland, we could observe men making use of the fundamentals and anyone could see what our young were learning about the services they were soon to render the public. I would like to see a return to making more use of our students for clinical demonstrations. I believe they would be happy to know that we are interested in what they are learning.

Today we are seeing the results of a new trend in education which began not too long after World War II and was called "Progressive Education." This form of education still exists in many areas, probably because many of our instructors were educated during that period. Perhaps some of you have had the experience of taking time from your office to lecture to students only to have them wander in and out with coffee and donuts, seemingly not really interested in what you have to say. Roll is often not taken and no rule states that a student has to attend lectures. This is not unique just to dental schools.

I do not see how "progress" can be made with inattention. Our students need to be taught discipline. They should have to attend all classes or step aside and let someone else who wants to learn have their spot. Clinical requirements should be high enough to require a student to work as long as the

clinic is open or quit cluttering up the place and let someone else who wants to learn dentistry have the space.

Recently, an educator was a guest speaker at my Rotary Club and he spoke of the necessity of constantly developing new program and courses to "Challenge" the students, whatever that means.

Rather, it would seem to me more important to develop teachers who believe in discipline and have enthusiasm for the subjects they teach, thus making the mastery of their courses a challenge. A thorough knowledge of a product or subject plus enthusiastic salesmanship sells merchandise or service — be it dentistry, education or peanuts.

Some time during the year 1897, a traveling dentist in Utah placed two compacted gold fillings in anterior teeth for one Rosa Childs, age 18 years. Seventy years later, Rosa Childs Fetterman, my mother, passed away. The teeth and the foils they held for so long were still in place.

If this traveling practitioner of so long ago, with only a year of schooling or perhaps two at the most, could master the use of compacted gold, why should we ask any less of the student of today with his very superior pre-dental education and twice as much dental education?

The following comment is one of those from the gold foil survey referred to earlier.[5] "The time needed to develop the necessary clinical skills and the asset of good judgment simply rules out the waste of the clinical hours required to develop a competent skill in the use of the 'least' useful of dental material."

If our dental schools cannot in four years indoctrinate students with the "asset of good judgment" in the use of foil, then they do not have time to indoctrinate them with this asset in the use of other Operative procedures. Most certainly, this asset will be lacking in the training of the "lesser trained personnel" and school dental therapists with only one or two years of training. As you know, the government computers say it is these people of lesser training who will help us catch up with the unfilled cavities in the children of our nation.

In conclusion, let us be mindful that we, the members of this profession of dentistry, have vital obligations not only to our patients but to the young men and women who wish to join our ranks in this very important health service.

I think that Dr. Charles M. Stebner's philosophy is excellent and I quote from his "Oath:" "The regimen I shall adopt shall be for the benefit of my patients according to my greater ability and judgment to protect and preserve their natural dentition."

And again from Dr. Stebner's "Oath:" "I will regard all young dentists as my own sons, and I will offer them my knowledge and technics. I will teach by every means I know those valued lessons that were passed on to me by my predecessors."

If it is challenge the young need, we do not have to waste time dreaming up new things. Let us just teach them to appreciate the value of mastering the use of compacted gold fillings. Can you show me anything in dentistry that is more challenging than this procedure?

Let us teach with renewed enthusiasm the mastery of the fundamental principles of cavity preparation.

Let us emphasize the importance of conservation of tooth structure and, as one of my former students once said, "quit zipping out inferior preparations." Let us slow down on the teaching of "speed" and the "easy way."

"Of all work," said the Bishop of Exeter, "that produces results, nine-tenths must be drudgery. There is no work from the highest to the lowest which can be done well by any man who is unwilling to make that sacrifice."

The day a man passes the State Board is the last day he will have anyone checking to see if he has done a procedure properly. From then on it is up to his own self-discipline and price of accomplishment of the dental skills.

"The measure of a man's character is what he would do if he knew he would never be found out."*

I believe that the educational trend is upward, it only had one way to go, and if this upward course is continued I feel that the near future will see the desired close unity between the patient, the dentist, the instructor, college policy makers, and our society. When this comes about, the words of the lament at the opening of this paper will read something like this:

"I'm glad that I can only see
Teeth that really belong to me.
Teeth with which I chew a roast
And grind to dust a piece of toast.
Teeth and mouth whose health alone
Can tell the world they are my own.
False teeth are made for fools, not for you or me.
For me they just will never be."

