

The Journal of the Association of Schools and Colleges of Optometry

# OPTOMETRIC EDUCATION

Volume 20, Number 3



Spring 1995



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Universidad Autonoma De La Laguna, Mexico**



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**VOL. 20  
NO. 3**

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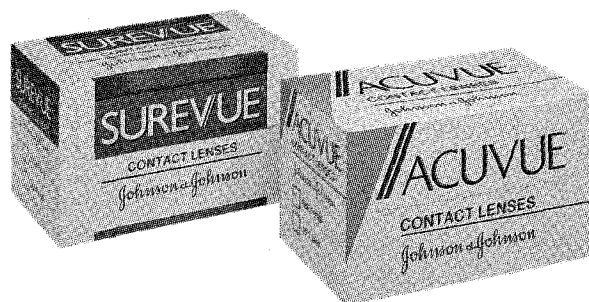
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# EDITORIAL

## Interdisciplinary Team Building

Periodically it is appropriate to reprint in *Optometric Education* articles that have been published in other professional journals. So it is that in this issue, we find the paper by Biles et al<sup>1</sup> on the subject of interdisciplinary team building. This paper, published in the *Journal of Pharmaceutical Education*, is the 1993 report of the Argus Commission, a pharmacy "think tank" comprised of past-presidents of the American Association of Colleges of Pharmacy (AACP).

This paper is significant to *Optometric Education's* readership because it focuses on the role of the health professions' colleges in bringing together each profession's educational and clinical resources to effect a "team approach" to health care training. The paper's authors, including optometry's own Tom Lewis [Dr. Tom Lewis, President, Pennsylvania College of Optometry] point to the importance of sharing among educational institutions and professional associations, human and other resources as a means of stimulating interdisciplinary planning, educational delivery and outcome assessment. The longer term payoff of educational interaction is greater interdisciplinary involvement.

Optometry is well suited as a player in such inter-professional involvement because although we have been traditionally somewhat isolated, our relationships to other specialties of health care has blossomed of late. On an increasing basis, we find ourselves to be clinically engaged with other providers, especially pharmacists since our expanded scope has fortified our

position in therapeutics [note the growth, since the Argus report was written, in the number of states where optometrists are allowed to use pharmaceutical agents to treat specific eye disease]. This growth in our scope of practice places us in a position of direct prescriptive interface with pharmacy providers who have been classically more involved with medical prescribers. To become fully effective, this interface will need development and nurturing commencing at the level of undergraduate education and within the arena of postgraduate continuing education. The team building concepts suggested by the ARGUS Commission would address this need.

Pharmacy, too, is reaching out to other professions, signaling its own rise as an expanding profession. In fact, pharmacy's position in health care today is not unlike our own lot of an earlier time. Traditional pharmacy has been a profession dealing primarily with materials (drugs). However, over the past two decades, pharmacy's movement into pharmacotherapy and other specialized practice areas, i.e. nuclear pharmacy, nutrition, support pharmacy and psychiatric pharmacy, has expanded its horizons more solidly in the role of providers of patient care. As we expand our own scope in medicinal therapeutics, it is essential that we understand the dynamics of the also changing profession of pharmacy so that we are able to interact appropriately.

In more general terms, the most important issue reviewed by the ARGUS Commission Report is the need for the various independent

medical professions to work more cohesively in practice. The report emphasizes that this goal would be substantively enhanced by closer interprofessional involvement in the educational arena. The report cites the importance of involving our professional organizations at the local, state and national levels in interdisciplinary councils and educational conferences. This idea is insightful because it not only leads us to greater communication but it also anticipates future growth in clinical training as an expanded practitioner/educator function.

The advancement of each profession ought not to occur in isolation. Continuous interdisciplinary interaction is essential to maintaining a proactive posture within the mainstream of medical education and health service delivery. We have much to learn from each other. Working together will not only enhance our combined utilization of resources, but will add buoyancy to the advancement of our individual professions.



Felix M. Barker, II, O.D., M.S.  
Editor

1. Biles JA, et al. Health professions team building through pharmacy, dentistry, optometry, pharmacy and podiatry. The 1993 Argus Commission Report. *J Pharmaceutical Education* 1993. 57:9S-13S.

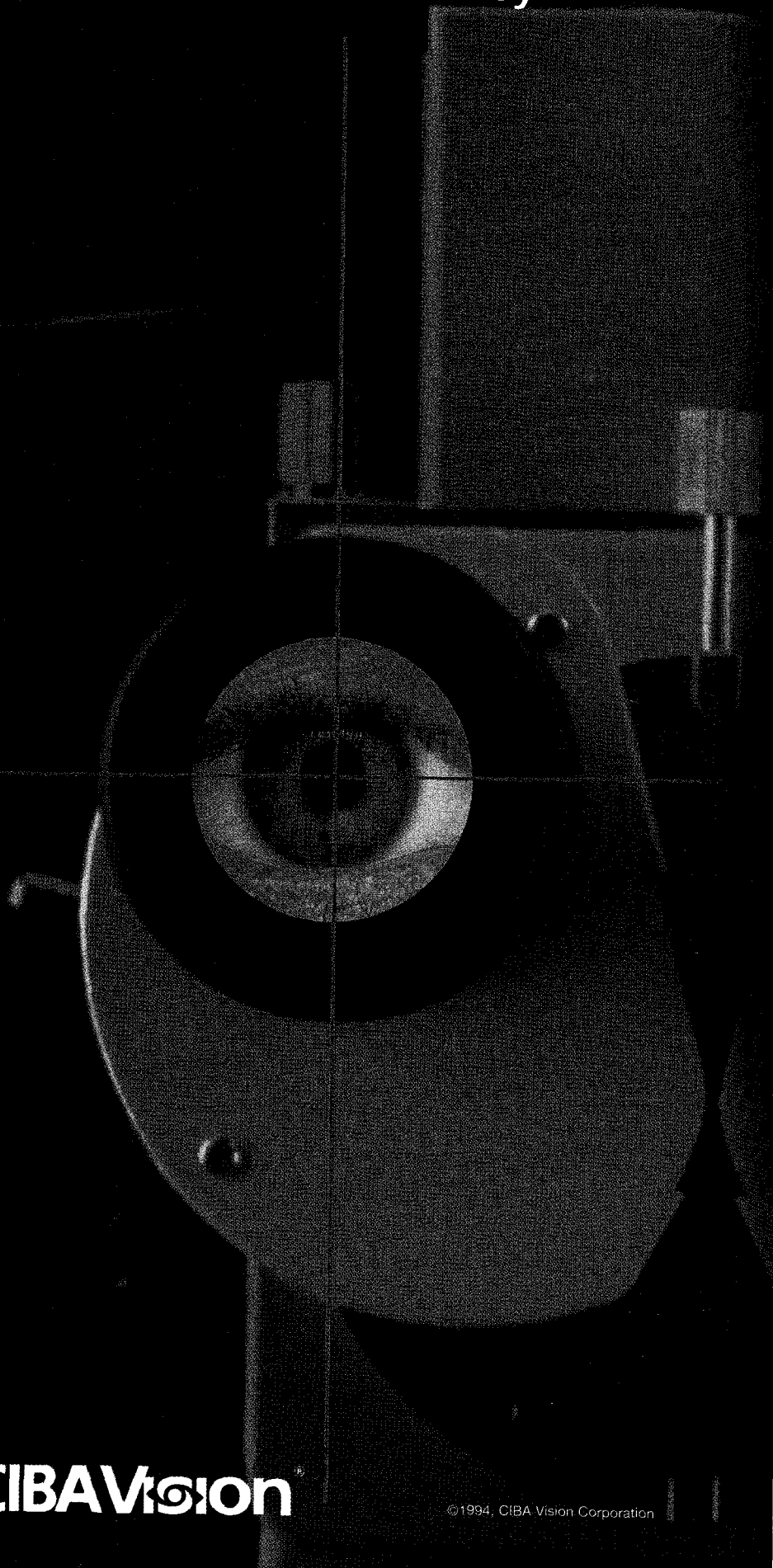
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## Computer Software Reviews

William M. Dell, O.D., M.P.H.

### **Radiologic Anatomy,**

University of Florida,  
Gainesville, FL, Gold Standard  
Multimedia, Inc., 1994, \$195.

**Radiologic Anatomy** was originally developed for laserdisc technology as a two-screen program. Other versions were developed for the Macintosh and subsequently a Windows version of the program was developed using Toolbook by Asymetrix, Inc. The latter is a popular HyperCard-like authoring program for Windows. Most recently a CD-ROM version for both the Mac and Windows platforms was published. The latter (reviewed) is a one-screen program.

The program was developed at the University of Florida College of Medicine. The premise for its development was that most physicians (and even more so, optometrists) will never see the inside of the human body except through imaging. The exceptions to this are, obviously, surgeons and for optometrists, specifically, the eye. Consequently teaching anatomy based on radiologic images would be instrumental in acquiring a fundamental knowledge of both the anatomy and its radiologic interpretation.

Its primary design is as an interactive, self-directed instructional program directed at providing the fundamentals of normal anatomy as presented in common diagnostic imaging studies. It covers the major anatomic structures of the body represented by over 230 normal images, over 210 abnormal images as well as anatomic correlations with over 350 cadaveric images. Each image is labeled

and/or has accompanying descriptive text. The major modalities of imaging are covered emphasizing plain films, MRI's, and CT scans. Other more specialized studies are also utilized where appropriate including fluoroscopy, angiography, etc. A full motion video of radiologic techniques with theory is also presented.

The content areas are grouped by anatomic topic. They include skull and spine; head and neck tissues; chest

■

*The images and anatomic correlations are of sufficiently high quality. The program is relatively easy to use*

wall; lungs and pleura; heart and great vessels; mediastinum; abdominal wall; gastrointestinal system; genitourinary system; retroperitoneum; upper extremities; and lower extremities.

The program allows the user to choose topics from the initial menu and to navigate between different options represented by a system of icons on each screen. This permits the viewer to move from image to image, to switch between the radiographic image, its anatomic correlation or the radiologic technique correlation. A help button, tutorial, "Quick Reference," and "Self-

Evaluation" can also be chosen on the screen. For those institutions choosing site licenses, there is a provision for end-user modification of material available as part of the "Instructor Tools."

The program overall is a very valuable and high quality tool for use in optometric education. It provides an excellent educational approach. The images and anatomic correlations are of sufficiently high quality. The program is relatively easy to use for those not facile with computers or computer-assisted instruction (CAI). I was able to navigate through the screens without major problems and without referring to the manual or help screens. Some hands-on instruction, however, would shorten the learning curve.

Given the increasing utilization of imaging studies in optometric practice, teaching anatomy through radiographic studies and interpretation is a particularly sound educational strategy. As with all well-executed interactive CAI, it supports and encourages different learning styles and provides students with a varied and attractive alternative to traditional study. It can be used as a self-directed or directed adjunct to an anatomy course as well as being useful for self-directed continuing education.

Its major limitation is that in covering the whole of anatomy, the coverage of head and neck, eye and orbit and skull and contents images is somewhat limited. From this perspective, it falls considerably short of the ideal.

Overall, I would recommend it highly for incorporation into optometric education.□

# INDUSTRY NEWS

*Companies appearing on these pages are members of ASCO's Sustaining Member Program. Sustaining Members are listed on the inside front cover of each issue. Membership is open to manufacturers and distributors of ophthalmic equipment and supplies and pharmaceutical companies.*

## Varilux Supports Optometry Super Bowl

Varilux Corporation sponsored the Fourth Annual Optometry Super Bowl (OSB) during the January American Optometric Student Association (AOSA) Conference. Third and fourth year optometry students attend this annual meeting.

The Optometry Super Bowl has become a highlight of this meeting. The Super Bowl is conducted in a quiz show format including optometry questions and a general trivia category. One representative from each of the 19 schools and colleges of optometry in the United States and Canada competed in the contest. The first prize grant of \$1,000 and traveling trophy to be displayed at the winner's school went to Andy Feltz of TOSU College of Optometry; second prize of \$500 was awarded to Tracey Curry from the University of Waterloo School of Optometry; and third prize of \$250 was presented to Lisa Godwin of the Southern College of Optometry.

Dr. John Potter, editor of the journal of the American Optometric Association, moderated the contest for the fourth consecutive year, and distinguished officers of the American Optometric Association served as judges.

"The Peabody Hotel proves to be a beautiful site for such a fun competition," said Danne Ventura and Dr. Rod Tahrán, coordinators of the event for Varilux Corporation.

"Varilux Corporation was proud to again sponsor this event."

