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Special Issue on Outcomes Assessment

Outcomes Assessment Resource Guide for Schools and Colleges of Optometry
Kent M. Daum, O.D., Ph.D., F.A.A.O.
Morris S. Berman, O.D., M.S., F.A.A.O.
Roger L. Boltz, O.D., Ph.D., F.A.A.O.
The resource guide provides a basic orientation to outcomes assessment and provides resource tools that may be useful in an assessment program.

Outcomes Assessment Survey of Schools and Colleges of Optometry
Kent M. Daum, O.D., Ph.D., F.A.A.O.
Morris S. Berman, O.D., M.S., F.A.A.O.
Roger L. Boltz, O.D., Ph.D., F.A.A.O.
Diane E. Beck, Pharm. D.
A survey of the academic officers of optometric institutions suggests that outcomes assessment varies substantially across programs.

Integrating Outcomes Assessment into Optometric Education: A Strategic Guide for Enhancing Student Learning
Diane E. Beck, Pharm.D.
Kent M. Daum, O.D., Ph.D., F.A.A.O.
The authors outline eight steps that will help optometry schools and colleges transition a faculty from "denial" of the need for assessment to "institutionalization."

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This special issue of Optometric Education was made possible through the support of CIBA Vision Corporation.

Cover illustration based on a figure developed by JO Nichols in a presentation at Auburn University, August 2000.
Editorial

Outcomes Assessment — A Tool for Making a Better Product

Lester E. Janoff, O.D., M.S.Ed., F.A.A.O.

This special issue on outcomes assessment, funded by CIBA Vision Corporation, presents three excellent articles on "Outcomes Assessment." Reading and considering all three articles is a "must" for anyone concerned with optometric education. All three articles provide erudite definitions and discussions of outcomes assessment as it applies to a simple lecture or a complex degree program.

Just what is outcomes assessment? Although the precise definition of outcomes assessment varies among educators, the Commission on Higher Education, Middle States Association of Colleges and Schools provided a succinct interpretation that could constitute a working definition: "The primary goals of the outcomes assessment process are to: 1) document institutional, programmatic, course level, and individual student success in achieving stated goals, and 2) give early warning of potential problems by identifying those areas that may require institutional attention." To this wealth of knowledge and research on Outcomes Assessment, I would add an additional view based on my years of experience in the contact lens industry as well as in optometric education.

As optometric educators, we are in the business of "manufacturing" Optometrists or Optometric Physicians. And, as any manufacturing business, we must produce a quality product at a reasonable cost in order to succeed. In order to do this, the first thing we need is a detailed set of specifications that define what our finished quality product looks like. Do you really think a contact lens company would make millions of lenses without first precisely defining the standards (with tolerances) for its final product? What are the exit level competencies for our final product, the graduating optometrist? What about the tolerances for these competencies? Every College of Optometry must have a mission, goals and objectives that serve as a yardstick for measuring its graduates.

But what are the elements of our manufacturing process that we can assess? There is first the raw material that we take into our program. The contact lens company has very specific requirements for the monomers it purchases — their purity, length of storage, etc. What are our standards for admission to our institution? We have OAT scores, undergraduate GPA's, and other classical measures, but do these correlate with clinical competence? Do we measure candidate personality, learning style, and other non-cognitive aspects that may be more helpful in selecting candidates who will become outstanding clinicians? How do we analyze our raw material and are we looking for the right qualities given our mission?

This raw material now proceeds through the production process. This is our Work-In-Progress (WIP) and we must employ a variety of in-process controls. The contact lens manufacturer calls this "Quality Control," and it is a constant, ongoing, formative process that feeds back correction when an error becomes apparent. For optometric faculty this is probably the most familiar group of assessment techniques. It is the grade distributions in a variety of courses; it is clinical proficiency tests and patient care evaluations; it is the National Board of Examiners in Optometry exam scores; it is the attrition rate of our students in individual courses as well as the program. We also administer curriculum reviews and facilities and resource reviews that are helpful in creating an environment supportive of learning. But when the contact lens is finished and ready for shipment, a process of "Quality Assurance" takes place to be certain that no defective products have slipped through the cracks. What quality assurance measures exist for the graduating optometry students? Are defective products slipping through our system, and will they do us harm if and when they reach the marketplace?

In the contact lens industry, product evaluation in the marketplace is an important assessment tool. How do our graduates perform in Part 3 of the National Board exam, and in state board examinations, residencies and other postgraduate programs? Where do our graduates practice, what organizations do they join, and how many teach or publish? How do consumers (patients) feel about our product (practicing Optometrists)? It may well be that measures of our graduates are more informative as to how well we are meeting our mission than all the performance measures of students while they are in school.

(Continued on page 41)
Vistakon Marketing Campaign: Focus on Brand Strength, Diversity Outreach

As part of a comprehensive consumer marketing campaign, VISTAKON®, Division of Johnson & Johnson Vision Care, Inc., is executing a series of new programs and partnerships to enhance the growth of the contact lens category and highlight brand awareness for the market leader — ACUVUE® Brand Contact Lenses. The expansive outreach combines celebrity sponsorships, color contact lenses TV ads, and participation in multi-cultural events nationwide to target the youth, entertainment and Hispanic markets.

“We’ve worked diligently for years to ensure that eye care professionals are knowledgeable about the latest advancements in contact lens wear, and to help them grow their practices,” said Philip R. Keefer, president, VISTAKON® Americas. “This campaign reinforces our continued support for eye care professionals by directly improving patients’ familiarity with their contact lens options and reaching out to potential new lens wearers.”