Parody by Ysabel Fetterman

**Thomas B. MacCaulay*

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Lloyd Baum, D.M.D.

Dental Education in Southern California Versus New York: Some Personal Observations

As many of you may know, I moved from Loma Linda to New York to assist in the development of a new State school at Stony Brook. Comments are based upon meager observations and experience, as well as colored with some personal prejudices.

Dentistry is not as different in New York as I would have expected. There is a difference, however, a difference which is reflected in the educational process as well as its practice. "The Science and Art of Dentistry" is a definition that is common to all of us. In both geographic areas a curious balance between "art" and "science" exists but emphasis in the West seems to be directed toward the former; in the Northeast toward the latter.

Let us turn our attention to this "balance" as it relates to the various dental disciplines. To practice Oral Pathology, for example, very little "art" is required; scientific knowledge plays the obvious major role. In the clinical practice of Endodontics or Orthodontics, there is perhaps equal emphasis between scientific knowledge of the subjects and artistic ability to debride a canal or manipulate an arch wire. As a discipline, Prosthodontics is heavily weighted in favor of the "art" components, whereas Oral Biology and Oral Medicine are nearly exclusively scientific in nature. In less obvious contrast but with a difference in emphasis, Operative Dentistry and Periodontics could likewise be compared. In general, one could say that the needs of the restorative dentist are more artistic in nature than they are scientific.

With this thought in mind, it behooves us to expand our vision and attempt to compare the "dental science" with the "dental art" components of our profession. The *biological scientist* views things very differently from the dental

Dr. Baum *received his dental degree from the University of Oregon in 1946 and subsequently obtained his M.S. degree in Restorative Dentistry from the University of Michigan in 1952. He moved to California where he taught at the University of Southern California for a year; in 1955 he became Director of the Clinic at Loma Linda University School of Dentistry. Dr. Baum remained at Loma Linda University until he recently assumed duties as Chairman of the Department of Restorative Dentistry at the State University of New York, Stony Brook. Dr. Baum is the author of two textbooks in Operative and Restorative Dentistry.*

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"artist" . . . and must be evaluated accordingly. The "biological scientist" views things in terms of living tissue and its reaction to its environment. He sees things in terms of growth and development and bodily processes. The biological scientist also views therapy in a statistical frame of reference. For example, he sees infectious mononucleosis as a disease afflicting "x" percentage of the population in a certain age group. He sees autogenous bone grafts as resulting in successful repair of bony periodontal pockets in only a certain percentage of cases. He allows room for and expects failure.

In analyzing the Restorative Dentist, we find him to be a different type of personality with a different thinking process than the Oral Biologist. One could record four traits that characterize the classic Restorative Dentist.

1. The Restorative Dentist views things as an *engineer* or an architect. Can you imagine an engineer stringing cables for the Verrazzano Bridge and assuring the State legislature of New York that statistics have shown that bridges built with this design and in this format blow down only 22 percent of the time after they have been in service for 10 years? Can you imagine an architectural firm getting the contract for constructing the Empire State Building by assuring its owners that such a structure has a fairly good record and is not likely to fall down? Because of "congenital" structural defects, only 11 percent of similar structures have faced similar fates in past years.

Can you imagine the restorative dentist in general, the operative dentist in particular, or a member of the AAGFO especially, placing a bridge that he expects might loosen or a "filling" that can likely fall out?

He is a craftsman and a builder at heart. He views dental therapy as an exact science and renders treatment with predictable results. Restoration of dental health, as he sees it, is a process to be achieved by manually preparing the teeth (or mouth) and restoring the missing part in metal, ceramics or plastic.

On the other hand, the biologist views dental disease as an entity in which he also performs a healing act, but his "act" is to administer a medication, to rely upon growth and development, or a biologic process to enable the body to heal itself.

2. The restorative dentist is a "chicken". He is the antithesis of an adventuresome person. A classic example of his reluctance is seen in the field of pain control. Without a doubt, the operative and crown and bridge procedures require the use of more anesthetic solution than do all the other disciplines combined. By being the major consumer of the local anesthetic injection, it is to be expected that he would lead in this field within the dental school. Yet, we all know that oral surgery departments in educational institutions teach pain control despite the fact that pulpal anesthesia for operative procedures requires more profound anesthesia than do surgical procedures. Many general dentists performing restorative procedures are content to limp along with a working knowledge of only infiltration and the inferior alveolar block, rather than developing expertise in administering the infraorbital and other block injections.