## Vistakon Supports Ezell Fellowships

The American Optometric Foundation (AOF) announced the recipients of the prestigious 1994-95

Ezell Fellowships. This year the fellowships were awarded to Susana Chung, M.Sc. (Optom.), College of Optometry, University of Houston; Michael J. Giese, O.D., School of Medicine University of California; Julie A. Scott, School of Optometry, University of California; Thomas O. Salmon, O.D., School of Optometry, Indiana University; Mr. David Evans, School of Optometry, Indiana University; Ms. T. Rowan Candy, School of Optometry, University of California; Stuart Richer, O.D., University of Health Sciences, Chicago Medical School.

The AOF gratefully extends its appreciation to Vistakon, a division of Johnson & Johnson Vision Products, Inc., which provided financial support for this and other AOF programs. Vistakon is also officially recognized by the AOF as an Ezell Sponsor, an exclusive recognition category for major sponsors of the AOF.

For more information on programs offered by the American Optometric Foundation, please contact James Vrac, administrator, American Optometric Foundation, Suite 1117, 4330 East West Highway, Bethesda, MD 20814-4408 or (301) 718-6514.

## CIBA Presents Practice Development Seminar

Eye care professionals report that they're implementing the skills taught in CIBA Vision's newest phase of The Business of Eye Care™ practice development series — Leading Your Practice for Results™. Launched in September 1994, Leading Your Practice for Results uses a computer-based, interactive simulation to demonstrate how developing a strong staff and focusing on patients' needs help to improve the overall performance of an eye care practice. In

1995, CIBA Vision will continue this innovative program and will present it in 15 cities nationwide.

"Since attending Leading Your Practice for Results, we've implemented monthly staff meetings to improve practice efficiency and increase patient satisfaction," said Kris M. Kobayashi, O.D., Golden Optometric Corporation, West Covina, California. "The meetings really helped us to work and interact as a team. Even our CIBA Vision sales representative has participated in staff meetings as part of our team."

For more information about CIBA Vision's Leading Your Practice for Results, eye care professionals can contact their local sales representative or contact CIBA Vision at (800) 242-9924.

## Bausch & Lomb Grant to NEWENCO

Bausch & Lomb has announced the selection of the New England College of Optometry (NEWENCO), Boston, MA, and its principal internal clinic, the New England Eye Institute, to receive an educational grant. The grant, called Future Focus, includes \$10,000 to enhance the clinical education experience of students. NEWENCO's proposal was selected from those submitted by ten North American schools of optometry that entered the competitive grant program.

"Contact lens curriculum needs to evolve to meet the realities of a changed practice environment," said William T. Reindel, O.D., director of professional market development for Bausch & Lomb's personal products division. "This adaptive process is an important step in developing the next generation of eye care professionals, as it emphasizes more real world experience and patient counseling — both

important tools to creating satisfied contact lens patients. We are awarding the first Future Focus grant to NEWENCO because their proposal best demonstrated how this change will enhance the clinical experience of optometry students and their patients," explained Reindel.

In addition to the \$10,000 grant, Bausch & Lomb will invest further resources to facilitate NEWENCO's work, including market research support and access to professional consulting from outside experts according to Reindel.

"NEWENCO is excited to be a Future Focus award recipient," said Ron Watanabe, O.D., assistant professor, coordinator of NEWENCO's contact lens clinic, and co-author of the winning proposal. "We saw that our students needed a curriculum that would better simulate the practical setting of a contact lens practice. To achieve our goals of improving the quality of contact lens care and patient satisfaction, we need to implement this curriculum as early as the students' third year. This grant will help us move the process forward," said Watanabe.

As part of the innovative design of the new grant, NEWENCO and subsequent recipients will share the methodology and results of their work with the optometric community.

### **Paragon Conducts Space Experiment**

One of the two leading oxygen permeable contact lens manufacturers in the United States tested a new contact lens material on the last space shuttle mission. Paragon Vision Sciences Corporation of Mesa, Arizona, conducted its second space experiment in the SPACEHAB Space Research Laboratory on the Space Shuttle Discover, which launched on February 2, 1995.

Paragon scientists found that the composition of the new materials was more permeable than current lens materials. They also found that the new materials were stronger than current lens materials, allowing almost four times more lenses to be sliced apart from the same amount of materials than before.

Paragon forecasts that the new contact lenses will be introduced in to the market when the manufacturing costs fall to about twice the cost of current lenses. If the regulatory agencies of the United States, Europe, and Japan approve the new lens, the earliest they will be introduced is 1998.



### **Polymer to Expand RGP Training**

Polymer Technology will expand its Rigid Gas Permeable (RGP) training program to better address individual optometry schools in 1995.

The program, which was first conducted at The Ohio State University's College of Optometry last May, consisted of eight-hours of continuing education that included four hours of fitting lectures and four hours of hands-on clinical work.

A roundtable discussion followed that addressed issues relevant to improving contact lens training for students entering the eyecare field.

The 1995 RGP training program will be similar to the one held at Ohio State in 1994, but Polymer said that each program will be customized to fit each school's need.

### **Wesley-Jessen Sponsors "Most Beautiful Eyes" Contest**

Wesley-Jessen Corp. is the principal sponsor of Prevent Blindness America's "Most Beautiful Eyes" contest, which takes place nationally in February and March 1995.

People of all ages and gender are invited to submit photos of themselves to win prizes totaling more than \$70,000, which will be awarded to both state and national winners. National grand prizes will be three all-expenses-paid vacations worth \$5,000 each.

Contestants may obtain entry forms at Sears Optical departments,

Sears Portrait studios and other participating retailers.

"Wesley-Jessen and Prevent Blindness America share a common goal — to promote good eye health and eye safety for all Americans," said Ed Greene, president of Prevent Blindness America. "The goal of the contest is to help make people aware of the fragile nature of their eyes," he said.

Wesley-Jessen President Charles M. Stroupe said, "Wesley-Jessen has committed more than \$100,000 to Prevent Blindness America to make this contest a success. We're proud to be the lead sponsor of the contest. It's part of our long-term support of Prevent Blindness America's humanitarian goals and an excellent vehicle to promote our cosmetic tinted lenses."

### **Reichert Introduces Lens Measuring Instrument**

Reichert Ophthalmic Instruments introduces the new LensChek™ Advanced Logic Lensometer®, the first lens measuring instrument to offer the ease-of-use, accuracy and speed of an automatic lensmeter at a price comparable to that of a manual instrument. The LensChek's exclusive design features patented microprocessor technology, including a custom microchip and advanced electronics, enabling the instrument to provide all the capabilities a practice requires, with no moving optical parts.

The LensChek Advanced Logic Lensometer is designed and engineered with the operator in mind to make it the easiest-to-use lensmeter in the industry. Even an inexperienced operator can use LensChek after only a few minutes of training to obtain accurate measurements with a push of a button. Lens centering is achieved in seconds, with no need to focus and no dials to adjust. LensChek enables doctors to spend less time training operators and more time attending to patient needs.

For more information, call Reichert at (716) 686-4500 or contact any Reichert Authorized distributor; write to Reichert Ophthalmic Instruments, a division of Leica, P.O. Box 123, Buffalo, NY 14240-0123; or fax (716) 686-4555.

*(continued on page 94)*



# How are Optometry Schools Coping with Learning Disabled Professional Students?

Harold A. Solan, O.D., M.A.

Michael H. Heiberger, O.D., M.A.

## Abstract

*A recent survey of the schools and colleges of optometry revealed many inconsistencies in providing "reasonable accommodations" for students who have been identified as learning disabled. The responses suggest that the decision to adopt or not to adopt a policy with respect to Section 504 of the Rehabilitation Act of 1973 that defines the rights of handicapped individuals is being made at a level different from the level at which the policy is implemented. The regulations cover admission to an educational program as well as reasonable accommodations in the classroom, clinic, and testing that schools are expected to make to enable the student to meet the program's requirements in spite of the handicap. Recommendations that would "level the playing field" for learning disabled students are offered.*

**Key Words:** Reasonable accommodations, learning disability, Section 504, optometry schools, prevalence, handicapped

## Introduction

Section 504 is part of the Rehabilitation Act of 1973 (Public Law 93-112), and it is restated in the Americans with Disabilities Act (ADA), passed in 1990. In essence, Section 504 is the first federal civil rights law that specifically protects the rights of individuals with handicaps. It was reauthorized in 1992 and is now consistent with the Americans with Disabilities Act. Section 504, as subsequently amended, provides that:

No otherwise qualified individual with handicaps in the United States...shall, solely by reason of...handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.<sup>1</sup>

*Dr. Solan is professor of optometry and former director of the Learning Disabilities Unit at SUNY College of Optometry.*

*Dr. Heiberger is assistant clinical professor of optometry and director of planning and evaluation at SUNY College of Optometry.*

The regulation applies to all recipients of Federal financial assistance. Recipients include state education agencies, elementary and secondary school systems, colleges and universities, libraries, vocational schools and state vocational rehabilitation agencies. *Section 504 covers only those persons with handicaps who are otherwise qualified to participate in and benefit from the programs or activities receiving federal financial assistance.* The qualified handicapped person is an individual with handicap(s) who meets the academic and technical standards requisite to admission or participation in the educational program or activity.

An individual with a handicap is anyone with a physical or mental impairment that substantially limits or restricts one or more major life activities, such as ... seeing, hearing, speaking, breathing, learning and working. The term physical or mental impairment includes, but is not limited to, speech, hearing, visual and orthopedic impairments, cerebral palsy,...specific learning disabilities such as perceptual handicaps, brain injury, dyslexia, minimal brain dysfunction and developmental aphasia.<sup>2</sup>

Compliance with the portion of the Section 504 regulation that requires accessibility for physically handicapped individuals is not a serious problem for colleges of optometry since such accommodations and facilities usually are in place to meet the needs of patients who visit optometry clinics regularly. Therefore, this discussion will stress those aspects of the regulation that apply to optometry school applicants and students who are experiencing specific learning disabilities.

Of approximately four million students with disabilities who are enrolled in public elementary and secondary schools in the United States, 43 percent are classified as learning disabled. Another 10-20 percent who are not classified as handicapped have learning, language, or behavior problems that impede their educational progress.<sup>1</sup> In 1991, American Council on Education figures revealed that, among full-time college freshmen reporting disabilities, 25% (35,000) were identified as learning disabled, 25% as partially sighted, and 11% as hearing impaired. Overall, almost one in 11 full-time freshmen (8.8%) enrolled in college in 1991 reported having a disability.<sup>3</sup> Since learning disability is a "hidden handicap," it is difficult to estimate

the number of learning disabled students in the schools and colleges of optometry. An informal poll places the number at about 5% to 7%.<sup>4</sup>

Section 504 prohibits an admissions committee from inquiring as to whether an applicant for admission has a handicap; therefore identification may not take place until after the student has been in the program for some time.<sup>5</sup> It is the student's responsibility to make his or her handicapping condition known to an appropriate dean, faculty advisor, or to each professor individually. Documentation to verify the condition may be requested by the institution.<sup>1</sup> One can easily understand that a prospective student would not want to be stigmatized and would conceal the problem. Consequently, the institution is required to inform all applicants of the availability of services, auxiliary aids and academic adjustments. Because of all of these complexities, it is difficult to be precise as to how many of the 4900 optometry students are learning disabled.

Our experience in helping learning disabled students is that they have been admitted to optometry schools with undergraduate cumulative averages in the 2.8 to 3.4 range. Therefore, it must be presumed that the individual has developed at least some compensatory learning strategies. It should be noted, however, that the learning techniques that are successful at the undergraduate level are not necessarily sufficient in optometry school. The academic format is much more complex in many courses, and the amount of information covered in a given time period is significantly greater. Furthermore, the rate of presentation is often more rapid. Our experience in working with many learning disabled students is that they often have poor writing skills which impede taking notes rapidly.

The purpose of this paper is to make optometric administrators and educators more aware of the presence of learning disabled optometric students, encourage them to develop a uniform policy for the schools and colleges of optometry, and contemplate the "reasonable accommodations" that are required by the ADA and Section 504.