Novartis Study Shows Benefits Of Visudynea Therapy

Data published in the Archives of Ophthalmology showed that visual outcomes remain stable during the third year of Visudynea (verteporfin) therapy in patients treated for choroidal neovascularization (CNV) due to age-related macular degeneration (AMD), the leading cause of blindness in people over the age of 50. The research was sponsored by Novartis Ophthalmics, the eye health unit of Novartis AG and QLT Inc. and is based on an open-label extension of the two pivotal Phase III clinical trials, the Treatment of AMD in Photodynamic Therapy (TAP) Investigation.

(Continued on page 41)
As clinical educators we always want to bring to our students and patients the latest technological advancements for the diagnosis and treatment of our patients. This is particularly true for our patients with binocular vision disorders or visual processing deficiencies. The microcomputer has been a major player in practices that emphasize diagnosing and treating binocular vision disorders. Dr. Gary L. Vogel has recently released a new computer program that offers multiple therapy tools to be used by the student, clinical educator and private practice clinician.

This new Windows version is an update to Dr. Vogel’s original DOS version. The 2002 release contains both a Track & Read and Visual Information Processing Skills modules. The Computer Vergence module should be ready for release by early Spring of 2003.

The Track & Read module contains therapy procedures for Visual Attention & Focus, Short Term Visual Memory, Span of Recognition, and Tracking Sequences, as well as several others. Each technique allows the user to vary a wide choice of options from font size to display speed. The Visual Information Processing Skills module contains therapy procedures for Visual Spatial, Laterality-Directionality, Visual Memory, Visual Discrimination, Visual Figure Ground, and Visual Closure skills. Again, a multitude of options allows the software to adapt to any patient.

The software can also be used with amblyopic and low vision patients as well. Amblyopic patients can patch an eye while combining eye movements and eye hand coordination while decreasing target size to improve visual acuity. Low vision patients can use this software to practice eccentric viewing techniques as they track word to word while learning appropriate searching, scanning, and tracking techniques.

Despite a somewhat awkward menu system and a cumbersome registration process (you must install the software and then email, call or snail mail additional information to Dr. Vogel before you can use the software) the software is extremely easy to use and provides an excellent resource to anyone interested in vision therapy. For more information, please contact Dr. Vogel at 618-235-7483 (voice), 618-235-7484 (fax) or garyv@peaknet.net.

Internet Resources for Teaching about Disorders of the Binocular Visual System

Eye Simulation (http://cim.ucdavis.edu/Eyes/Version1/eyesim.htm)

This webpage simulates eye movements and demonstrates the effects of disabling one or more of the ocular muscles and/or any of the 6 cranial nerves that control the eyes. The purpose of this simulation is to teach students and doctors how eye movement will be altered when oculomotor anomalies exist. You must have Shockwave installed when viewing this webpage.

City University Binocular Vision Tutor (http://www.city.ac.uk/optics/BVTutor/home.html)

This Internet resource includes tutorials (from the basics of doing a cover test to more advanced topics), Case Studies, and a Quiz as well as a Glossary of terms and References.

EyeWeb.org (http://www.eyeweb.org/motility.htm)

This webpage provides a core lecture on mobility and binocular vision (a basic course outline in this area).

All the 3D resources you could ever want can be found at http://www.stereo3d.com/links.htm#Pix.

Parks Three Step (http://richmondeye.com/eyevert.htm)

Want to send your students to a webpage that very nicely explains the Park 3 Step test? Than just go to this webpage.

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Vision and Commitment

- A worldwide company committed to the discovery, development and manufacture of ophthalmic products and instrumentation.

- Over the next 5 years, Alcon will invest more than $2 billion in eye-related research and development. That's an investment in your future.

- Alcon is uniquely positioned to continue its aggressive course of developing and producing the most innovative products and technologies.

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Zeiss Promotes Culbreth

Carl Zeiss Optical, Inc., announced the recent promotion of Grady Culbreth to director of business development. Culbreth will primarily be responsible for sales of Zeiss coating equipment to wholesale and chain laboratories. She will work closely with Zeiss regional sales and territory managers in order to maximize the number of leads and sales the company receives. Prior to her promotion, Culbreth served as the company’s director of public and professional relations.

Headquartered in Oberkochen, Germany, the global player Carl Zeiss is a leading international group of companies operating in the optical and opto-electronic industry. For further information on spectacle lenses and systems, see www.zeisslenses.com

Marchon Announces New Managing Director

Marchon Eyewear, Inc., announced the appointment of Mark Ginsberg as senior vice president and managing director of Marchon Designer Brands. With more than 20 years of business management experience, Mr. Ginsberg will coordinate with regional sales management, and oversee the global merchandising and marketing programs for Marchon’s licensed designer brands.

Marchon Eyewear, Inc., headquartered in New York, is America’s largest privately owned manufacturer and distributor of fashion, sport, and technologically advanced eyewear and sunwear, with branches in all major international markets, and regional headquarters in Amsterdam, for Europe, the Middle East, and Africa, and in Tokyo and Hong Kong for Asia.

Editorial

In conclusion let me point out that extensive measurement does not constitute a good outcomes assessment. The real issue is, “How do you use the measurement information you gather?” If nothing gets done with the information, if it doesn’t feed back into the system, then it has been a monumental waste of time. It doesn’t matter what you call it, and it doesn’t matter if you are making a contact lens or an optometric physician, as long as your assessment serves as a tool for improving the product.