3. The restorative dentist has "tunnel vision." He can see very clearly a certain aspect of a problem, but is blind to the overall picture. He is inclined to see only "teeth" and "fillings" rather than the patient as a person. His

concern with minutia and predictable results has prevented him with his knowledge and expertise from becoming engaged in worthwhile clinical experiments. Had the classic restorative dentist broader horizons and were he more adventuresome, the acid-etch concept of treatment could have been refined and promoted many years ago. Research in implantology would likewise have benefited, had interest been shown by clinicians who had a greater respect for and knowledge of occlusion and artistic exellence.

4. The restorative dentist is intolerant. Who of us does not have his own pet technique, his own special wax, plugger or finishing instrument that is "better than all the others"? We all have our own thing and are reluctant to admit that someone else's is as good as ours.

With this background in mind, let us now attempt to explain differences between Eastern and Western dentistry.

I am forever indebted to Ian Hamilton for introducing me to the book, "The Aims of Education" by Alfred Whitehead*. In this book, Dr. Whitehead indicates that schools exist for, and are a definite reflection of, the culture which nourishes them. Such seems to be the case with dental schools in the northeast.

Culture in the northeast evolved much more differently from the culture in the west, with which I am more familiar. Northeast culture over the 19th and early part of the 20th century centered around emigrants who landed in New York and other eastern cities. Groups of Irish, Italians, Jews, and Scandinavians arrived without many possessions but with a love for freedom. Banding together in their ethnic groups, small settlements developed within the cities.

Industrious and inspired, these people worked hard in factories with one goal in mind . . . to make life easier for their children. This new generation grew up with more creature comforts than their parents as they filled their places in society as shopkeepers and craftsmen.

Having similar goals as their parents . . . making life better for their children . . . they recognized the growing competition of the metropolitan society and made preparations accordingly. They provided their children with and insisted that they avail themselves of an education. "Learn to work with your brains, not your hands." "Get ahead by being smart while you let someone else do the menial labor." These children following this admonition have now grown into adulthood and comprise the backbone of upper middle-class society in the metropolitan area.

Western culture, on the other hand, began with impulsive and adventuresome people who were dissatisfied with the status quo. They, unlike their city counterparts, sought their fortune elsewhere by carving their homes out of the wilderness or settling in newly developing communities. These were the type of people who "got ahead" by solving the problems at hand in a pragmatic fashion. Having lost much of their ethnic and language identities, their lives blended in with their neighbors as they sought security and advancement in cooperative rather than competitve enterprises. If they were

*Whitehead, Alfred North, The Aims of Education, *published as a paperback Mentor book by arrangement with the MacMillan Co., c. 1929.*

unhappy with their surroundings and neighbors, they resorted to violence or they moved on to greener pastures. Unlike their metropolitan counterparts, they had shallow roots and were not hesitant to move to new and more productive geogrpahic regions.

A backward glance at culture comparison will reveal an additional difference. Competition is usually associated with promotion of a product. The sale of a product invariably involves the use of rhetoric and the written word. In this regard, one must agree that the location of the stock exchanges, Madison Avenue, the editorial offices of our leading magazines, all generate from or have their roots in New York.

It is only reasonable that the intellectual and competitive atmosphere would permeate the profession, and in turn the dental schools.

While analyzing a potential staff member to a colleague some time ago, I remarked that the candidate related well to students but that he was a poor lecturer. The response from my colleague was forthright. "If he cannot lecture, how on earth can he be a good teacher?"

In one sense, my friend was right, in another sense he was wrong. If the subject matter was primarily scientific in nature he was correct; if the subject matter pertained toward artistic ends he was wrong. All of us in review can recall outstanding teachers of operative techniques and gold foil instruction. Although not hard pressed for ability to explain themselves before a group, their strong point was their ability to perform, to demonstrate, and to inspire their students to follow their example.

Teaching a skill is not accomplished by rhetoric or expertise in the lecture room; rather, it occurs best in a clinical or laboratory setting. My observations have led me to believe that this concept is not generally practiced or accepted in this geographic location. One seems to feel that the ability of a practitioner or a teacher to perform in a clinical setting is of small moment, but there is no excuse for the teacher or the clinician who cannot express himself well by word or pen.

As mentioned before, scientific aspects of restorative practice are minimal compared to artistic needs. As much as some might wish it to be to the contrary, operative dentistry, fixed and removable prosthodontics have one thing in common: when done properly they require more skill from the operator than they do knowledge. Right or wrong, these three disciplines comprise the lion's share of the common general dental practice. Incongruities are likely to exist between the training of a practitioner and the public needs for his services.