## Methodology

A survey form (see Figure 1) was mailed to the chief student affairs officer at each of the seventeen

**FIGURE 1**  
**SURVEY OF SCHOOLS AND COLLEGES OF OPTOMETRY**

Name of School:

1. Is there any attempt, in the application process, to elicit information from applicants about any learning disabilities they might have? ☐ Y ☐ N

If yes, please explain:

2. Is information obtained about learning disabilities revealed to the admissions committee? ☐ Y ☐ N

3. Are specific academic services (counseling, tutoring, etc.) made available to learning disabled students? ☐ Y ☐ N

If yes, please list these services:

4. Are accommodations in testing made available to learning disabled students? ☐ Y ☐ N

If yes, please list these accommodations:

5. Are accommodations made in classroom (courses) for learning disabled students? ☐ Y ☐ N

If yes, please list:

6. Are learning disabled students permitted to use tape recorders in the classroom? ☐ Y ☐ N

7. Are accommodations made in the clinics for learning disabled students? ☐ Y ☐ N

If yes, please list:

8. Does your school have a policy with regard to implementation of Section 504 or the Americans With Disabilities Act? ☐ Y ☐ N

If yes, please attach a copy of the policy.

9. Please use the remainder of this page, and the reverse side if necessary, to make comments about your institution's experiences in dealing with learning disabled students.

optometry schools in the United States with a letter that explained the purpose of the survey. A copy of the letter and the survey form was enclosed with a second letter to the dean or president of each school. As far as the authors could ascertain, there had been no previous attempt to establish the degree of compliance with ADA and Section 504 in the schools and colleges of optometry. The responses from fifteen schools were received and recorded in a timely manner. Two schools failed to complete the questionnaire.

## Data Analysis

The data were sorted using a Lotus 1-2-3 spreadsheet program. Since not every question was answered by each respondent, the totals for each of the comparisons are not consistent. Cross-tabulation was an effective way

to analyze the data. It simultaneously reported the data and yielded critical comparisons concerning the consistencies and the inconsistencies of complying with Section 504 based on the respective responses for each question (See Table 1).

## Results

The first two questions in the survey addressed the application process and the interview policy of the admissions committee. Specifically, the attempt to obtain information about learning disabilities from applicants was compared with revealing this information to the admissions committee. The review of Section 504 noted that schools are prohibited from inquiring whether an individual has a "hidden handicap" such as learning disability, and it is inappropriate to pass this knowledge on to

**TABLE 1.**  
**Results of Survey of Schools and Colleges of Optometry with**  
**Regard to Their Policies and Practices Concerning Learning**  
**Disabled Students**

ITEM	PUBLIC INSTITUTIONS (N=8)		PRIVATE INSTITUTIONS (N=7)	
	YES	NO	YES	NO
Information elicited in appl. process	1	7	3	4
Information revealed to admiss. comm.	4	4	3	4
Academic svcs. available	8	0	6	1
Accommodation in testing	6	1	5	2
Accommodation in classroom (courses)	4	2	4	3
Use of tape recorders	8	0	7	0
Accommodation in clinics	4	3	1	4
Has a policy re. Sect. 504	7	1	5	2

the admissions committee, even if it is available. Still, four of 15 schools (27%) specifically request this information, three of which reveal it to the admissions committee. Among the eleven schools that do not request the information, four (36%) provide this knowledge, when available, to the admissions committee and 64% withhold it.

More than half of the schools made some accommodations for learning disabled students both in the classroom (courses) and in testing. Eight of the 13 schools (62%) that responded to these questions make some provisions for learning disabled students in the classroom, and 10 of the 13 schools (77%) make accommodations in testing. Of the schools that make special arrangements in the classroom, 7 of 8 (88%) also have special provisions for testing. Overall, 7 of the 13 schools, about half, make accommodations in both classroom

and testing. A small number, 2 of 13 schools (15%), do not provide special assistance in either the classroom or testing.

Special provisions in clinic and testing were then compared. Less than half, 5 of 12 schools (42%), provide special monitoring in the clinic, while 9 of 12 schools (75%) provide extended time in testing. Of the 9 schools that make accommodations in testing, 5 (56%) reported that they also make provisions for supplementary support in the clinic. Only 3 of 12 schools (25%) indicated that they make no accommodations in either testing or clinic.

Accommodations in the clinic were also compared with accommodations in the classroom. Of the 11 schools that responded to this question, 7 (64%) reported that accommodations are made in the classroom. Three of the 7 (43%) also provide assistance in the clinic. Overall, 42% of the schools

reported that they make accommodations in the clinic. Three of 11 schools (27%) offer no supplementary help in either clinic or classroom.

The next three comparisons match the presence or absence of a Section 504 policy with accommodations in testing, the classroom and the clinic. Twelve of 15 schools (80%) reported that they had a Section 504 policy. Of those schools that have a Section 504 policy, 73% (8 of 11) grant additional time for testing, 60% (6 of 10) make accommodations in the classroom, but just 44% (4 of 9) provide extra support for learning disabled students in clinic. All three of the "no policy" schools indicated that special accommodations in testing are provided; two out of three provide special aid in the classroom; and one out of three grants additional support in the clinic.

## Discussion

Judicial decisions have stressed that in order for a person to be considered "otherwise qualified" and therefore entitled to the protection of Section 504, the individual must be able to meet the program's requirements in spite of the handicap. The United States Supreme Court indicated that while refusal to make some modifications or adjustments might constitute illegal discrimination, substantial modifications or fundamental alterations of a program were not required under Section 504. The gist of the regulation is that the school or college is expected to make *reasonable accommodations*.<sup>6</sup> Although requiring that the student demonstrate competency in essential academic and clinical courses is not discriminatory, a change in the length of time permitted for the completion of degree requirements may be an expected program modification. The need for extra test time for learning disabled persons (and other handicapped individuals) has become an accepted procedure by all major test services and should be extended to examinations given in the classroom. A test is supposed to measure ability, but if the test is too long for the learning disabled student to complete in the allotted time, the test may not even closely reflect such abilities.<sup>5</sup> The National Board of Examiners in Optometry, as well as other professional licensing boards, meet the current legal requirements by extending the examination periods and granting other reasonable



accommodations for the candidate who has provided the board with the appropriate certification. This is done without compromising the standards for licensing.

Other classroom accommodations such as student use of tape recorders and transcripts of class lectures are already commonly used to help students who have note taking and verbal organization difficulties. Additional examples of special arrangements currently in use are make-up exams when a student or family member is ill and extended deadlines for term papers. Unless an institution is prepared to eliminate all non-standard accommodations, especially with regard to classroom testing, faculty members who refuse to allow reasonable accommodations may find themselves or their institutions under attack for violating Section 504.

Some learning disabled students need to be taught learning strategies to compensate for their disability.<sup>7</sup> Taking notes is a prime example since often they cannot write effectively or remember and organize the information while listening to a lecture ("I can't hear so fast!"). These learning skills can be taught using videotaped lectures (e.g., anatomy, ocular pathology) that are usually available in the library. Since we are dealing with motivated college graduates, most students learn these skills readily. The inability to process and organize language rapidly also impairs the learning disabled student's ability to perform efficiently in the clinic where accomplishing the educational objectives is more complex. They may require one-on-one supervision in order for the preceptor to provide the necessary support, since the student must draw upon a myriad of academic concepts and apply them to verbal responses of the patient while performing various fine motor operations.

Tutors, often drawn from more advanced classmates, should be available to provide support in academic and clinical courses. In some instances, the same individual may fill more than one role. The student affairs office should provide counseling as needed. Because of the extra stress, learning disabled students frequently are disorganized and somewhat hyperactive. The counselor serves as the student's coordinator, and, at the same time provides ego support. Overall, the education of the

learning disabled student must be somewhat more personal than we are accustomed to offer, albeit with modifications determined on a case-by-case basis.

## Summary

The data that has been presented suggests that the schools and colleges of optometry are not providing a level playing field for their learning disabled students. Although 80% of the schools reported that they have a policy, the implementation of Section 504 is very uneven. The most flagrant oversights appear in clinical education, the very area where the learning disabled student is most vulnerable.

## Recommendations

1. Each school and college of optometry should comply with all of the relevant legal requirements including statutes, regulations and judicial interpretations. The fact that Section 504 of the Rehabilitation Act has been in effect for so long and covers most major issues relating to colleges will probably mean that the ADA will not have a major substantive impact.<sup>8</sup> Not conforming to the obligations set forth in Public Law 93-112 could result in a cessation of all federal financial assistance normally received by the offending school plus additional penalties as prescribed by law.

2. The Council on Optometric Education (COE) of the American Optometric Association should require that all schools and colleges of optometry provide a Section 504 policy statement as part of their accrediting documents and offer concrete evidence that the policy is being implemented.

3. Each optometric institution should review the efforts being made at present to make reasonable accommodations for handicapped individuals. Special accommodations are helpful for all students, but especially so for learning disabled students. For example: a. The instructor should provide concrete examples to illustrate subtle points. b. The students may require a course syllabus and outlines to lectures with a list of new terms. c. The students should have access to audio tapes and transcripts of lectures. d. Available services should also include a note-taking course (about 6 hours) using video lectures. e. Time extension should be

granted on examinations and on written assignments where there are significant demands for reading and writing skills. f. More individual supervision should be provided along with time to complete the assignment in methods laboratories and clinics.

4. The inconsistencies observed in this survey suggest that the decision to adopt or not to adopt a policy with respect to Section 504 has not always been communicated to those who are responsible for implementing the policy. A plan of action to eliminate discrimination and to realize the fulfillment of our legal, educational and social responsibilities should be developed and set in motion without delay. □

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# The Optometry Program At Universidad Autonoma De La Laguna, Mexico

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## Abstract

*The professional status of optometry in Mexico is unlike that in the United States. Optometry is still in a developmental phase where revision of curriculums by optometric institutions and affirmative government action must be implemented in order for optometry to evolve in Mexico from the current situation.*

*The current program at Universidad Autonoma de la Laguna evolved from the previously established optometry curriculum at Universidad del Tajito. The program is part of the College of Science and Humanities. It is the only Mexican optometric program that currently extends over five years. The diversity within the program and the strong basic science background provide elements for the change of the profession in Mexico.*

**Key Words:** international optometry, Mexican optometry, optometric curriculum, optometric education.

## Introduction

Optometric education in the United States has changed drastically during the last ten years. In Mexico, one optometry program has ventured into curricular changes that may prove beneficial to the development of optometry in this nation.

Universidad Autonoma de la Laguna (UAL), a private higher education institution, recently developed an innovative optometry program in Mexico. Established in 1989, the curriculum was developed from the old optometry program at the Universidad del Tajito (UT), Torreon, that reorganized as the current UAL. The UT has had the previous curriculum since being founded in 1982. Although facilities and personnel remained very similar, the goals and missions were redefined, and a new program was developed in all major areas. One of the areas that changed

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drastically was the optometric curriculum.

The progression from the old curriculum consisted of the development of a new five-year optometry program that is part of the College of Sciences and Humanities (Colegio de Ciencias y Humanidades). This college division manages and offers degrees in computer sciences, industrial & systems engineering, administrative engineering, civil engineering, architecture and accounting as well as in optometry.

In addition to the UAL, there are five other Mexican institutions that offer optometric curriculums as part of university programs. These institutions are the Instituto Politecnico Nacional (IPN) at Distrito Federal, Universidad Autonoma de Aguascalientes, Universidad Autonoma at Ciudad Juarez, Centro de Estudios Universitarios at Baja California, and the Universidad Nacional Autonoma at Tlanepantia. These are all four-year programs with the exception of Aguascalientes which has a 4.5 year program. These colleges are government managed, state-funded programs.

## Faculty

The faculty at UAL school of optometry is composed of two full-time professors and twenty-eight part-time faculty; one of the full-time professors acts as the dean of optometry. The dean is responsible for administering and coordinating both the academic and clinical aspects of the program. The second full-time position is the director of clinics who is in charge of developing and supervising the clinical program and the appropriate administrative work.

The part-time faculty consists of individuals who are diverse in educational background. About 80 percent of the twenty-eight part-time faculty members are local optometrists who are committed to improving optometric education. Other faculty members include teachers with masters and Ph.D. degrees and medical doctors with specialties in ophthalmology and surgery who teach within their area of expertise.

All faculty members are graduates from optometric or medical programs in Mexico; two optometrists have received further training in the form of clinical externships in the United States.

## Education

UAL offers the only five-year program in Mexico, presently consisting of ten semesters (Table 1). The traditional four-year program is exemplified by the Instituto Politecnico Nacional which is affiliated to a school of Medicine in Mexico (Table 2). The new curriculum at UAL was developed with help from Dr. Ian Berger of the University of Houston College of Optometry.

Admission to UAL is limited due to the program's clinical facilities. Classes usually consist of twelve to thirteen students admitted each year from a pool of fifty applicants. Students, as in other schools, enter directly into the optometric program after completing two requirements for admission. The first is a "bachillerato" or a degree equivalent to high school level education in the United States. The second criteria is an admissions test administered by the school to screen candidates for professional studies. This last requisite establishes the UAL program as more selective than any other Mexican optometry program.