References

CIBA Vision, a Novartis Company, is proud to sponsor this special issue of Optometric Education on Outcomes Assessment. CIBA has long partnered with ASCO and the schools and colleges of optometry to improve the quality of educational programs. In 1994, CIBA initiated and sponsored the Total Quality Education Grant Program (TQE) to encourage continuous improvement in optometric programs. Over the years, many of the schools' programs that received TQE grants have been described in the pages of Optometric Education.

CIBA Vision is pleased to support the further development of the strategic management of the optometric educational programs. We applaud Dr. Kent Daum and the members of the ASCO Task Force on Outcomes Assessment for their work in this important area. The opportunities and challenges for education have never been greater. It will require vision and leadership to find new, more efficient ways to educate tomorrow's professionals.

As a company blessed with good management, Ciba encourages the development of the strategic management of our educational programs. Outcomes assessment is a significant part of that task. We look forward to continuing our partnership in advancing optometric education and, in so doing, enhancing the visual welfare of our patients.

Sally Dillehay, O.D., M.S., F.A.A.O.
Head, Academic Development
CIBA Vision Corporation
Outcomes Assessment Resource Guide for Schools and Colleges of Optometry

Developed by the ASCO Task Force on Outcomes Assessment

Kent M. Daum, O.D., Ph.D., F.A.A.O. (Chair)
Morris S. Berman, O.D., M.S., F.A.A.O.
Roger L. Boltz, O.D., Ph.D., F.A.A.O.

Presented at the Annual Meeting of the Chief Academic Officers, June 24-26, 2001; accepted by ASCO's Board of Directors, November 16, 2002

Abstract
The Outcomes Assessment Resource Guide for Schools and Colleges of Optometry is designed to provide a basic orientation to outcomes assessment. The Guide includes a brief discussion of some important issues and provides resource tools that may be useful in an assessment program.

Keywords: Outcomes, assessment, program, performance, competency, educational research

Introduction

What Is Outcomes Assessment?
Outcomes assessment is the primary evaluative portion of the strategic management of a student, course, program or institution. An outcome is the result of a particular activity or program. Strategic management is a process designed to achieve the results (or outcomes) defined in mission, goals and objectives statements.

The institutional effectiveness paradigm demonstrates the nature of the management process (Figure 1). Due to its circular nature, each portion of the paradigm is essential. Mission, goals and objectives provide direction for management and allow the application of necessary resources to achieve the intended outcomes. Assessment activities demonstrate the extent to which the outcomes are achieved. Finally, using the assessment results is crucial in ensuring that the intended outcomes are achieved. If modification is appropriate, assessment results provide direction for formulating improved strategies to achieve the mission, goals or objectives at the next iteration. The failure to execute any aspect of the paradigm or failing to maintain the connections of the different parts threatens the success of the entire program. Good management knows what it is trying to do (Mission, Goals and Objectives); does it (Outcomes); understands the output of its process (Assessment Activities); and uses its knowledge of the process to achieve an ever more successful result (Use of Results).

The institutional effectiveness paradigm can be applied at many levels. If applied to an institution (or program), a number of related versions of the paradigm should be aimed at the various goals and objectives for each part of the mission statement. Similarly, the effectiveness paradigm can be aimed at learning within an individual course, and as such, the paradigm may be simpler than that applied to programs or institutions. Ideally, an institution will have interlocking effectiveness paradigms that connect the institution to programs to individual students within and across all courses in the curriculum. Although any single paradigm can be straightforward, connections among effectiveness paradigms across programs and courses and students are challenging to develop, to manage and to keep connected.

Outcomes assessment, then, is a part of the process of managing an activity or program so that:
- The mission, goals and objectives clearly state the intended outcomes (or products or results) of the activity or program.
- The outcomes of the program or activity are assessed (measured or examined) using appropriate tools designed for the task.
- The assessment data are used to modify the program or activity to obtain or maintain the desired outcomes of the program or activity.

What Drives Assessment?
Two major issues drive assessment, and it may be difficult to untangle them or to parse their relative importance. One obvious driver for assessment is the various oversight agencies (government (state and/or federal), accreditation agencies, or institutional management). These agencies have a common desire to certify the extent to which an institution or program is achieving its mission, goals and objectives.

The other major driver of assessment is educational (management) theory and practice. Achieving the best results necessarily discovers a role for assessment (as described in Figure 1 above). Achieving intended results requires goals and objectives; intended outcomes; assessment activities; and includes the use of the results. Faculty should play the most significant role in each of these assessment processes.
In summary, an effective assessment process plays an important role in demonstrating the achievement of an institution, a program, a course or a student. In addition, however, an effective assessment process provides data to guide and improve achievement. The most important driver of assessment should be the desire to make good institutions, programs, courses and students better.

**Outcomes Assessment in the Accreditation Process**

The Accreditation Council on Optometric Education (ACOE) requires appropriate outcomes assessments for optometric educational programs as part of the accreditation process. The ACOE "recognizes the importance of identifying and assessing educational and programmatic outcomes as a means to define and measure the quality of educational programs. It has woven outcomes assessment throughout its Standards of Accreditation." Crucial to the understanding of assessment required by the ACOE is that programs are required to select assessment tools that are appropriate for each program. Schools and Colleges, therefore, should tailor an assessment program for their own particular mission, goals and objectives considering the resources available and the needs of the program.