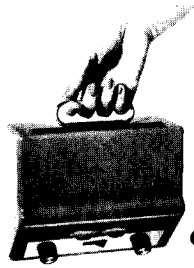
Unfortunately, not all schools realize these goals and few, if any, arrive at this delicate balance between art and science. A good dental educator whether he is teaching art or science should understand the various components that make up a dental education module so he can provide the public with better dental practitioners. This condition may change in years to come, but we do not see it in the immediate future. In an educational program, it behooves teachers therefore to lend proper emphasis where it is needed in teaching skills.

Yet, for the dentist to be "balanced" professionally, there are other goals to be reached as well. What is wrong, for example, with a dentist who is

able to read and understand the scientific literature, or to write a coherent letter of recommendation? Regardless of geographic boundaries, a good dental school must stay in the middle of the road in providing a graduate who can supply the dental needs of society. Students must be taught fundamental principles in operative techniques as well as knowledge of oral biology. Needs for quality control in a restorative clinic setting must be given equal priority with the knowledge of the dental disease itself. Only in this way can the American public be assured of competent and well trained providers of dental health care.

NEW — ELECTRO - MALLET

The Electronic Condenser



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NEW Stop or Go Handpiece

NEW Self Cleaning Contacts

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Hunter A. Brinker, Jr.

No Man Is An Island

State Board's Interest in Educational Invovement

The purpose of this paper is to establish some surprising facts pertaining to the relationship of the performance of Florida State Board applicants and the educational system of teaching today.

For many years prior to 1971, a class II amalgam and a class II, III, or V direct gold restoration were the requirements for the operative section of the Florida State Board examinations. In 1972, the class V and class II direct gold restorations were eliminated as a board requirement because so many patients' hard and soft tissues were brutally traumatized. This was primarily the result of improper placement of tissue retractors and improper, inadequate condensing and finishing procedures. Consequently, the candidates were given the option of either a class III direct gold restoration or a gold inlay. Because nearly 80% of the candidates chose to do the gold inlay, the board again changed its requirement, and the direct gold restoration was replaced with the gold inlay in 1973.

For many years prior to 1971, a four-year curriculum was the requirement for graduation from dental school. Then in 1971, the Comprehensive Health Manpower Training Act[1] authorized capitation grants to schools of dentistry. These grants provided support for the educational programs of such schools, based on enrollment and early graduation; contingent on a continuing, mandatory enrollment increase. By 1973, fifty-seven dental institutions had increased their enrollments, decreased their curriculum, and received a total of $36,851,875.00 in capitation grants.

The quality of dentistry being done by candidates taking state board examinations today is not only a threat to the health and welfare of the public, but is a threat to the educational system, as well. Federal funding is important

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This paper was presented to the American Academy of Gold Foil Operators, October 26, 1973 at the University of Texas Dental Branch, Houston, Texas.

TABLE I*

A. HAND CUTTING INSTRUMENTS	Number of Candidates	Percent of Total Candidates
1. Sharp and in good condition	124	51.2
2. Rusted or dull	76	31.4
3. Inadequate to do procedure	42	17.4
B. ARTICULATORS		
1. TYPE		
a. Semi-adjustable	189	78.1
b. Barn-door hinges	53	21.9
c. Fully adjustable	0	—
2. CONDITION		
a. Good	149	61.5
b. Poor	93	38.5
3. OWNERSHIP		
a. Owned articulator	208	85.9
b. Borrowed articulator	34	14.1

*242 candidates evaluated

to the education system, but we cannot accept the strings that are attached to this money. Is the sacrifice of our profession the way it must be done?

An evaluation of 242 candidates, in sequence, who took the Florida State Board examination, revealed that nearly half were using inadequate, dull, or rusted instruments (Table I). It was also observed that many of the instruments were brand new, yet never used on the cavity preparation. Many of the candidates were attempting to do the entire inlay preparation with diamonds and burs, using no hand instruments.

Although the State Board Examination instructions specifically stated that semi-adjustable articulators would be used, over 21% came to take the examination with barn-door hinge articulators (Table I). Over half the articulators were found to be in poor condition, and over 14% of them had been borrowed. Many dental schools throughout the country today are supplying their students with dental instruments. It is hard to believe that the students or dental auxiliary will have as much appreciation for borrowed instruments as they would for their own. There was a time when the dentist's greatest pride was to own his own instruments. This pride was reflected in the care and use of these instruments.