Each semester consists of sixteen weeks in which students attend academic lectures and laboratory workshops during the morning hours with afternoons dedicated to clinical education at the school's clinical facilities.

An intensive two-hour-a-day, five-day-a-week lecture series is given for each of the two classes that run parallel in two morning sessions. Forty (40) hours of lecture material are then covered for each class, in a four-week time span during which written and oral examinations are administered. These exams intensively cover all lecture material in a twenty-day interval followed by the next lecture series.

The academic load is well designed where concepts learned are used for the next semester courses. The first year at UAL is designed to provide abilities required to attain a basic knowledge in the health sciences field. Its composition is similar to basic prerequisite courses required for admission to U.S. optometry schools plus courses in neuroanatomy and neurophysiology.

The second year is designed to acquaint students with basic science courses as well as courses in optometric instrumentation, procedures and contact lenses. Here the students are being prepared to enter clinical prac-

**First Semester**  
mathematics  
professional abilities  
cellular biology  
human anatomy  
introduction to optometry  
physical optics

**Second Semester**  
general psychology  
professional abilities  
molecular biology  
neuroanatomy  
neurophysiology  
embryology  
geometrical optics

**Third Semester**  
professional abilities  
biochemistry  
ocular anatomy  
neuro-ophthalmology  
histology  
instrumental optics  
binocular vision

**Fourth Semester**  
medical-legal issues  
microbiology  
pharmacology  
ocular physiology  
genetics  
instrumental optics  
contact lenses

**Fifth Semester**  
computer lab  
biostatistics  
research methods  
ocular pathology  
physiological optics  
ophthalmic optics  
contact lenses

**Sixth Semester**  
computer lab  
ocular pathology  
physiological optics  
epidemiology  
ophthalmic optics  
refraction clinic  
contact lens clinic

**Seventh Semester**  
computer lab  
health services administration  
ocular pathology  
endocrinology  
orthoptics clinic  
refraction clinic  
contact lens clinic

**Eighth Semester**  
computer lab  
immunology  
optometric research seminar  
orthoptics clinic  
refraction clinic  
contact lens clinic  
pathology clinic

**Ninth Semester**  
computer lab  
thesis  
pediatric clinic  
low vision clinic  
pathology clinic  
orthoptics clinic  
refraction clinic

**Tenth Semester**  
computer lab  
thesis  
environmental optometry  
clinical emergencies  
geriatric clinic  
low vision clinic  
pathology clinic

tice, and more detailed courses are offered.

Students enter their clinic practice by the second semester of the third year. Emphasis is placed on the performance of clinical procedures, diagnosis and specialty clinics. Courses on research and computers are an integral part of the curriculum.

The approximate cost of attending the program is \$1,400.00 U.S. dollars for every semester, and tuition pro-

vides the only source of income to the program. Very little financial aid is received by students, but there are a number of students who receive tuition waivers for their academic performance. For students who demonstrate financial need, the "becario" program is provided as a work/study program where the student pays his or her tuition by working for the school in proportion to the scholarship amount.

**TABLE 1**  
**Curriculum**  
**Universidad Autonoma**  
**De La Laguna**  
**School of Optometry**



**TABLE 2**  
**Curriculum**  
**Instituto Politecnico Nacional (I.P.N.)**  
**School of Optometry**

<b>First Semester</b> social optometry geometrical optics with lab biochemistry public health ophthalmic optics with lab morphology with lab applied math	<b>Second Semester</b> physical optics with lab microbiology, bacteriology biostatistics applied psychology ocular refraction human physiology human physiology ophthalmic optics with lab
<b>Third Semester</b> preclinic ocular anatomy with lab ophthalmic optics with lab ocular biochemistry and physiology with lab instrumental optics with lab general pathology with lab	<b>Fourth Semester</b> binocular vision ocular pathology pharmacology physiological optics with lab contact lenses
<b>Fifth Semester</b> anomalies of binocular vision physiological optics with lab contact lenses refraction clinic clinical pathology medical emergencies	<b>Sixth Semester</b> orthoptics clinic visual rehabilitation clinical pathology refraction clinic contact lens clinic physiological optics with lab
<b>Seventh Semester</b> orthoptics clinic contact lens clinic pathology clinic refraction clinic low vision clinic pediatric & geriatric clinic research seminar administration	<b>Eighth Semester</b> orthoptics clinic contact lens clinic pathology clinic refraction clinic low vision clinic research seminar pediatric & geriatric clinic optometry seminar

## Clinical Education

The school of optometry has a clinic located in downtown Torreon. The clinic shares facilities with the law school clinic and the psychology clinic. These clinics also provide public services for the community very much like the clinic of the optometry program.

The optometry clinic works on minimal profit guidelines. Patients are charged a small fee (approximately \$2.50 U.S. dollars) for their eye exam. Glasses are dispensed free of charge if the prescription is available from a stock of used glasses donated to the school by other optometry programs such as those at University of Houston and Inter American University. Patients are charged a

small dispensing fee if there is a need for laboratory processing for a non-available prescription.

Students start their clinic exposure after the fifth semester. Only seven students are assigned simultaneously to clinical work. Clinic physical facilities include five examination lanes, one optical laboratory where the glasses prescribed by the interns during examinations are fabricated and one refracting lane that serves as the contact lens clinic. Here the students are exposed to refraction, pathology and optical work in the optical shop laboratory.

The clinical faculty is composed of three persons: one clinical supervisor, one specialty clinic supervisor and one attending optician who is responsible for the optical laboratory. There

are currently only two full-time clinical faculty members, one of whom is an ophthalmologist who also acts as the clinic director for the program. The part-time faculty is composed of optometrists who devote their teaching time to contact lenses, vision therapy and supervision of refractive work. Both low vision and vision therapy clinics are currently under development and will grow as the optometry program develops.

During the afternoons there are two clinic sessions that rotate seven students to each session. All seven students are required to work within the clinic settings at different chores, with each session rotation taking place in a three-hour interval.

Students are placed according to work requirements in the clinic. Four students are assigned to examine an average of four patients, each in their primary care clinical setting. Two students tend the optical laboratory under the supervision of a properly trained optician. At the finishing lab, the glasses that are distributed to patients examined at the clinic are prepared by students. One student is then positioned at the reception area and is responsible for clerical functions as well as dispensing and adjusting eyewear for the patients as they finish being examined.

A student completes a total of three hundred twelve (312) hours of clinic work before graduation, during which period he or she will see an average of 840 patients. Clinical rotations are composed of assignments where the student is rotated once a week to various clinic rotations.

Thirteen assignments per semester are divided into four-hour clinic sessions. Students complete 52 hours of general refraction clinic in a semester, during which period they see an average of four patients every session. The assigned laboratory work constitutes another 40 hours per semester that, together with 40 hours of clerical and dispensing work, constitutes the non-refraction clinic. Speciality clinics are assigned within the general refraction clinic time where one student attends with a faculty member for direct supervision.

## Visiting Lecturers

Visiting lecturers are part of the faculty expansion program at UAL. Professors are appointed for a period of time according to the courses they are qualified to teach. The use of visit-

ing lecturers assures that the program is current. It also helps the development of optometry in Mexico through influence from other schools of optometry.

### Professional Status

Upon completion of the program the student receives the degree of "Licenciado Optometrista," the termi-

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*For the optometry profession to evolve in Mexico, it is essential for organized academic programs to expand their curriculum.*

nal degree for the optometric profession in Mexico.

Unlike the United States model of health care delivery, Mexican optometry has no jurisdictional or government regulatory agencies that establish, regulate and oversee the standards by which the profession is practiced. This is also the case for other health care professions such as medicine and dentistry.

### Conclusion

The Universidad Autonoma offers its graduates a more comprehensive curriculum than the traditional optometric curriculum. But commitment from outside sources is needed for the profession and optometry programs to survive.

Optometric, medical and dental programs are regulated by the Secretary of Public Education, but unlike medical doctors or dental surgeons, optometrists do not require a license from the Secretary of Health to

practice. The total number of students graduating annually from optometry programs is less than 400, while the population of Mexico exceeds 80 million people. Optometry schools are obviously not able to cope with the tremendous need for optometrists in Mexico.

Optometry programs offer formal education in a science that has been, and still is, practiced mostly by informally educated individuals. Both opticianry and optometry have been regarded traditionally as learned crafts, taught from father to son without the need for a formal education or a degree. It has only been in recent years that Mexican optometry has earned respect by means of the formally trained individuals and the development of optometry.

Due to the traditions associated with the practice of optometry, opticianry and the lack of governmental regulation, it is difficult for the Mexican population to view the "optometrista" as a formally educated individual. These two factors have been a major drawback for proper development of the optometric profession in Mexico.

For the optometry profession to evolve in Mexico, it is essential for organized academic programs to expand their curriculums. Optometry should be organized within the optometric educational institutions and by the persons responsible for professional education.

It is also essential for the government to reform the politics involving optometry and opticianry and to establish regulatory practice standards for these professions within the country. □

### NAFTA Opens Door to Mexican Schools

The enactment of the North American Free Trade Agreement (NAFTA), which removes barriers to trade investments between Mexico, Canada and the United States, has encouraged an interest in developing stronger relationships with optometry schools in Mexico.

An example of this overture was the visit last year by representatives of six schools to the SUNY State College of Optometry.

"This meeting came at a mutually advantageous time," said Dr. A. Norman Haffner, College President. He added that the purpose of the visit was the exploration of potential clinical and academic affiliations, continuing education programs, including advanced clinical studies and a faculty exchange program.

The Mexican schools represented both public and private universities with schools of optometry ranging in age from one year to 25 years. During their visit, the Mexican optometrists met with clinical, academic and administrative leaders at the College and spent extensive time in the College's University Optometric Center, the clinical facility.

"This visit by the Mexican delegation was the first stepping-stone to an exciting collaborative venture which we believe will be beneficial to our College and to the schools in Mexico," said Dr. Haffner, who left in October for a two-day visit to Mexico. A memorandum of understanding was recently signed between the SUNY College and the National Autonomous University of Mexico and The Autonomous University of Aguascalientes promoting a mutual spirit of cooperation.

# Health Professions Team Building Through Pharmacy, Dentistry, Optometry, and Podiatry: The 1992-93 AACP Argus Commission Report

## Introduction

**A**ACP president, Richard A. Ohvall, requested the Argus Commission to examine the interfaces between academic pharmacy and the educational programs in dentistry, optometry, and podiatric medicine: professions that, in addition to medicine, use medication in the treatment and/or diagnosis of illnesses in their patients. President Ohvall specifically requested the Commission to consider:

- the perceptions and misconceptions/barriers to communications and future opportunities;
- how dentistry, optometry, podiatric medicine, and academic pharmacy can work together for the mutual benefit of society and each other; and
- how to further and nurture a strong liaison between organizations representing academic pharmacy and

academic dentistry, optometry, and podiatry.

## Strategic Intent

All the health professions represented on this year's Argus Commission are involved with major change both as a result of changes occurring in the health care system and as a result of expansions occurring within each health profession. Moreover, these professions are responding to demographic, epidemiologic, economic, and technologic influences occurring in society. The Commission's discussion of these changes, as reflected in each profession representative's description of how his individual profession is expanding, demonstrated the need to address the Commission's deliberations in terms of the strategic intent that results from the application of five principles: (1) shared vision; (2) team building and making; (3) mental model for change; (4) personal mastery/proficiency; and (5) system thinking. The Commission conducted its discussion in these terms, and they are reflected in its report.

The Commission developed its shared vision that each profession

should bring its unique expertise for enhancement of patient care. That expertise would derive from the science particular to that profession. For example, pharmacy would bring expertise based on the pharmaceutical sciences, dentistry the dental sciences, and optometry the vision sciences. The Commission envisions a health care team built upon functional performance of each member that is based primarily upon the knowledge and skills of the practitioner, rather than upon arbitrary distinctions of privilege driven by statute or tradition.

The Commission's vision is of a health care team—a primary health care team that combines the expertise of each of its members for the benefit of the patients it serves. Such teams exist in some institutionalized settings and in federal programs (e.g. Public Health Service Hospitals); they are developing in managed care environments. Unfortunately, little incentives exist to form primary care teams in the independent, fee-for-service, ambulatory setting. Indeed, substantial negative incentives exist in this environment for the effective formation and functioning of the primary care health team including lack of effective compensation mechanisms and interprofessional competition.

