GUEST EDITORIAL

My Goals and Vision As Associate Editor

Aurora Denial, OD, FAAO

In June, I was selected to fill the position of associate editor of *Optometric Education*. It is an honor and privilege to assume this position. For the next year, I will be working with the current editor, Dr. Elizabeth Hoppe to learn and contribute to the journal, the only publication devoted entirely to optometric education. I would like to take this opportunity to share some information about my background and my interests as an educator, as well as my vision for the journal.

I have been a faculty member at the New England College of Optometry since 1997. My area of special emphasis is the science of optometric education, and within that area, I have a particular interest in critical thinking and teaching clinical thought process. In the past 5 years, I have lectured at several conferences dedicated to education and critical thinking. Additionally, my research and teaching efforts have provided many opportunities for me to explore academic journals, teaching tools, and philosophies in other health care professions. My experiences and interests have given me a unique perspective to be an effective associate editor.

The role of *Optometric Education* is to provide a venue for disseminating information that will move the profession forward. High-quality educational research has significant impact on the profession. The scholarship of teaching and learning requires inquiry, research, dissemination, and reflection to create evidence-based teaching and learning.[1] I hope to always remain open-minded and flexible when developing new ideas related to the advancement of the journal. I am excited and enthusiastic about the many possibilities that lie ahead.

I envision the journal as a resource for high-quality educational articles written by optometric educators, as well as educators in other professions. My vision includes an emphasis on the scholarship of teaching and learning, the creation of a useful reserve of teaching case reports, and the development of a more interactive format.

Scholarship of Teaching and Learning

In their book *Advancement of Learning: Building the Teaching Commons*, Mary Huber and Pat Hutchings write: "Teaching will be advanced when it is seen as intellectual work inviting careful deliberation among those who constitute the professional community and who take responsibility, as professionals in all fields must do, for improving the quality of the enterprise."[2]

The goal of most optometric faculty is effective teaching. Student/peer assessments, faculty development workshops, and anecdotal evidence are often used to achieve this goal. The concept of the scholarship of teaching and learning embraces the production of a public body of knowledge, which is characterized by high-quality, peer-reviewed research to achieve the goal of effective teaching.[1] Increased awareness and support of the concept of evidence-based teaching/learning will serve to advance the profession, enhance the quality of the journal, contribute to professional development, and benefit junior faculty members seeking advancement. Increasing the awareness of this concept at individual schools and colleges of optometry as well as at professional meetings is a priority.

Teaching Case Reports

The teaching case report is a unique format that is meant to capture the teachable moments common in a clinical setting. The purpose of including this format in *Optometric Education* is twofold: 1) to develop a bank of cases to be available for all educators; and 2) to provide a format for publication that is adaptable to a broad spectrum of optometric educators.

The teaching case report differs from a clinical case report in several significant ways, but the most significant difference between the two formats is that the teaching case report outlines and presents a strategy for teaching. The teaching case report is written to help faculty educate students. The goal of publishing teaching case reports is to have a collection of diverse cases published over time. Having a collection of teaching cases will be a useful resource for optometric educators. Teaching materials that are not disseminated have only local impact.

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Web-based Technology

The format of the journal itself will be influenced and changed by current technology. Some potential interactive Web-based functions are: article views, reference links, citation manager, download to PowerPoint, related content and citing articles, and personalization tools, such as e-mail alerts. Interactivity will allow readers to use the journal more effectively and with greater ease and to value the journal as an educational resource.

I am very much looking forward to the upcoming year. Please feel free to contact me if you have any comments, ideas, or proposals for future editions of *Optometric Education*.

References:

1. http://academics.georgiasouthern.edu/cet/sotl_info.htm, What is SOTL. Accessed Aug. 26, 2009.
2. Huber MT, Hutchings P. The advancement of learning: building the teaching commons. San Francisco CA: Jossey-Bass 2005.