Visual observation checks were made on these same candidates in placing the rubber dam on the teeth of the quadrant or arch, prior to cutting the cavity preparation (Table II). They were evaluated on correct application of the rubber dam, allowing accurate access and visibility to surgerize and treat the tooth. Of the 21% using the rubber dam, approximately half used it incorrectly. Only 16 out of the 242 candidates used the rubber dam for cementation of their casting; however, the cementing medium used by all 242 candidates was zinc oxyphosphate cement.

TABLE II*

A. RUBBER DAM APPLICATION	Number of Candidates	Percent of Total Candidates
1. Applied rubber dam for cavity preparation	51	21.1
2. Applied rubber dam correctly	27	11.1
3. Applied rubber dam for cementation of casting	16	6.6

*242 candidates evaluated

TABLE III*

	Total Number of Trays	Number of Acceptable Trays	Percent of Total Number of Trays
A. TRAYS			
1. Custom	59	38	64.4
2. Stock	134	43	32.0
3. Stock with wash	22	17	80.0

B. IMPRESSIONS

1. Acceptable	98
2. Unacceptable	117

C. REASONS FOR UNACCEPTABLE IMPRESSIONS	Number of Unacceptable Impressions
1. Bubbles on any critical marginal areas	19
2. Impression did not include all the teeth of the arch	77
3. Impression tray showed through in one or more occlusal areas	38
4. All marginal areas were not defined properly	20

*215 impressions evaluated

TABLE IV*

OUTLINE FORM	Number of Candidates	Percent of Total Candidates
Proximal outline form over-extended	118	48.9
Occlusal outline form over-extended	115	47.5
DAMAGE TO ADJACENT TEETH	110	45.5

*242 candidates evaluated

A total of 215 impressions were evaluated, in sequence, using four basic principles as criteria for an unacceptable impression (Table III). It is interesting to note that the stock trays in which a wash was utilized had the greatest percentage of acceptability.

Nearly 48% of 242 candidates extended their outline forms too much, both proximally and occlusally (Table IV). With decay slightly penetrating the dento-enamel junction and with minimal lateral spread, the proximal outline form was considered acceptable if extended far enough to allow the thickness of a Wiedelstadt chisel when placed between the cavo-surface margin of the buccal and lingual proximal wall and the adjacent tooth. If the outline form was extended further, due to lateral spread of decay or an existing restoration, it was accepted. With the same minimal penetration of decay, the occlusal outline form was considered too wide if the occlusal isthmus of the preparation was more than ⅓ the width of the distance between the buccal and lingual cusp tips, measured in a bucco-lingual direction. When the casts of the cavity preparations were examined, it was noted that approximately 45% had damaged or abraded the teeth adjacent to the one they were treating (Table IV).

The majority of the teeth that were restored with onlay type castings did not have a sufficient amount of gold to protect the underlying tooth structure. When the candidates were asked the question, "What thickness of gold would you consider sufficient to protect the underlying tooth structure when onlaying an occluding cusp?" nearly all of them stated that either they did not know, or that a half millimeter of gold should be enough. The majority of the cavity preparations observed had little or no retention form and many marginal ridges were left too weak and unsupported. Because of the quality of these preparations, all usable dies from four sections of the examination were evaluated by three members of the staff of Operative Dentistry at the

TABLE V*

A. UNSATISFACTORY CAVITY PREPARATIONS

Reasons For Unsatisfactory Evaluations	Average of Total Dies	Percent of Total Dies
1. No withdrawal form	33	26.2
2. No retention form against proximal displacement	51	40.5
3. Lack of gingival bevel	74	58.7
4. Unsupported enamel or marginal ridges too weak to support occlusion	36	28.5
5. Cusps that needed protection (not onlayed)	44	34.9
6. Occlusal extension too deep pulpally	42	33
B. SATISFACTORY CAVITY PREPARATIONS	8	6.3

*126 dies evaluated. Reliability coefficient of the four evaluators is at the .8 level.

University of Florida Dental School* and the author (Table V). Six basic principles were used to evaluate these dies:

1. Withdrawal form. Would the wax pattern withdraw or were there undercuts or non-parallel walls that would prevent the wax pattern from withdrawing and cause distortion?
2. Retention form against proximal displacement. Would the gold casting stay in place when pressure was placed on the marginal ridge?
3. Presence of a gingival bevel.
4. Adequately supported enamel. Was the enamel adequately supported and the remaining marginal ridge at least 3 to 4 millimeters thick?
5. Cusp protection. Were the remaining cusps strong enough or did they need protection?
6. Depth of pulpal floor. Was the depth of the pulpal floor acceptable, or was the depth over-extended?