## Expanding Scope of Health Professions

Each of the health professions represented on the 1992-93 Argus Commission is expanding its scope of practice. Pharmacy is expanding its scope generally because of its drug use focus that crosses all organ system categories in health care. Dentistry, optometry, and podiatric medicine are expanding their scopes of practice specifically with regard to the organ systems related to the profession. However, the same demographic, epidemiologic, societal, technologic, and economic factors that are influencing pharmacy practice and education are affecting dentistry, optometry, and podiatric medicine, and these professions are responding in their own ways to deal with these forces.

Appendix A contains a brief description of the history and plans for the future of dentistry, optometry, and podiatric medicine.

The pharmacist members of the Commission briefed the dentist, optometrist, and podiatrist members about the expanding role of pharma-

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cists in health care and the philosophy of pharmaceutical care. There was general acceptance that pharmacists could contribute to patient welfare by joining their expertise in therapeutics with the expertise of dentists, optometrists, and podiatrists.

Dentistry and podiatric medicine have had prescribing authority in all 50 state practice acts for some time. Optometry recently secured the authority to use medications diagnostically, and 32 states currently permit optometrists to use medications to treat ocular diseases (therapeutic privileges). Moreover, optometry is in the midst of a major, legislative campaign to secure therapeutic privileges in all states.

Dentists, optometrists, and podiatrists routinely use medications in the treatment of their patients. Given the many inherent problems associated with the drug use process, especially when patients self-medicate or are treated with medicines by the variety of other health professionals (such as allopathic and osteopathic physicians, nurse practitioners and physician assistants), it becomes evident that pharmacists, as the major health professional responsible for the drug-use process, must interact with all prescribing health professionals for the benefit of their patients. Clearly, preparation for this interaction must begin during the health professionals' formative professional education.

Moreover, pharmacists are frequently consulted for self-care advice by patients who self-diagnose illness associated with those organ systems of concern to dentistry, optometry, and podiatric medicine. Pharmacists' responsibilities and obligations to these patients and the drug-use process include referring patients for professional care if, in pharmacists' professional opinions, patients have conditions requiring professional care, or if for other reasons, patients cannot safely self-medicate.

## Primary Care in Practice

Dentistry and optometry are primary care professions. Podiatric medicine is predominantly a surgical profession, having only recently recognized a specialty in primary care podiatry. Practitioners of primary care serve as entry points into the health care system. Frequently, dentists, optometrists, and podiatrists detect signs and symptoms of systemic illnesses that manifest them-

selves in the mouth, eyes, or lower extremities. In such cases, these professionals frequently refer their patients to appropriate generalist or specialist practitioners for treatment and management of the systemic illnesses, while the primary care practitioners continue to manage patients with regard to the manifestations of the illnesses in the pertinent organ systems.

Pharmacy is also a primary care profession. However, because pharmacists do not have sufficient education, training, or authority to diagnose illnesses in patients, pharmacists' primary care practice is different from medicine, dentistry, optometry, or podiatric medicine. Pharmacists provide primary care in several ways. First, in their role as advisors to patients regarding self diagnosis and self care, pharmacists ensure that medication selected for these patients is appropriate. Alternatively, pharmacists may discourage self-medication and refer patients to appropriate practitioners for diagnosis and treatment. Secondly, pharmacists provide primary care in collaboration with other primary care practitioners and specialists when pharmacists coordinate and manage drug therapies of patients cared for by these practitioners. Typically, patients are under the care of multiple health care providers who may be using pharmacotherapy in their patients. Consequently, primary care becomes a necessary component of pharmaceutical care.

While much has been written concerning the potential value of primary health care, too much focus has been placed on individual primary health care professions and too little attention has been placed on the integration of the primary health care team. While there are excellent examples of the primary health care team functioning for the benefit of patients, such examples are the exception, and the true value of the primary health care team is yet to be achieved. However, this does not mean that efforts to improve the team should be abandoned or that pharmacists' attempts to become a recognized and contributing member of the team should cease. Indeed, the recent acceptance of pharmaceutical care as the philosophy of pharmacy practice establishes the profession's intentions and places the onus squarely on the shoulders of pharmacists to become

active members of the primary health care team.

## Professional Education

*Clinical Education and Training* — One reason why the primary health care team exists more in concept than in reality is that primary health care teams do not exist in sufficient quantity and quality in professional education and training environments. While all health professions schools include clinical training in their professional curriculums, too little attention is given to integrating and highlighting the contributions that other health professionals provide to patient care. Consequently, the possibility of developing dialogue and relationships at an early stage of professional life is too-seldom achieved. There have been notable demonstration projects in which students of various professions receive training and education in collaborative patient care environments. Sadly, many such projects ended when project funding expired.

More effort is needed in health professions education to place students in clinical training environments in which they interact equally and professionally with the students and practitioners of other health care professions. Education, training, and skill development is needed to prepare practitioners to know and to understand the contribution of other professionals to health care and to develop communication with other professionals and patients. Such communication experience must include the freedom and ability to dissent from as well as agree with and implement conclusions of the team.

Pharmacy students need experience in referring patients to dentists, optometrists, allopathic/osteopathic physicians, and podiatrists. Students of these latter professions need experience in collaborating with pharmacists in patient care, especially the care of patients at risk—elderly patients with multiple chronic illnesses who are being treated by multiple providers using potent medications, and who treat themselves with non-prescription medication.

Administrators and faculty in schools of dentistry, optometry, pharmacy, and podiatric medicine must make efforts to ensure that their students integrate their clinical training with students of other health professions. Clinical rounds should include



an array of health professional students. Clinical training objectives for pharmacy students should include teaching pharmacotherapy to dental, optometric, and podiatric students; and pharmacy students should learn about nontherapeutic patient care provided by these other health professions by spending time in their clinics or rounds.

Because the importance of pharmacotherapy in patient care (in terms of its effectiveness, risk, and cost), schools and colleges of dentistry, optometry, and podiatric medicine should consider placing pharmacists in their outpatient and inpatient teaching clinics.

*Sharing Resources* — The financial difficulties affecting higher education are influencing schools and colleges of dentistry, optometry, pharmacy, and podiatric medicine. These pressures are not expected to subside in the short term. Sharing of educational resources (equipment, faculty, library, and teaching tools) is a logical and necessary outcome of these financial pressures. While sharing of resources may occur to a limited extent in university and academic health science center settings, it is virtually absent in those situations in which health professional schools exist as free standing private institutions. However, in many cases, these private institutions exist in communities with other private, free standing institutions or universities. The Argus Commission encourages resource sharing among and within universities, among university-affiliated schools and colleges, and among university-affiliated schools and free standing health professional schools.

*Educational Outcomes* — Health professional schools are initiating programs to define and ensure quality in their educational programs as one method of fulfilling their accountability to students, government, and society. Accrediting agencies in the health professions are developing and applying standards that expect accredited educational programs to define, use, and assess educational and programmatic outcomes. There are a considerable number of student outcomes that are common across all health professions. The Professional Preparation Network<sup>1</sup> at the University of Michigan developed ten outcomes as exemplifying an educated professional. These include thinking abilities, communications abilities, facility with values and ethical

principles, personal awareness and social responsibility, self learning abilities, social interaction and citizenship, problem solving, management, and education skills. AACP's Commission to Implement Change in Pharmaceutical Education depended heavily on these educational outcomes in the preparation of its Background Paper II.<sup>2</sup> Further, the 1992 AACP House of Delegates affirmed them and recommended that they become components of accreditation standards.<sup>3</sup>

The AACP Focus Group on the Liberalization of the Professional Curriculum is defining each outcome at three stages of development in the professional curriculum.<sup>4</sup> Further, it is developing instructional/educational strategies that will allow each school or college, its faculty, and the individual student to assess the development of these outcomes.

Because these outcomes are common across health professional disciplines, it follows that the schools of the health professions should consider adopting a set of these outcomes that are applicable to all health professions. Moreover, it becomes obvious that the mechanisms of defining, assessing, and using outcome data for program enhancement will be very similar in the health professional schools. The accrediting bodies in pharmacy and optometry along with their respective school associations (AACP and the Association of Schools and Colleges of Optometry) are examining ways in which they may collaborate in a project to develop guidelines for use by accrediting agencies and individual schools.

*Educational Process and Methodology* — Many who have examined the outcomes necessary to prepare a student to enter practice conclude that changes will be required in how students are taught in the professional curriculum.<sup>2</sup> Just as outcomes will be similar across health professions, educational methodology is also be similar. Schools and colleges in dentistry, optometry, pharmacy, and podiatric medicine should collaborate to encourage and execute educational change, test educational methods, and evaluate their results. AACP should join with the American Association of Dental Schools, the Association of Schools and Colleges of Optometry, and the American Association of Colleges of Podiatric Medicine to share ideas, projects, successes, and failures. A number of

pharmacy schools are enacting comprehensive curriculum changes with major changes in educational methodology. Their experience may be valuable to dental, optometric, or podiatric schools. Moreover, faculties in these schools may have experiences that would benefit pharmacy. The current shortfall in educational funding locally and nationally should not become a deterrent to effect educational change.

## Interprofessional Issues

Interprofessional interaction among dentists, optometrists, pharmacists, and podiatrists is minimal locally, statewide, regionally, and nationally. If collaboration among health care professionals in patient care is desirable, then interprofessional dialogue among organizations representing these professionals is equally desirable. Schools and colleges of dentistry, optometry, pharmacy, and podiatric medicine should develop interprofessional councils in their cities, states or regions with the purpose to identify, discuss, and resolve issues germane to health care and to the professions. The current national discussion on national health reform should provide ample topics for discussions.

Joint professional continuing education programs should be conducted and explored as vehicles to share therapeutic, diagnostic, and patient care information and provide a forum for interprofessional discussion on major issues.

Nationally, the schools of the health professions are joined together in a coalition, the Federation of Associations of Schools of the Health Professions (FASHP). This coalition has functioned largely to influence national legislation, although it has examined other issues such as outcomes assessments. FASHP should bring together all the national health professional organizations to discuss major health care issues. The Argus Commission recognizes that it may not be possible to secure the participation of all national organizations representing the health professions. However, it may be possible to organize one or more conferences of the American Dental Association, the American Optometric Association, the American Pharmaceutical Association, and the American Podiatric Medical Association. Because pharmacotherapy is one

treatment methodology that is used by all these professions, it would seem appropriate that the issue discussed at the first of these meetings is the crisis in health care brought about by the inappropriate use of pharmacotherapy by patients and practitioners.

Because pharmacotherapy is assuming a greater role in dentistry, optometry, and podiatric medicine, these professions should begin to examine ways to enhance practitioners' use of pharmacotherapy for the benefit of their patients. Each national professional association representing dentistry, optometry, and podiatric medicine should appoint a committee or panel consisting of pharmacists and practitioners from the pertinent profession to render advice on pharmacotherapy specific for that profession. This advice could be in the form of published monographs, educational programs, and statements on pharmacotherapeutic issues of concern to the profession. If such a desire exists among these organizations, AACP should be prepared to recommend pharmacists with appropriate expertise to serve on these panels.

## Recommendations

1. Schools and colleges of pharmacy should join with schools and colleges of dentistry, optometry, and podiatric medicine to seek ways to establish interprofessional health care teams of faculty, practitioners, and students for the purpose of teaching pharmacotherapy and therapeutics to dental, optometric, pharmacy, podiatric medical, and other health professional students.
2. Schools and colleges of pharmacy should join with schools and colleges of dentistry, optometry, and podiatric medicine to develop mechanisms to integrate pharmacists into their teaching teams and programs.
3. AACP should join with the American Association of Dental Schools, the Association of Schools and Colleges of Optometry, and the Association of Colleges of Podiatric Medicine to develop assessment strategies that may be used by all schools to evaluate their programmatic and educational outcomes.
4. Professional organizations representing the dental, optometric, and podiatric professions should estab-

lish committees consisting of pharmacists and practitioners from within and outside of the pertinent profession to advise the profession on pharmacotherapy and related issues.

5. Professional organizations representing the dental, optometric, pharmacy, and podiatric professions should join together to stimulate the development of local, state, and regional meetings of their respective professional societies for the purpose of producing joint professional continuing education and discussing issues of mutual concern, such as national health reform.

### Commission Members:

Nicholas G. Popovich, chair (Purdue)  
John A. Biles (Southern California)  
William H. Campbell (North Carolina-Chapel Hill)  
Henri R. Manasse, Jr. (Illinois at Chicago)  
William A. Miller (Medical University of South Carolina)

### Liaison Members:

Chester A. Evans (Barry University of Podiatric Medicine)  
Thomas L. Lewis (Pennsylvania College of Optometry)  
Richard R. Ranney (Baltimore College of Dental Surgery/Dental School)

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## Appendix A

### Dentistry

The dental profession is examining its scope of practice as it has experienced results of demographic and other changes that influence demand for dental services. Moreover, the

profession has experienced serious and substantial manpower concerns in recent times.