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An Interrelated Curriculum to Improve Students' Clinical Reasoning

José M. De Jesús, OD, MA

Many optometric institutions are striving to develop ground-breaking integrative teaching strategies to provide students with a better clinical perspective in conceptual science courses and to improve their correlative knowledge to clinical applications. These strategies, however, may not produce optimum results within the structure of the current curriculum.

In this article, I discuss: 1) why I believe students struggle to associate basic and clinical concepts; and 2) the hindrance of applying innovative teaching to current curricula. I describe the characteristics of a proposed interrelated curriculum that may facilitate the implementation of integrative teaching tactics with an emphasis on developing conceptually based clinical reasoning skills that can be applied in clinical practice.

Impetus for Change

The Applied Basic Science Examination (ABS Part I) of the National Board of Examiners in Optometry (NBEO) has prompted many educators to look for ways to provide optometry students with a more clinical perspective in conceptual science courses and to improve their ability to correlate this information to clinical applications. This external force, the ABS examination, coupled with the long-standing existence of curricula sustaining unsatisfactory correlation between basic and applied science concepts has compelled optometric institutions to develop new teaching strategies to address these issues. Most optometric institutions make a clear distinction between basic and clinical science courses in their curricula. In addition, many institutions subdivide courses into track categories, which further isolate the individual topics.

In my opinion, presenting scientific concepts as separate and distinct from clinical concepts may interfere with students' abilities to draw associative parallels. Recognizing this potential stumbling block, some institutions now include integrative seminars in their curricula and interactive clinical case discussions in the conventional classroom setting, similar to those adopted by educators in other health disciplines.[1] Although some of these strategies may help improve conceptual and clinical reasoning, their implementation under current curriculum designs may have limited benefits.

Integrative seminars, for instance, may offer some benefit in improving students' interrelated knowledge, but to a certain extent, their application in current curricular structures seems impractical because of the way courses are segregated. I believe the inclusion of innovative integrative teaching strategies may render more fulfilling results under what I have designated an interrelated curriculum.

Interrelated Curriculum

With an interrelated curriculum, courses are not defined as purely basic science or clinical science. They are assembled and taught in one of the following three categories that are somewhat overlapping:

- Conceptually inclined courses with clinical relevance
- Clinically inclined courses with conceptual significance
- Parallel-corresponding courses with comparable conceptual and clinical relevance.

Common denominators among courses in these categories may facilitate students' abilities to develop clinical reasoning with a conceptual background. Based on this ideology, however, emphasis on concept and application varies, depending on the course modality. In addition, course presentation must be cohesive and synchronized, following either an integrated or a correlative format.

Conceptually and clinically inclined courses require an integrative presentation, whereas parallel-corresponding courses are presented correlatively. Integrative presentations of conceptually inclined courses involve congruent insertions of clinical associations within the predominant conceptual course content. In the same manner, basic concepts are systematically interposed into clinically inclined course content to provide background comprehension.

Conversely, parallel-corresponding courses consist of proportioned presentations of fundamental concepts related to medicine and their respective clinical applications, utilizing a complementary approach. Ultimately, these teaching systems may be consistent with integrative discussions and/or interactive clinical case presentations at the conclusion of a

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major topic section in a course.

Evidently, not all basic facts in conceptually inclined courses warrant clinical relevance, and not all clinical concepts in clinically inclined courses necessitate integration of scientific background explanations. It is the responsibility of the faculty member teaching the course to scrutinize and decide which concepts have important correlation to aspects that can be carried over to clinical practice. For the most part, concepts of this nature are the ones that improve students' clinical reasoning and critical thinking. The conceptually inclined coursework section that follows exemplifies basic concepts that are in association with relevant clinical applications. As previously stated, clinically inclined courses also follow this same layout interposing scientific concepts into the predominant clinical course content.