**Why is Outcomes Assessment Important?**

Assessment is simply feedback on the outcome of a process. Without appropriate feedback an open-loop system is created. Open-loop systems (an engineering term) generally are not self-sustaining and do not usually have the ability to achieve equilibrium. In fact, since there is no feedback, open-loop systems may not even incorporate a goal.

A thermostat controlling temperature is an example of a useful feedback system. When the temperature gets too high, cold air is blown in (or the furnace is turned down). If the temperature sinks too low, the temperature is allowed to rise (or the heat is turned on). Assessment is like the thermostat of an educational process and setting it properly provides a way to adjust the process so that the outcome (i.e., like the temperature) is appropriate.

A characteristic of our current age (post-modernism) is the availability of a vast amount of information that does not provide true knowledge and understanding. An assessment program should provide information organized to efficiently evaluate the effectiveness of the entity being examined. Either too much, too little or inappropriate information is a problem. Since assessment gives insight into the integrity of the mechanism producing the outcome, it is impossible to critically adjust the mechanism without knowledge of the outcomes (sort of like tightening a bolt without being able to feel it tightening).

Ineffective assessment programs have several characteristics in common. They may collect information that does not truly reflect the achievement of the mission, goal or objective. Although this may be good information, it represents wasted time, effort and resources. An ineffective assessment program may collect valuable but disorganized information so that its use may be difficult or impossible. Also, the information may be collected and organized effectively but not provided to the appropriate users of the data. Or, the assessment may be completed on an erratic basis that is too widely spaced to effectively control the process. The most frequent ineffective assessment program is one that collects only subjective data from limited sources and therefore is unable to provide a comprehensive view of the program’s achievements or its progress.

A good example of a potentially ineffective assessment program would be a curriculum committee attempting to manage the curriculum using only student evaluation of teaching (SET) feedback. Of course, SET feedback can be critically useful in gaining student perspectives on the effectiveness of the subject being taught. SET feedback does not evaluate the direct outcome of a course or program like certain performance measures (national or state boards or course-embedded performance tests (i.e., practical examinations)). In addition, the SET does not usually allow in-depth consideration of the causes of issues it may identify. A good assessment program is multi-factorial and uses different sources to consider the many facets of a desired outcome.

Good assessment programs manifest the following characteristics as their philosophical foundation (Table 1). A weakness or absence of any of these essentials places the entire program at risk.

**Who Should Be Involved in Outcomes Assessment?**

The best assessment programs gain strength from diversity in the groups of individuals surveyed. Programs should identify individuals from on- and off-campus that they would like to involve in their outcomes assessment.

**Opportunities for Outcomes Assessment in Schools and Colleges of Optometry**

There are many opportunities for the application of outcomes assessment in Schools and Colleges of Optometry. Assessment techniques can focus on growth and on participation and do not have to look only at the magnitude of certain fundamental aspects such as research dollar support. An effective assessment program may not require elaborate resource allocation. Depending on the needs of the program, assessment programs can be geared to obtain the most critical measures of effectiveness without an elaborate administrative apparatus.
Table 1
Essentials for Assessment Programs (modified)

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agree on the goals and objectives</td>
<td>Since the goals and objectives drive the whole process, they must be clearly stated and understood by everyone involved in the process.</td>
</tr>
<tr>
<td>2. Design and implement a thoughtful approach to assessment planning</td>
<td>Assessment programs must involve the appropriate individuals who must understand and be a part of the process. A good description of how the data are to be used is critical in allaying any fears of participants.</td>
</tr>
<tr>
<td>3. Involve individuals from on- and off-campus</td>
<td>A good assessment program involves many different sources to achieve objectivity and an evaluation of the use of the final products of the program. External groups or data are likely to use criteria specific to their situation. This may provide insight into the manner in which the products (typically students) function in a non-academic situation.</td>
</tr>
<tr>
<td>4. Select or design and implement data collection approaches</td>
<td>Only useful data must be collected and the collection of the data must be as efficient as possible and collected from appropriate sources. Data must be collected that meet the needs of the program from the standpoint of allowing modification of the process to achieve a desired result.</td>
</tr>
<tr>
<td>5. Examine, share and act on assessment findings</td>
<td>To be effective, the individuals affected by the assessment must know the results. Feedback from assessment techniques must be used to control the outcome of the process. Failure to use the data means that the assessment program, even if elaborate and otherwise effective, fails to achieve its most basic purpose, to make possible better outcomes.</td>
</tr>
<tr>
<td>6. Regularly reexamine the assessment process</td>
<td>Assessment programs examine dynamic, constantly changing outcomes. As such, the assessment program itself should be constantly reexamined to make sure it is as effective and efficient as possible.</td>
</tr>
</tbody>
</table>

Outcomes Statements

Achieving good statements to define the outcome of a process is a critical step in the successful management of that institution, program, course or student. Basic competency statements are statements of the outcomes of a professional program. Good outcomes data are:

- Clear and understandable;
- Direct and explicit in meaning;
- Reflective of current philosophies, actions and intentions;
- Written in short, simple sentences that state only one thought; and,
- Quantifiable and measurable.

Questions to be used in deriving outcomes statements are:
- What do we want to accomplish?
- What is it we say we do?
- What is it that we want our graduates to be able to do?