Health manpower legislation was enacted in the early 1970's from the perception that there was a shortage of health care providers, including dentists. Federal funds were made available to expand dental education in terms of opening new schools and expanding existing classes. These changes were occurring in the midst of successful public health measures supported by the dental profession that included patient education and fluoridation. The resulting decrease in caries coupled with the increasing manpower supply of dentists created manpower chaos in the profession beginning in the late 1970s. Beginning in 1975, application to dental schools began to decline. First year enrollment in dental schools peaked in 1978, and total enrollment has declined ever since. Over a period of six years, six dental schools announced closure. The decline in total enrollment from 1982 to 1992 was equivalent to closing 15 schools of 100 students per class. If enrollment trends remain unchanged, the production rate of dentists in 1995 will be that of 30 years earlier, and by 2000 will be about that experienced during World War II. However, the last three years (for classes entering in 1991, 1992 and 1993) have seen a reversal of applicant numbers, with successive increases in each of those years. This may allow stabilization of production at about the 1970 level, or at about the rate of production that was occurring before the 20+ year perturbation produced by federal legislation.

During the period of declining enrollment, dental education began to examine seriously those factors that were operating to influence future demand for dental care. Pressures mounted for expansion of scope of practice beyond the conventional focus on treating caries, repairing teeth, and fitting dentures. Dentists began to spend relatively more of their time in periodontal treatment, preventive and diagnostic services, and functional disorders of the temporomandibular joint. Education and research arms of the profession began concentrating more also on oral cancers, disorders of the salivary glands, taste, and smell. A practical focus on cosmetic dentistry emerged in many practices, and cosmetic and reconstructive surgery of the face and jaws

expanded significantly as a focus of effort in the profession. In part to accommodate the expanded scope of dentistry, considerable support is developing for a mandatory one year postgraduate residency before licensure.

Recently, the American Association of Dental Schools announced that the National Academy of Sciences Institute of Medicine has agreed to undertake a comprehensive study of dental education in the U.S. The one-to-two-year study will seek to develop strategies for dental schools to consider for achieving greater stability within the university or academic health center setting. The study will also suggest ways to prepare future dental providers for the changing needs of the population.

### Optometry

Over the past quarter century, the profession of optometry has dramatically changed its goals and objectives, its scope of practice, its image with in the health care community, and its image with the public. The first practice act for optometry occurred in Minnesota in 1902. Since then, the direction of the profession has moved from one that was focused primarily on the refractive and material aspect of vision care to currently providing full scope primary vision care and certain secondary and tertiary services.

In 1992, the American Optometric Association approved a new definition of optometry. This definition states, "The mission of the profession of optometry is to fulfill the vision and eye care needs of the public through clinical care, research, and education, all of which enhance the quality of life. Doctors of optometry are independent primary health care providers who specialize in the examination, diagnosis, treatment, and management of disease and disorders of the visual system, the eye and associated structures, as well as the diagnosis of related systemic conditions."

The metamorphosis of optometry began in the late 1960s. Optometry realized that it was outside the mainstream of health care delivery, both in the minds of other health care practitioners and the public. Adopting the philosophy of optometrists as primary care practitioners occurred in the early 1970s. This was accompanied by legislative activity which expanded the scope of practice to include the use of pharmaceutical agents for diag-

nostic purposes. In 1971, Rhode Island became the first state to allow the use of drugs by optometrists. Currently, all states and the District of Columbia allow optometrists to use drugs for diagnostic purposes.

In 1976, a major landmark for optometry occurred in West Virginia, which passed legislation expanding the scope of practice to include the treatment of eye disease. Now, 32 states allow optometrists to use pharmaceutical agents to treat specific eye diseases [ed. note: the number has increased to 41 as of February 1995]. The profession of optometry assumes that all 50 states will allow the treatment of eye disease by the end of this decade.

The final step in integrating optometry into the mainstream of health care delivery in the country occurred in 1987 when services provided by optometrists were included for Medicare reimbursement. Currently, optometrists receive equal reimbursement to ophthalmologists for all services that are within the scope of the practice of optometry.

The change in philosophy regarding the direction of optometry, the change in scope of practice to include the diagnosis and treatment of ocular disease, and the inclusion of the profession in Medicare has altered relationships between optometrists and other health care practitioners. Optometrists now work and train in hospitals. They interface daily with pharmacists, internists, neurologists, ophthalmologists, and other health care practitioners. With the advent of lasers, it is assumed that optometry will expand in the future into additional noninvasive modalities to treat conditions of the visual system.

### Podiatry

Podiatric medicine is that health profession concerned with the prevention, diagnosis, and medical and surgical care of diseases and disorders affecting the foot and ankle. Seven colleges of podiatric medicine in the U.S. enroll 2500 students, preparing them to enter the profession of podiatric medicine. Students entering schools of podiatric medicine generally possess a bachelor's degree or higher. The course of study in podiatry is four calendar years consisting of two years of basic science study and two years of clinical education/experience. Graduates receive a Doctor of Podiatric Medicine (D.P.M.) degree. Podiatric medical graduates typically

take one to three years postgraduate education and training in residency programs, generally in Veterans Affairs hospitals.

Doctors of podiatric medicine are licensed in all states to prescribe and administer drugs consistent with the scope of their practices, perform surgery, treat fractures and dislocations, employ and perform diagnostic tests such as x-rays, perform biopsies, and prescribe orthotic and prosthetic devices.

Compared to other health professions, the number of podiatric physicians in the U.S. is relatively small. According to the American Podiatric Medical Association, 13,400 podiatric physicians practice in the U.S. This small number has potential future public health consequences because about 15 percent of all elderly persons report foot or ankle problems that adversely affect their daily lives. The growing population of elderly poses potential problems in ensuring appropriate foot care for this population. Diabetes, arthritis, and neurological disease are conditions that manifest one or more of their symptoms in the lower extremities among the elderly.

Studies show that podiatric medical care is cost effective. For example, the inclusion of foot care by podiatric physicians reduced the incidence of amputation by 24 percent in an Emory University study. Sixty-four percent of all foot surgery is performed by podiatric physicians. Diabetes is associated with more than half of the 125,000 lower limb amputations annually. Appropriate podiatric medical care could reduce the incidence of these amputations and their costs substantially.

Podiatry is considered a surgical profession; its three recognized specialties include surgery, biomechanics, and primary care. The latter, primary care, is the most recently recognized specialty in the profession. □

# Videotape Viewing Behaviors of Second Year Optometry Students

Susan E. Marren, O.D.

## Abstract

Second year optometry students at the Pennsylvania College of Optometry are required to videotape themselves performing two patient examinations in The Eye Institute. To evaluate whether or not the tapes are viewed and the perceived benefit gained by these students who do view them, I surveyed 140 students at the close of their third year just before they left the institution for externship assignments. Ninety-four students returned the survey. Of these, 34% viewed most or all of both tapes, 46% viewed some or all of one, and 20% did not view their tapes at all.

The major perceived benefits of viewing the tapes were an increased awareness of one's presentation to the patient and of one's inefficiencies. Those who did not view their tapes felt that it was unnecessary and redundant; many students mentioned that it was uncomfortable as well. I compared viewing behavior with clinical evaluations and found no significant correlation. Students who viewed their tapes were slightly more likely to do well clinically but the differences were not significant. It would appear from this informal survey that viewing oneself performing patient examinations at this stage in one's education results in personal gains that are not necessarily reflected in clinical evaluations.

**Key Words:** videotaping, interviewing skills, clinical evaluation

## Introduction

In preparation for their third year clinical rotation, second year optometry students at Pennsylvania College of Optometry are required to videotape two patient examinations. The first is of a non-presbyopic patient and excludes the biomicroscopic/ophthalmoscopic health assessments; the second includes the health assessment and patient selection is unrestricted. The rooms designed for this usage have been described previously<sup>1</sup> and are equipped with a camera, microphone, infrared light for dark room filming, and a mirrored window to a small adjoining room in which the instructor views the examination directly and on a monitor while it is being taped.

I learned in chance conversation with some fourth year interns that some interns who I knew to have had difficulty with the clinical program had not viewed their own videotapes. They explained that it was "too uncomfortable" and added secondar-

ily that they knew what mistakes they had made from their discussions with their instructors; thus, viewing the tapes would have been redundant. Concerned by this revelation, I elected to see how prevalent this attitude was.

## Methods

I surveyed the third year class of 140 students at the close of their third year when they would be leaving the institution for externship assignments. To allay doubts about future repercussions, I promised to withhold the results of the questionnaire until after the class had graduated. Participation was strictly voluntary and the forms were designed to take a minimum amount of time. In addition to asking whether or not they viewed their tapes, I asked them to give reasons why they did not view them, to cite the benefits gained if they did view them, and to make suggestions for maximizing the experience. I also asked those who viewed them to rate the value of doing so. The questionnaire is shown in Figure 1.

Surveys were not anonymous; I requested intern numbers so I could cross-reference survey answers with clinical evaluations from the third year. Clinical evaluations are collected from clinical faculty at the end of each quarter. Students are graded on each patient encounter and this information is used in determining quarter grades, but loosely. Following discussion, the director of each module assigns a grade. The possible grades are Honors, Pass Plus, Pass, Weak Pass, and Fail. For calculation purposes, I assigned these grades a value from zero (0) for Fail to four (4) for Honors. The categories in which students are evaluated are history-taking, data gathering, data correlation, formulating diagnoses, formulating management plans, managing ophthalmic materials, patient education, legal-ethical responsibilities, interpersonal relationships, and personal qualities/work habits. The standard by which they are judged is raised each quarter as they are expected to progress. Clearly, this kind of data does not lend itself easily to statistical evaluation. Any correlation found would have to be called descriptive and would require overwhelming evidence.

Dr. Marren is an assistant professor at the Pennsylvania College of Optometry.



## Figure 1

### Questionnaire

PLEASE CIRCLE YOUR RESPONSE.

1. Did you watch A2 videotape? Yes                      No
  
2. Did you watch your A3 videotape? Yes                      No
  
3. If you circled no to any of the above, why did you not watch the tape? (If you circle more than one response, please put an \* by the most important reason.)
  - A. It was too uncomfortable watching myself.
  - B. I don't have a VCR and did not want to watch it where anyone might see me.
  - C. The school's VCR's were never available when I needed them.
  - D. It was not worth the time.
  - E. It might have been worth my time but I didn't have any time.
  - F. Other - please explain
  
4. If you watched your tapes, please indicate for each one how useful the viewing was to you.
 

not useful	extremely useful				
A2	1	2	3	4	5
A3	1	2	3	4	5
A4	1	2	3	4	5
  
5. What particular benefit did you get from watching your videotape(s)?
  
6. What could have made viewing your tape more beneficial?
  
7. How would you rate your level of skill at this time?
 

very low	1	2	3	4	5	very high
----------	---	---	---	---	---	-----------
  
8. How would you rate your level of skill at the time you took your A exams?
 

very low	1	2	3	4	5	very high
----------	---	---	---	---	---	-----------
  
9. How would you rate your self-esteem at this time?
 

very low	1	2	3	4	5	very high
----------	---	---	---	---	---	-----------
  
10. How would you rate your self-esteem at the time of viewing the tapes?
 

very low	1	2	3	4	5	very high
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My TEI intern number is:

## Results

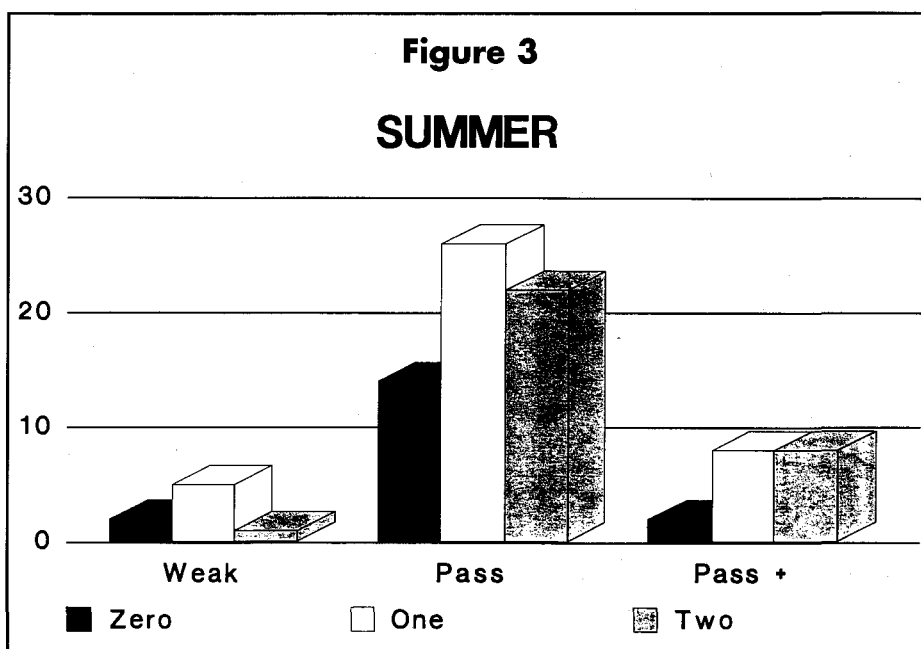
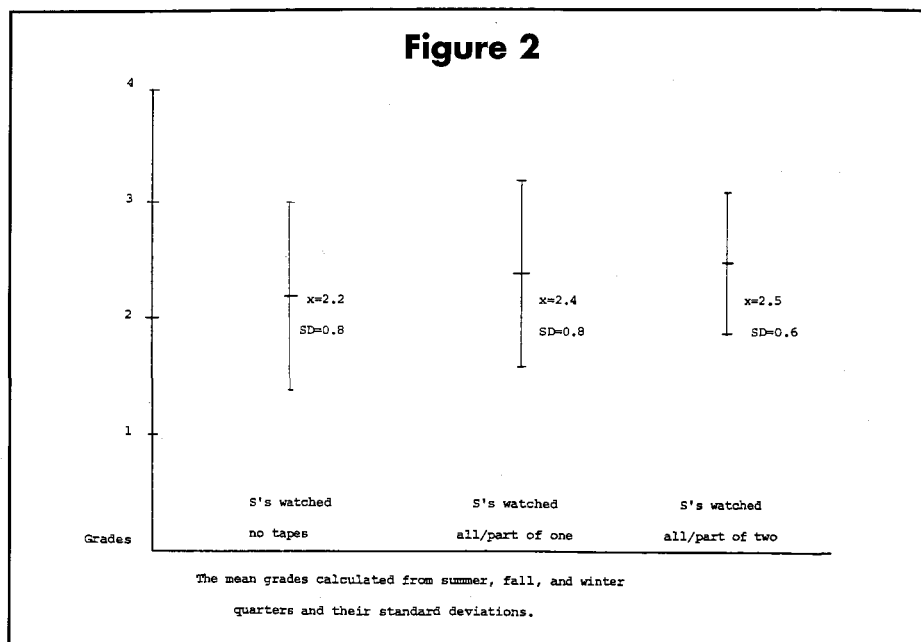
The response was good. Of the 140 students in the class, 94 students returned the survey. Of these returned surveys, 34% reported viewing most or all of both tapes, 46% reported viewing some or all of one, and 20% did not view their tapes at all.

Of the 34% who reported viewing most or all of the tapes, most (70%) rated the experience positively. The average on a scale of 1 to 4 was a 2.9. The most commonly cited benefits gained from viewing related to the students' appreciation of how they appeared to their patients. Picking up on their mistakes, weaknesses, and inefficiencies was also frequently cited as a benefit. Two out of this group reported discomfort watching

*The most commonly cited benefits gained from viewing related to the students' appreciation of how they appeared to their patients.*

themselves on the videos. These most compliant students suggested that recordings of higher quality would enhance their experiences. A few of these students noted that watching the tapes with a staff member or "voice over" comments on the tapes by a staff member would have been helpful. (Note: microphones for voice over commentary were once available.)

Of the 46% who reported viewing all or part of one videotaped examination, the most commonly cited benefit (28%) was observation of how one could be more efficient. Many (16%) also appreciated seeing themselves as their patients saw them. This group valued the viewing experience less than the previous group; the average rating was 2.4. The most commonly cited reason for not watching more of the tapes was that it was not worth the time involved. Only three com-



plained that the poor quality of the tapes made them unviewable but a higher quality recording was the most commonly cited suggestion for improvement (16%). An equal number in this group felt watching with a staff member would enhance their experience.

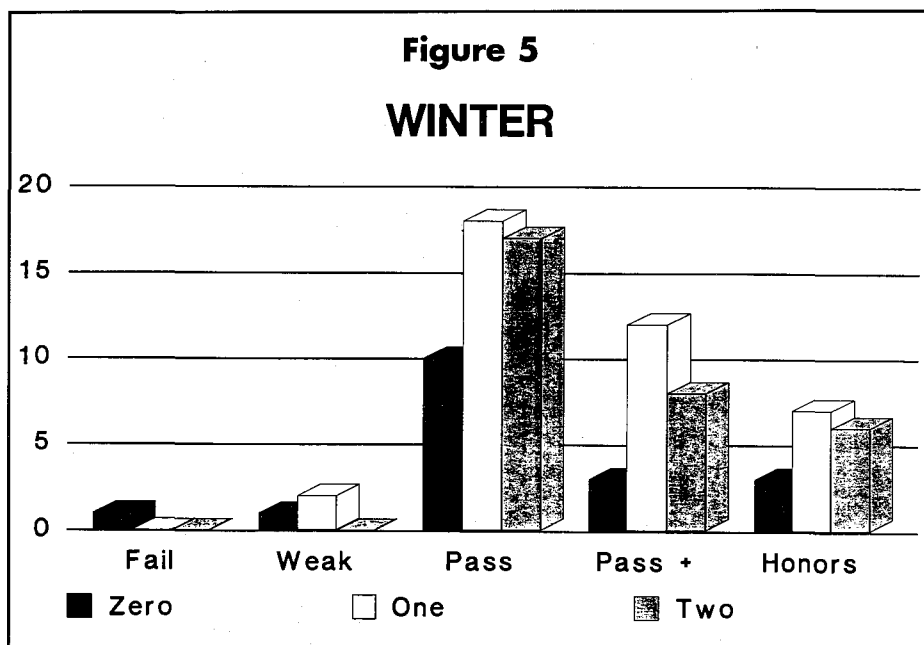
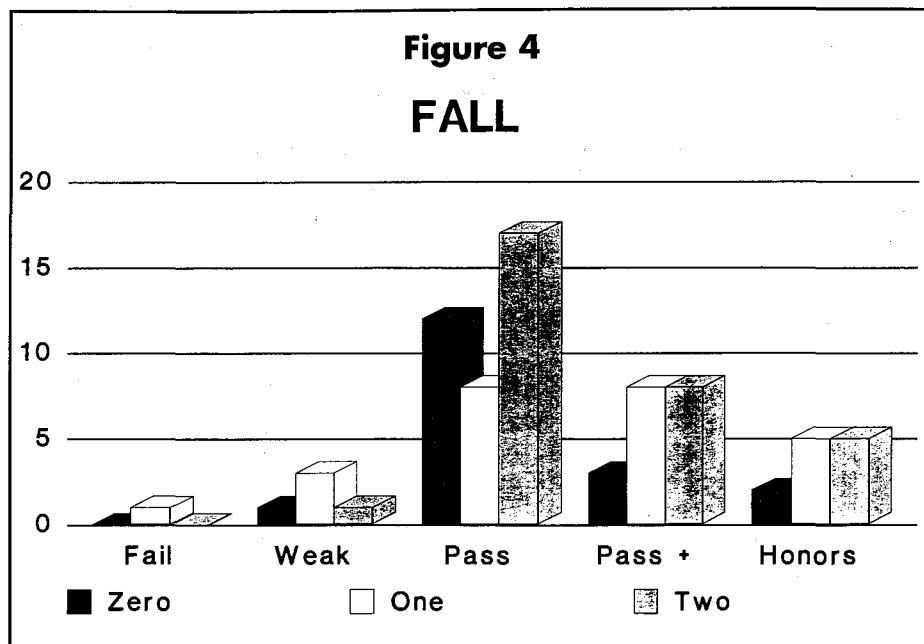
Of the 20% who did not watch any of either tape, 5 out of 19 reported that it was too uncomfortable watching themselves on tape. (26%) The most commonly cited reasons, however, were that the student did not have private access to a videocassette recorder and that it was not worth the time.

There appeared to be a slight trend found in correlating clinical evaluations with videotape viewing behav-

ior when evaluating the means: students who viewed their tapes were slightly more likely to do well clinically. The differences were small and there was a large standard deviation in each group. Figure 2 shows graphically the overlap of the groups. Figures 3, 4, and 5 show the distribution of the clinical scores of the students by quarter. (Spring quarter grades were not available when the data was collected.)

## Discussion

Videotapes have been used to advantage in medical education. Most use of videotaping has been in the area of history-taking and interpersonal skills. (2-18) Videotaping with



feedback and self-observation has been shown to be an effective strategy for teaching interviewing skills.<sup>4,11,13,17</sup> Scheidt, et. al.<sup>17</sup>, 1986, videotaped students in encounters with real pediatric patients. They compared students who viewed and critiqued their own videotapes by themselves with those who viewed their videotapes and were critiqued by a preceptor and found the latter condition to have a significant effect on future performance. Compliance by the students in the first group was assessed by questionnaire and judged to be 97%; however, they showed no improvement in performance. The researchers noted their ambivalence about this discovery of the criticality of the preceptor's feedback.

Previously, Davis and Dans<sup>11</sup> (1981) had explored the effect of videotape replay on the teaching of history-taking skills and found an improvement in student performance following the replay of the videotaped interview. They proposed that this improvement was possibly due to the enhanced student/teacher interaction spurred by the replay of the videotape. In the condition where a preceptor observed the interview and reviewed it with the students, there was significantly more discussion of the process of data collection as compared to a second condition where instructors observed the interview and critiqued without a videotape and a third condition where instructors did not observe the interview live but viewed and cri-

tiqued the videotape with the students. It must be noted that the condition that had the most beneficial effect was that in which the preceptor spent the most *time* - observing and critiquing - with the students.

In the present study, feedback was not assessed. It is a stipulation of the program that a faculty member watch the examination and discuss performance afterward, using a form developed for critique. Whether or not the faculty member actually observes all or most of the examination, uninterrupted, varies. There has been an assumption that the student will benefit as much or more from watching the tapes themselves.

Roughly a quarter of those students in this study who did not watch themselves on their videotapes reported discomfort with the idea of watching themselves. It is not possible, based on this study, to state that their failure to watch their tapes impaired their learning. Clearly a majority of students found viewing most or all of both tapes to be a less than effective use of their time. Based on the benefits accrued to viewing, it is probably safe to assume that viewing the history and preliminary testing portions of the examination would maximize the benefits and minimize the time expended.

The suggestion that viewing of the videotapes is correlated with better clinical evaluations not only failed to hold up to statistical scrutiny, but it is also fraught with confounding factors. A study designed to assess the value of videotape viewing would assign students randomly to view or not view their tapes and then try to assess their clinical competence in a more objective manner using an interval scale which would be more amenable to statistical analysis. Students who are more compliant in following faculty instructions (i.e. viewing the tapes) would probably be more likely to receive high marks from those faculty when graded subjectively on their clinical competence, confounding the data collected. Likewise, students who are more resistant to following directions are less likely, when graded subjectively, to receive high marks.

## Conclusion

Second year students believed that viewing themselves performing patient examinations aided them in

becoming more efficient and gave them greater awareness of their appearance and presentation to the patient. Some students found it difficult to view themselves on videotape. Many students found watching more than one videotaped examination to be more time-consuming than it was worth. The literature would seem to support the view that watching the videotape without effective feedback is of little or no benefit.<sup>4,11,13,17</sup>

As stated in the discussion above, this study cannot be used to comment on the educational value of videotaping. However, there are important points to be gained by assessing the students' perceptions in this regard by both this institution and any institution considering integrating such a format into their clinical teaching program. The sole act of watching oneself perform an examination on videotape may make some students feel more comfortable in their professional growth, but it does not result in any appreciable gains. □

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## Industry News

(continued from page 75)

### Corning Announces 1994 Scholarship Recipients

Corning Incorporated of Corning, New York, selected two outstanding individuals to receive the 1994 Corning Scholarships. Corning chose Kelly A. Kinney, third year optometry student at the University of CA- Berkeley School of Optometry, as first place recipient of \$3,000 and John Paul Huard, third year optometry student of the Pacific University College of Optometry, as second place recipient of \$2,000.

Mr. Reinhard Krause, Corning Optical Products, remarked that, "Many impressive essays were submitted this year, along with applications reflecting superior academic performance and service achievements; selecting three recipients from this talented group was a difficult task."