Functional Ocular Pharmacology
Autonomic Drugs

1. Efferent oculosympathetic and oculoparasympathetic pathways
2. Functional concepts of oculosympathetic and oculoparasympathetic post-ganglionic receptor types
3. Autonomic drugs that influence post-ganglionic oculosympathetic and oculoparasympathetic activity

a. Adrenomydriatics (phenylephrine, hydroxyamphetamine, cocaine)				b. Cyclomydriatics (atropine, scopolamine, homatropine, cyclopentolate, tropicamide)			
Chemical characteristics and ocular metabolism	Drug-receptor activity and tissue response	Adverse effects	Interaction	Chemical characteristics and ocular metabolism	Drug-receptor activity and tissue response	Adverse effects	Interaction
	• Dilator muscle • Conjunctival vessels • Mueller's muscle • Clinical relevance a. Pupil dilation procedure b. Differential diagnosis of miotic pupil	• Ocular • Systemic • Clinical relevance a. Mechanism and induction of acute angle closure in anatomical narrow angle b. Malignant systemic hypertension	• Drug – drug • Drug – disease • Clinical relevance a. Treatment for Parkinson's disease b. Treatment for mental depression		• Sphincter muscle • Ciliary muscle • Clinical relevance a. Pupil dilation procedure b. Cycloplegic refraction procedure 1. Latent hyperopia 2. Refractive accommodative esotropia c. Accomodative spasm/myopia therapy d. Amblyopia therapy e. Iridocyclitis treatment	• Ocular • Systemic • Clinical relevance a. Mechanism and induction of acute angle closure in anatomical narrow angle b. Increased intraocular pressure	• Ocular • Systemic • Clinical relevance a. Primary open angle glaucoma b. Pediatric patients with motor and mental retardation c. Vagal block and tachycardia

4. Integrative group discussion

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Parallel-corresponding courses, on the other hand, require constant complementation of fundamental concepts with clinical applications. They are based on fundamentals in pathology and clinical applications exposed with equivalent significance. Thus, disease-related facts presented are supplemented in tandem with clinical application counterparts. Faculty members teaching this type of course must assure that every fundamental concept has matching clinical correlations. Conceivably, topics in this course modality bear stronger association to clinical practice. The coursework section illustrated below characterizes the basis of this course format.

Difficult but Worthwhile Endeavor

Unmistakably, implementing this teaching philosophy may be difficult. Development of some courses may require a coordinated blending of counterpart subjects. In others, it may demand expanding their descriptive scope. From a teaching standpoint, a great deal of coordination is imperative. It may require extensive verbal interaction between educators, particularly when faculty engage in team-teaching courses.

Complexities of this nature, however, may be nominal in comparison to the benefits obtained. Interaction among educators may stimulate their interest in reevaluating teaching skills and didactic approaches. From an educational perspective, institutions may be able to successfully assist students develop competent clinical reasoning skills with conceptual basis and meet the demands placed on them to apply these skills in optometry practice.

Reference

1. Baldwin KB. Friday night in the pediatric emergency department: A simulated exercise to promote clinical reasoning in the classroom. *Nurse Educator.* 2007; 32:24-29.

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Advanced Neuro-Ocular Disease
Efferent Pupillary Pathway Disorders

1. Parasympathetic Disorders			
a. Anisocoria		b. Disorders	
Fundamental Concepts • Anisocoria testing	Clinical Applications • Differences in pupillary response related to parasympathetic anisocoria	Cranial nerve III palsy, Adie's pupil, dorsal midbrain syndrome	
		Fundamental Concepts a. Causes b. Signs and symptoms c. Pharmacological and ancillary testing d. Management options based on etiology and/or degree of involvement	Clinical Applications a. Associated signs and symptoms related to etiology b. Diagnostic workup c. Differential diagnosis based on results d. Management selection
2. Sympathetic Disorders			
a. Anisocoria		b. Disorders	
Fundamental Concepts • Anisocoria testing	Clinical Applications • Differential diagnosis of miotic pupils	Horner's syndrome, Argyll Robertson pupil	
		Fundamental Concepts a. Causes b. Signs and symptoms c. Pharmacological and ancillary testing d. Management options based on etiology and/or degree of involvement	Clinical Applications a. Associated signs and symptoms related to etiology b. Diagnostic work-up c. Differential diagnosis based on results d. Management selection
3. Interactive clinical case presentations			