It is realized that many other factors should have been checked, such as proximal outline form, depth of gingival floor and finish of enamel walls; however, since the dies were not evaluated in the full arch impression or related to the clinical patient, this was impossible. It was agreed that the six principles listed above were necessary to the basic success of the casting. If any one of these principles was not satisfied, the casting, from a biomechanical aspect, would fail in a short period of time. Only eight teeth of the 126 evaluated met the above criteria.

SUMMARY

What is the solution to the problems that these statistics reveal? First, and most important, it must be recognized that there is a problem. We must all get involved, not as individuals, but as a strong group, with each individual contributing his share to the force of this group. Educators cannot do it alone, state board members cannot do it alone, we, as general practitioners cannot do it alone. It must be done together, and it must be done now, before it is too late.

Our educational institutions must have money to operate, and this demand for more money gets greater every year. Financial support must come from somewhere, but the strings that are attached to this support must be controlled. It is our obligation to make this government funding work for us, not against us, and we can do this by getting involved in bipartisan politics. Politics created this problem, and only politics can solve it. Contributions to political action committees, direct contact with state and federal legislators are the quickest and most efficient ways of letting the government know we are not willing to sacrifice our profession.

We must put operative dentistry back into dentistry, and elevate it in our dental educational system. It must be given a place in our dental schools that will at least insure its qualities with other specialties. There is a definite need for the establishment of a Board of Operative Dentistry.

A man who stands alone sees only the reflection of himself. We cannot let this happen to our profession. Today will soon be tomorrow and tomorrow will soon be yesterday. We must do something today, and what we can do must be done together — No Man is An Island.

Breathes not a man who hasn't said,
If it were me, I *could.*
But seldom do you ever hear,
If it were me, I *would.*

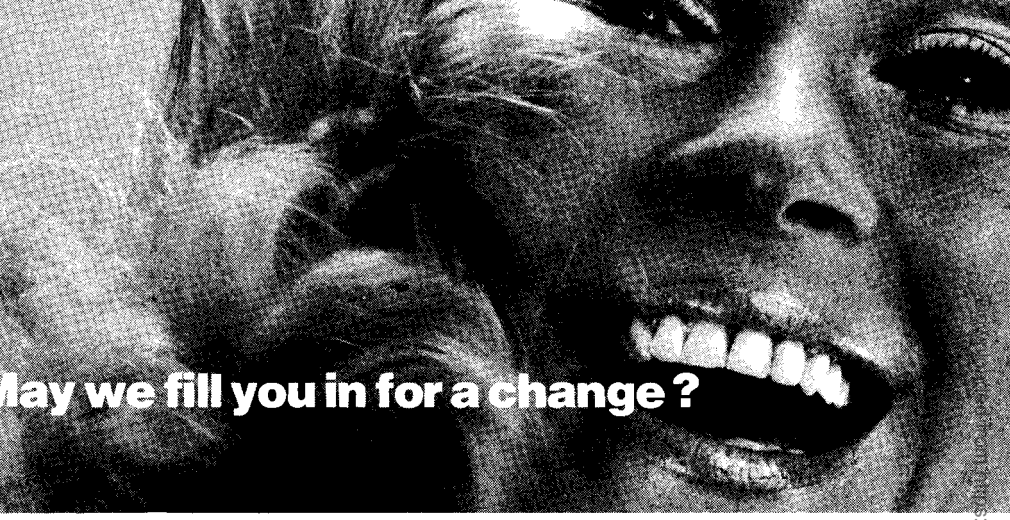
REFERENCES

1. U.S. Dept. of Health, Education and Welfare, P.H.S.: *Health Professions Capitation Grants,* December 1971.

NO MAN IS AN ISLAND

As the mountains guard the valleys
And the sun protects the earth,
No man can stand alone to say
His knowledge and concern
Have nought in earthly worth.
To stand alone, above it all
To look down, upon a troubled realm
Is often as a ship at sea
With no Captain at its helm.
An individual shouts to deafened ears
Together, seeds of knowledge can be sown
For No Man Is An Island
To lean upon, nor stand alone.

. . . . Shirley D. Cleveland



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