Good examples of outcomes statements are:
- The entry-level Optometrist must understand and have skill in the prevention, diagnosis, treatment and management of systemic conditions and processes that relate to vision.
- The entry-level optometrist must demonstrate appropriate personal, professional and ethical values.
- The student must demonstrate competency in performing Goldmann tonometry.

Outcomes are the objectives of an institution, program or course. They are the desired endpoints or achievements of the activity.

Characteristics of Assessment Measures

Assessment activities can be broadly classified as either perception about the outcomes or measures of the performance of the outcomes. Perceptions are subjective assessments and can be powerful measures of the opinions of the various participants or observers about various items within a program. Performance measures are designed to directly examine the outcome of items within a program (or course, etc.). Frequently, perceptions are most useful in helping to explain the performance of some aspect of the program.

Many other features of assessment activities should be considered when developing or using assessment tools. Some of these are described in Table 2. A brief examination of these characteristics demonstrates the challenges involved in understanding the ramifications of the assessment tools. Of course, a given tool can be tightly controlled or relatively uncontrolled as long as the tool meets the needs of the program. Of the many characteristics listed below, the priority and cost as well as considerations regarding validity, accuracy, strengths and weaknesses are especially critical for the successful selection of a tool.

Program Assessment vs. Learning Assessment

Much of the literature on outcomes assessment today is aimed at the assessment of learning. An outstanding example of a program using assessment to guide student learning is Alverno College. Alverno College has developed its entire curriculum to incorporate carefully defined objectives for student learning. The Alverno College faculty has defined eight expected outcomes for their liberal education process (Table 3). Each of these outcomes is a goal of the educational process at Alverno College. Competencies are developed for specific tasks that make up each of the outcomes.
<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>Area is a general description of the program aspect for which assessment is being completed. There are nine assessment areas in the Accreditation Council on Optometric Education Professional Optometric Program Standards 2000.</td>
</tr>
<tr>
<td>N</td>
<td>N is a serial number identifying the assessment activity in a particular area and allows better tracking of a tool.</td>
</tr>
<tr>
<td>Assessment Tool</td>
<td>The assessment tool is a brief (clear and simple) description of the assessment activity.</td>
</tr>
<tr>
<td>Priority</td>
<td>The priority of the assessment tool ranges from “1” (required), “2” (helpful), “3” (possible) to “NA” (not applicable). Tools with priority of “1” are recommended assessment tools. This score is a subjective assessment of the significance of a given tool in obtaining a complete and accurate examination of a given standard.</td>
</tr>
<tr>
<td>Type</td>
<td>• Internal or external. This describes whether the assessment data are collected from sources external or internal to the institution.</td>
</tr>
<tr>
<td></td>
<td>• Direct or indirect. This describes the nature of the data being drawn. A direct measure is where the knowledge, skill or value is being measured without intermediary steps, individuals or systems. An indirect measure does not measure the knowledge, skill or value in question but rather examines some proxy.</td>
</tr>
<tr>
<td></td>
<td>• Qualitative or quantitative. Quantitative data is numerical data with at least ordinal properties. Qualitative data includes controlled subjective assessments from surveys as well as comments or observations that may be relatively uncontrolled in nature.</td>
</tr>
<tr>
<td></td>
<td>• Perception or performance. This describes whether the assessment tool examines perceptions about the outcomes (subjective, surveys) or the performance of the program (objective, data).</td>
</tr>
<tr>
<td>Responsible</td>
<td>The responsible category specifies who is charged with responsibility for the assessment activity in question.</td>
</tr>
<tr>
<td>Calendar</td>
<td>Assessment activities should be regularly completed. The calendar describes the appropriate cycle for the assessment activity.</td>
</tr>
<tr>
<td>Targets</td>
<td>The target of the assessment activity is the ultimate source of the assessment data.</td>
</tr>
<tr>
<td>Data</td>
<td>This specifies the data used by the tool. It ranges from surveys, discussions, questionnaires to transcripts, policies, databases and others.</td>
</tr>
<tr>
<td>Data source</td>
<td>The data source specifies the repository from which the assessment data is drawn.</td>
</tr>
<tr>
<td>Validity</td>
<td>Validity implies that a tool measures the desired characteristic and encompasses reliability. Invalid data is misleading in that the response may not be representative of the larger sample from which it is drawn because it does not really assess the appropriate attribute among other reasons.</td>
</tr>
<tr>
<td>Accuracy</td>
<td>An assessment is accurate if it is a true measure of the activity in question. For example, a clinical skills test may be an accurate measure of a student's ability to perform a given skill in the clinic. A written test about the same skill may be a good test but may not indicate the student's ability to actually complete the skill.</td>
</tr>
<tr>
<td>Strengths</td>
<td>This is a brief listing of some of the strong points of the assessment activity.</td>
</tr>
<tr>
<td>Weaknesses</td>
<td>This is a brief listing of some of the limitations of the assessment activity.</td>
</tr>
<tr>
<td>Relevant ACOE standard</td>
<td>This lists the ACOE standard to which the assessment activity is being addressed.</td>
</tr>
<tr>
<td>Linkage to goals and objectives</td>
<td>This describes the goal or objective to which the assessment activity is directed. Without an appropriate link, an assessment tool represents a waste of time, effort and resources.</td>
</tr>
<tr>
<td>Response rates</td>
<td>The response rate provides the expected portion of the available data that is being captured by the assessment activity.</td>
</tr>
<tr>
<td>Questionnaire link</td>
<td>This specifies the questions on the surveys that are linked to this outcome.</td>
</tr>
<tr>
<td>Feasibility</td>
<td>This describes the feasibility of collecting the data in question.</td>
</tr>
<tr>
<td>Cost</td>
<td>This is an assessment of the cost of using the assessment tool. Cost estimates range from $ (inexpensive), $$ (cost involved), $$$ (very expensive, prohibitive). This is not the cost of the activity in question, e.g., research, but is the cost of using the tool to examine the outcome</td>
</tr>
<tr>
<td>Methods</td>
<td>This is a brief description of the methodology involved in the assessment process.</td>
</tr>
<tr>
<td>Uses of data</td>
<td>This is a brief description of the way the data is used.</td>
</tr>
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</table>
of graduating optometry students. The development of assessment methodology provides Schools and Colleges a way to accurately know what their products, the optometric graduates, know and can do. This allows the educational institutions to take steps to document the achievement of these competencies and to manage any challenging areas.