Applications for the Corning Scholarships are subject to a two-tier screening process. In early February of each year, the American Optometric Foundation sends notifications and applications to the schools and colleges of optometry that are fully accredited members of the Association of Schools and Colleges of Optometry (ASCO). Any third year student attending one of these institutions is eligible to apply for the scholarships. As part of this application process, candidates must submit an essay or paper on one of several topics suggested by Corning. Students submit their completed applications and essays to the appropriate scholarship and awards committee of their school or college for the first level of screening.

Each institution can then select two students whose application and essay or paper will be submitted to the foundation and reviewed by Corning.

For more information regarding the Corning Scholarships or any of the award programs offered by the American Optometric Foundation, please contact James Vrac, AOF administrator, 4330 East West Highway, Suite 1117, Bethesda, MD 20814-4408 or call (301) 718-6514.

### Vistakon Awarded International Certification

Vistakon, a division of Johnson & Johnson Vision Products, Inc., has been awarded European Community (EC) certification and ISO 9001 Quality System registration from the British Standards Institution (BSi), announced Vistakon President Gary K. Kunkle. These distinctions, recognized throughout the world, are intended to help unite Europe economically and will allow Vistakon to place the CE-mark on its products.

The CE-mark and ISO 9001 Quality System registration create European standards by which all products can be measured equally in the marketplace. Without such distinctions, standards of quality would vary greatly from country to country, resulting in an unacceptable trade imbalance.

"These achievements represent an important milestone in Vistakon's history and are critical to our future as a global leader," said Kunkle.

To place the CE-mark on its products, a medical device company must demonstrate conformance to the European medical device law effective January 1, 1995. According to this law, a company must satisfy the Quality Systems requirements that cover the design, manufacturing, packaging, sterilization and distribution of its products, plus the technical requirements that apply to those products.

Vistakon opted to satisfy the Quality System requirements specified by the International Organization for Standardization (ISO) and the European Normative Standard (EN). Under the ISO 9001 and the EN 46001 model, the most stringent of the quality standards, Vistakon successfully demonstrated a high standard of quality in product development/design, manufacturing and customer service.

"The ISO 9000 series of quality standards has already been adopted by over 100 countries worldwide," said Kunkle. "In the not-too-distant future, any company wishing to sell its products or services in these countries may require certification under the ISO standard. By obtaining ISO certification now, we insure

that Vistakon can continue competing on a global level."

As a final step to certification, the technical product requirements, including the quality of ACUVUE® disposable contact lenses, SURE-VUE® contact lenses for daily wear two-week replacement, and 1-DAY ACUVUE® daily disposable contact lenses, were evaluated and met the high standards of the European Medical Device Directive.

In anticipation of the two distinctions, Vistakon conducted a rigorous self-assessment of all operating procedures and then implemented an action plan for final review by outside experts. The entire preparation process took more than two years to complete.

### Varilux Comfort Earns Paul Harvey "News and Comment"

Paul Harvey, the most listened to radio personality in America, will promote the Varilux Comfort lens in his "Paul Harvey News & Comment" segments on over 1,300 ABC-affiliate radio stations throughout 1995.

"This is a tremendous opportunity for Varilux to reach our target market through one of the most respected and sought-after radio personalities in America," said Claire Herrmann, group product manager. "Paul Harvey's endorsements are more meaningful because he respects his listeners and only speaks of products that he feels will benefit his audience."

Paul Harvey's testimonials emphasize the advantages of the visual range that Varilux Comfort offers. Early advertisements describe his personal experience with Varilux Comfort when playing golf.

The radio advertisements will include a reference to the Varilux Seal of Authenticity that independent eyecare practitioners can display. Consumers can also take advantage of the toll free telephone referral line (800-VARILUX) that identifies practitioners in their area who carry Varilux Comfort.

"Mr. Harvey's program will provide an exciting new forum for us to educate presbyopes and increase consumer awareness of the benefits of Varilux Comfort," said Michael Ness, vice-president of marketing.

# ABSTRACTS

**Students' Psychosocial Characteristics as Predictors of Academic Performance in Medical School.** Hojat M, Robeson M, Damjanov I, Veloski JJ, Glaser K, Gonnella J, *Academic Medicine* 68(8): 635-7, 1993.

As part of the continuing struggle to identify new methods of determining the potential success of candidates in a health professions program, researchers at the Jefferson Medical College of Thomas Jefferson University undertook a study to determine if psychosocial measures could be used as an adjunct to conventional admission measures in predicting academic performance in medical school.

Second year medical students were asked to respond to a set of nine psychosocial questionnaires. The outcomes of the questionnaires were compared to the students' performance in three areas: basic science examinations during their first two years of medical school, clinical science examination grades based on objective exams given during their third year clerkships, and ratings of clinical competence based on their performance during their third year clerkships. The nine tests were used to measure general anxiety, test anxiety, depression, external locus of control, loneliness, neuroticism, self-esteem, sociability and stressful life events.

The response rate was 83%. While the conventional measures (MCAT subtests) were equally effective in predicting academic performance as psychosocial measures, the psychosocial measures were more effective in predicting clinical performance. It should be noted, though, that neither were particularly effective in predicting clinical performance, in that the researchers found that only 4% of the common variance among the students was attributable to conventional measures, whereas the psychosocial measures explained 14% of the variance.

There is another point that should be considered when applying these results to a population of potential candidates for admission to a health professions program. The psychosocial test in this study were given not to candidates for admission to medical school, but rather to second year medical students. The authors have chosen to extrapolate the results and assume that they are applicable to candidates. This may or may not be the case.

One last comment made by the authors bears consideration. Their studies imply that fewer stressful life events, less anxiety,

less loneliness, less externality in locus of control, and more sociability contributed to predicting the ratings. The authors suggest that intervention in these areas may have a beneficial effect on the students' performance.

**Reviewer:** Dr. Dennis W. Siemsen, Illinois College of Optometry



**Medical Interviewing and Interpersonal Skills Teaching in U.S. Medical Schools,** Novack, D.H., et al, *JAMA* 269 (16), 1993.

Recognizing that successful medical therapy is contingent upon profound interpersonal skills (IPS) and effective communication, the authors surveyed U.S. medical schools to evaluate the quality of teaching in these curricular areas.

They reported that significant advances in the teaching of medical interviewing and IPS have occurred since 1977. While all institutions surveyed offered instruction in medical interviewing and IPS, only eight medical schools had a coordinator responsible for overseeing student education. At these institutions, deans rated the effectiveness of IPS teaching significantly higher than IPS teaching was rated at other institutions.

Although overall survey results were positive, the data showed wide variation in quality and intensity of instruction among U.S. medical schools. Many programs do not include appropriate educational principles in their course designs, and almost two thirds of schools lack faculty development programs.

The authors contend that programs without an organized faculty development process cannot assure quality and uniformity. While acknowledging certain inadequacies, the authors contend that progress in this area of medical education is being made, and the results of their study show a positive trend for the future.

Optometric educators should take notice of this paper, and avail themselves of the

medical literature which offers guidance in the teaching of patient interviewing and interpersonal skills.

**Reviewer:** Dr. Richard D. Hazlett, Southern College of Optometry

**Station-length Requirements for Reliable Performance-based Examination Scores,** Shatzer, John

H., Darosa, Debra, Colliver, Jerry A., Barkmeier, Lynne, *Academic Medicine*, Vol. 68, No. 3, pp. 224-229, March 1993.

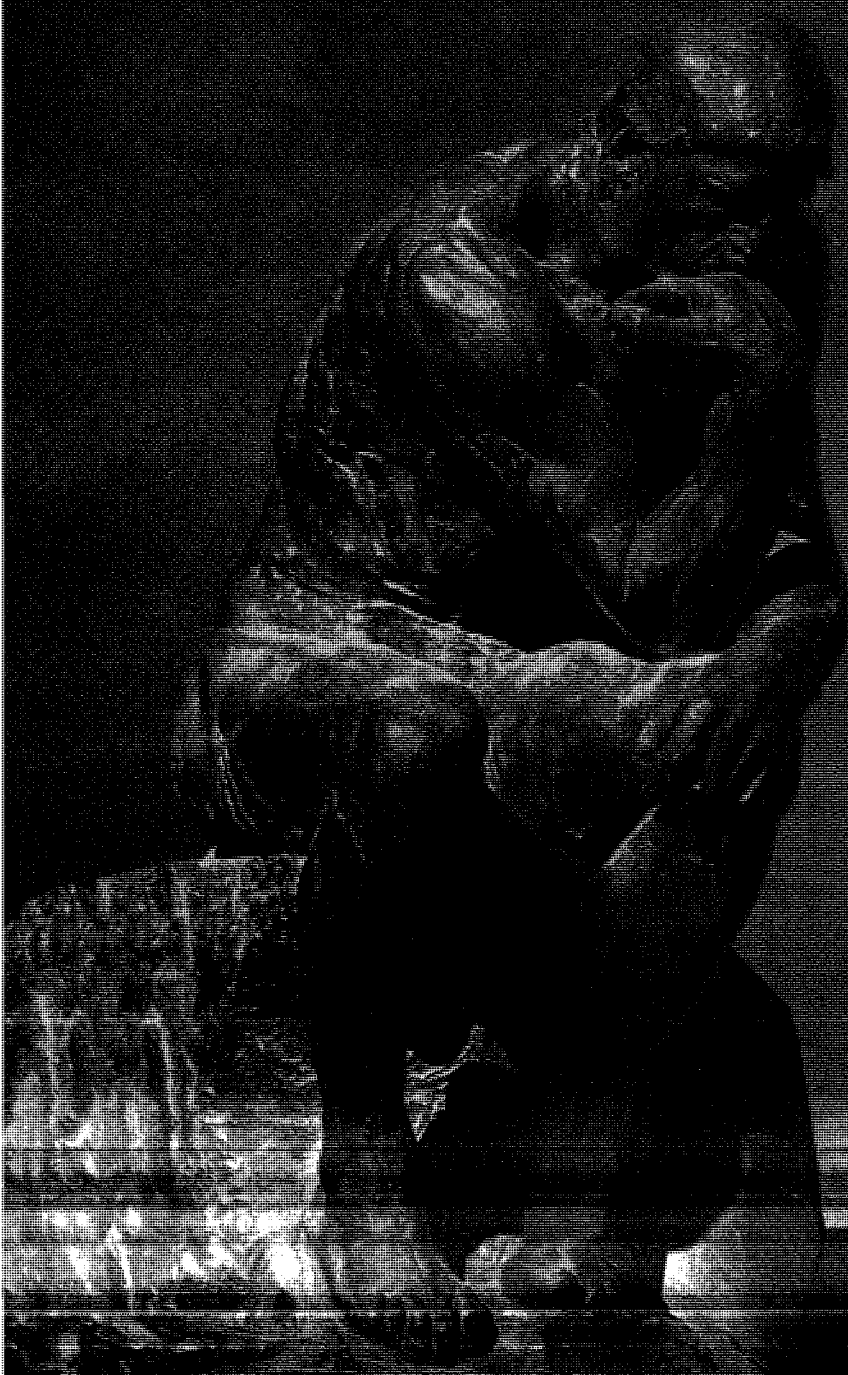
This paper presents the results of a study which examined one particular aspect of performance-based testing of third year medical students. Specifically, the study explored the effect on performance scores of allowing students either five minutes or ten minutes per station on a practical examination using standardized patients. The results indicated that the scores from the shorter stations (5 minutes) had a greater variability than those obtained from the ten-minute stations and therefore might be more useful in evaluating student performance. In addition to the greater variability of scores, the shorter testing time had the added benefit of reducing the time and therefore the cost of testing.

The authors, however, point out several important concerns about a shorter test encounter. For example, this form of testing will most likely favor students who remain narrowly focused on the specific problem and avoid pursuing other related or non-related problems. The brevity of each encounter also discourages students from applying important psychosocial skills during the testing period. It would seem likely that students will develop and apply a form of test-taking ability that will take the short time allotment into account.

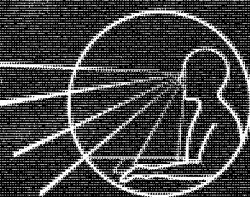
One could question whether it is necessary to "spread students out" (greater variability) or simply determine performance on a threshold basis if the goal is competency based testing. Of greater concern, however, is the possibility that this form of testing would encourage and favor students who remain narrowly focused and abrupt in dealing with patients. As we move toward a model of greater emphasis on primary care, a broad understanding of patient problems, their interrelationships and the importance of effective psychosocial skills should be encouraged in our future physicians as well as optometrists.

**Reviewer:** Dr. James E. Paramore, Ferris State University, College of Optometry

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