Programs may find it helpful to reorganize their basic competency statement into broad categories with appropriate knowledge, skills and values for each. The resulting fewer outcomes may allow a more manageable assessment task.

### Basic Methodologies for Conducting Outcomes Assessment

**Reliability, Validity and Accuracy**

A reliable assessment tool provides data where the variance in the findings is primarily a result of the differences in the sample with respect to what is being measured, rather than bias or other knowledge or skill. Clarity in the statements, adequate time to complete the instrument and good training for the assessors are vital components of achieving a reliable tool.

Validity implies that the tool measures the desired characteristic. This is a critical attribute for an assessment tool. Essentially, validity represents the honesty of a tool, i.e., the tool actually measures what it is designed to measure and this is known.

Accuracy describes whether a tool is a true measure of an outcome. Written tests may be measures related to a clinical skill. Often, however, the true measure of a clinical skill is a demonstration of that skill in an applied state, such as performing the skill on a patient.

Ideally, assessment instruments should provide evidence of their reliability, validity and accuracy. The NBEO examination provides data to support these factors in its reports. Many local instrument test packages also provide standard error of measurement and other data to assist in judging reliability, validity and accuracy. Unfortunately, many locally developed assessment tools must operate without substantial measures of these characteristics. Such tools should have face validity, i.e., the tool is judged to be valid by an examination of its nature.

**Surveys**

Surveys are a common method to obtain perceptions about particular aspects of an institution, program or course. Generally, survey questions could consider some or all of the following attributes of a given aspect (Table 5). Frequently, as a matter of practicality, surveys must be limited to the most important questions for an outcomes assessment plan. It is important to remember that good outcome assessment plays a critical role in the ongoing management of a program.

**Assessment Tools**

The Outcomes Assessment Survey of Schools and Colleges of Optometry contains a variety of assessment tools. These tools include copies of surveys of students, faculty, alumni, residents, peer institution faculty, exit surveys, exit interviews, mid-curriculum surveys,

### Table 3

**Expected Outcomes for Education at Alverno College**

| 1. Communication                          |
| 2. Analysis                               |
| 3. Problem Solving                        |
| 4. Valuing in Decision-making             |
| 5. Social Interaction                     |
| 6. Global Perspectives                    |
| 7. Effective Citizenship                  |
| 8. Aesthetic Citizenship                  |

### Table 4

**Characteristics of a Learning Community**

- Faculty and students are organized into smaller groups within the learning organization.
- Promotes integration of the curriculum.
- Students have better access to academic and social support networks.
- Students can be more effectively socialized to college and/or a profession.
- Faculty can be brought together in more meaningful ways.
- Both faculty and students can focus on learning outcomes.
- Provides a setting for community-based delivery of academic support programs.
- Offers a critical lens for reflecting on the first year of an academic program.

Judging each competency that makes up an ability incorporates a circular process designed to provide appropriate feedback to all of the stakeholders in the educational process but particularly the student and instructor. These components are listed in Table 4. Each of the components is linked to the others.

### Assessment and Basic Competency

After immense work, the optometric education community recently approved a document describing basic competencies for entry-level optometrists. This may be the first successful description of the knowledge, skills and values that graduating optometry students should demonstrate. Methods must be developed to confirm these competencies.
Assessment Programs

Selecting appropriate assessment tools for a School or College of Optometry can sometimes be daunting in view of the large number of possible tools for the nine standards of the ACOE accreditation requirements. The Outcomes Assessment Survey of Schools and Colleges of Optometry provides many possible tools for the nine standards. This can be a good source to review in initially constructing an assessment program.

Programs may find it useful to select a peer group of optometric institutions that have a similar mission. Within the overall group of optometry schools and colleges, there may be at least two natural peer groups, the public and the private schools and colleges. A peer group allows appropriate comparison of data. Comparing the total research budget of a large, public institution to the budget of a small private institution may be inappropriate and misleading.

Selecting or developing an assessment tool should not be taken casually. Assessment tools should span the program and the nine-accreditation standards. Surveys are good methods of obtaining data and can be relatively inexpensive. Data collection should be undertaken for areas other than the curriculum on a judicious basis. The curriculum demands an ongoing, multi-factorial process. Unfortunately, there are few, if any, commercially available assessment tools designed for professional optometric programs outside of NBEO and OAT examinations.

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standards is probably the truest indicator of the practical meaning of mission and goals of the institution. Therefore, in some sense, an assessment of the mission, goals and objectives is also included in assessments of the other standards.

Standard II. Governance, Regional Accreditation, Administration, and Finances

Assessing some portions of this standard is a matter of confirming that certain authority, policies, credentials or accreditation exists. As such the best assessment tool is a verification process that assures that these required elements are in place on a periodic basis. One important element of this assessment is to examine the source documents for each. For example instead of using a curriculum vita as evidence of the CEO’s Doctor of Optometry degree, a transcript or a diploma should be used. Certain assessment tools are designed to provide opportunities for comment, discussion and revision of the structures used for governance and administration. Of particular importance is evidence of the use of these data by the institution as opposed to simply gathering the data. Evidence of use may be provided in minutes of faculty or executive meetings or in changes in survey data over time or other linkages between the tools and the daily governance or administration of the program.

Because of the scope and complexity of the area of finance, a simple assessment approach may prove useful unless there are particular areas that seem questionable and are worthy of close examination. Probably a good approach is to assemble data of three basic types:

1. Financial performance data. This data should include a review of the basic financial trends for income and expense categories over time, at least five years. This area can include a more intensive review of certain areas such as faculty or staff salaries and benefits.

2. Perceptions of stakeholders. Surveys of various sorts can be designed to examine the impressions of faculty, staff, students and other interested groups about the financial management of the institution.

3. Evidence of discussion, revision and use of assessment data. A very important aspect is to demonstrate that the appropriate financial data is collected on an ongoing basis, that appropriate individuals including faculty examine and discuss the data; and, that the process is arranged so that appropriate adjustments are made on a periodic basis.

Standard III. Facilities, Equipment and Resources

As a result of the standard’s wording, most of the assessment probably should involve an examination of perceptions of the parties involved in the teaching and patient care (faculty, students, alumni, patients and staff). Certain accreditation agencies for patient care (e.g., Joint Commission on Accreditation of Health Care Organizations, http://www.jcaho.org/index.html) exist and these agencies potentially may be useful sources of benchmark data regarding patient care. Comparing teaching facilities to other programs may provide a useful subjective benchmark for faculty assessors. The primary benefit of comparisons like these is not so much to provide an “OK” or “not OK” outcome for the assessment but rather to provide ideas for the discussion of desired improvements to these areas. Finally, the assessment program should provide assurance that there are regular opportunities for interested individuals to discuss and recommend improvements to these areas.

The approach to assessing the library falls into a tri-partite pattern:

1. An assessment of the magnitude and scope of several library resources such as the number of volumes or the number of serials available or the number and scope of electronic databases available.

2. A survey of the various users of the library resources to determine their satisfaction with and their perceptions of the library.

3. Documentation of an ongoing, continual cycle of discussion, formation of objectives, assessment of outcomes and revision as applied to the library.

It is important to ensure that this critical area is considered on a periodic basis and that planning occurs to ensure its continual availability and competence.

The approach required for the informational services area involves the following items:

1. An assessment of the presence of appropriate goals and objectives for the area to guide the process.

2. A comparison of resources provided and practices used by IS at other institutions may be a useful guide in formulating opinions about the IS at a particular institution.

3. An examination of user satisfaction with the area and perceptions of strengths and weaknesses.

4. Documentation of an ongoing process of goals, outcomes, assessment and revision by the appropriate persons such as IS team, administration, faculty, staff, students and alumni.

Standard IV. Faculty

The approach for assessing faculty includes four basic parts:

1. Assembling goals and objectives for individual faculty and for the faculty as a whole allows an examination of the progress of a faculty.

2. Using survey data to understand the perceptions of faculty about the many aspects of their positions.

3. Using cross-program compilations to indicate a faculty’s performance.

4. Documenting the examination of goals and objectives and assessment of outcomes and then using that information to modify the outcomes.

Standard V. Students

The approach for an examination of students is greatly assisted by survey data provided by ASCO that provides such data as entering GPAs, OAT scores and related data for all institutions. This simplifies cross-program comparisons of entering student characteristics. Perceptions of student needs and perceptions of program strengths and weaknesses can be accomplished by means of survey instruments. Program outcome data such as job success and satisfaction require a survey of alumni. As with each standard, perhaps the most important feature of an assessment program is to ensure that continual examination and modification of program characteristics that affect students goes on periodically and regularly.

Standard VI. Curriculum

The assessment of a complex organ such as the curriculum must have many approaches and include measures of program outcomes. The most basic measures can include the following:

1. NBEO pass rates

2. State Board of Optometry pass rates

3. Individual course basic competency examinations

Particularly if data is examined over time, these can be very effective for making decisions about needs and improving the curriculum.
measures of program success. NBEO scores also are commonly used to consider the effectiveness of individual courses within the curriculum. Individual course competency exams can be designed to ensure the presence of critical skills.

Perceptions of the curriculum can be collected from student evaluation of teaching at the time of the course or at specified times within the curriculum such as mid-curriculum or from student exit surveys. Student exit interviews are useful ways to help the curriculum committee (or others) gain a deep, first-hand understanding of the issues facing students regarding the program and the curriculum. The first-hand experience can be an effective tool for motivating curriculum members to make changes.

Finally, probably the most important feature of a curriculum assessment process is to document occasions for thoughtful and regular examination of the state of the curriculum, its outcomes and modification as necessary and appropriate.

**Standard VII. Clinic Management and Patient Care Policies**

This is an area where the most important features of the assessment process should be:

1. Documenting the presence and viability of the required policies, manual, etc.
2. Documenting the presence of appropriate review, discussion and modification of the portions of the program in this area.

**Standard VIII. Research and Scholarship**

The assessment of research and scholarship for a program or an individual revolves around three aspects:

1. Documentation of various indicators of research and scholarship productivity including research dollars, number of publications and number of citations.
2. Compilation of perceptions of appropriate individuals regarding the status of research and scholarship and the identification of strengths and weaknesses.
3. Determination that an ongoing cycle of review and modification exists to improve research and scholarship.

**Standard IX. Residency Education**

We recommend that an assessment of residency programs include the following aspects:

1. The number and variety of residency programs.
2. The accreditation of the residency programs offered by an institution.
3. Perceptions of appropriate individuals about the residency program.
4. Documentation that an appropriate cycle of strategic planning is ongoing within the institution.

**Finally**

Managing an educational program in the Schools and Colleges of Optometry continues to be a challenging task. Fully utilizing the power and clarity provided by an effective assessment program can provide significant managerial assistance while at the same time providing confidence in the outcomes of the program; demonstrating evidence of success; and illuminating opportunities for improvement. Assessment, like a good case history, is never truly finished; each outcome and assessment leads to improved ways to achieve the mission of the program.

**Acknowledgments**

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**References**


**Additional Resources**

Abstract
The strategic management of educational programs at Schools and Colleges of Optometry requires the ongoing use of a sophisticated system of mission, goals and objectives, outcomes and outcomes assessment and the modification of the program based on the results of such assessment. The application of such systems to all aspects of an institution is challenging. Appropriately, optometric institutions utilize such assessment activities in ways customized to their programs. A survey of the academic officers of optometric institutions suggests that outcomes assessment varies substantially across programs. Most programs have designated assessment activities residing in aspects of the institution rather than in one individual assessment officer or committee. Few programs have conducted reliability or validity studies of their assessments. Most programs have strong assessment programs in place regarding the curriculum and utilize National Board of Examiners in Optometry scores, student evaluation of teaching results and a variety of other tools such as alumni surveys in judging effectiveness. Assessment of scholarship and research appears to vary extensively in both the quantity and quality of measures. Likewise, the evaluation of faculty includes annual review and professional development plans and reviews although overall judgment of faculty accomplishments or comparisons of faculty achievement appear less well developed. Outcomes assessment of administration, finance, library, utility and residency evaluation are typical aspects of an optometric institution’s outcomes assessment program. Relatively few programs report formal strategic assessment of facilities or informational services although most regularly review these areas. All institutions review student performance through a variety of activities including grades, exit interviews or other survey processes. Some examples of assessment tools are provided.

Key Words: Outcomes, assessment, program, performance, competency, educational research

Introduction
Optometric institutions are collections of highly motivated, energetic people devoted to developing students and to improving the visual welfare of the public. This environment demands timely, efficacious decisions, i.e., good management, based on a sound understanding of the consequences of many potential actions that rapidly present themselves on a daily basis.

Unsophisticated management often provides only superficial, lightly considered goals and objectives and primarily relies on indirect, highly subjective or single measures of effectiveness. These managers also may omit feedback to appropriate individuals and often fail to make adjustments related to measures of success. The resulting management is extremely sensitive to concerns regarding subjectivity and arbitrary, narrow or otherwise questionable decisions. This style of management does not establish what it is trying to do (Mission, Goals and Objectives); does not determine its achievement (Outcomes); fails to understand the output of its process (Assessment Activities); and lacks knowledge of the process that would allow more successful results (Use of Results).

Outcomes assessment is an integral part of the strategic management of optometric programs. As such, it provides critical data in documenting the extent to which programs, courses or individual students achieve the goals and objectives assigned to them. The development of advanced outcomes assessment requires appropriate goals and objectives for the wide variety of aspects of the educational program. In addition, the assessment process requires appropriate information regarding the achievement of outcomes to be available to the managers.
of the affected areas. Finally, an effective assessment program requires appropriate modification in response to data demonstrating the achievement (or the lack of achievement) of the goal or objective in question.

This survey of the status of outcomes assessment in Schools and Colleges of Optometry is part of a Ciba Vision/ASCO TQE Grant, An Outcomes Assessment Resource Guide for Schools and Colleges of Optometry aimed at improving the development of resources useful for outcomes assessment in Schools and Colleges of Optometry.

Methods

Surveys were sent to the academic officers at each of the seventeen Schools and Colleges of Optometry and the responses from this survey were shared with the Chief Academic Officers at their meeting in Boston, MA, June 2001. The person(s) most familiar with the outcomes assessment program at each institution were instructed to complete the survey. Institutions were instructed not to submit any sensitive materials.

Representatives of eleven institutions completed the survey. Seven public and four private institutions responded to the survey. The responses have been edited to remove names and to protect the anonymity of the institution. In certain cases the answers have been extracted from documents describing assessment at the institution.

Results

Responsibility for Outcomes Assessment

The responsibility for outcomes assessment varies in Schools and Colleges of Optometry (Table 1). Several institutions indicate that some type of assessment committee deals with the task. Relatively few Schools and Colleges designate a single person for the task (Table 2). About half designate an Associate Dean for the task while the other half either distribute the task or have not assigned the responsibility.

Most Schools and Colleges use surveys for evaluation of curricular outcomes (Table 3). The curriculum committee is involved in the assessment of curricular outcomes at many institutions. Programs vary in the depth of their assessment activities; however, assessment of many types is ongoing at virtually all institutions.

Most institutions use a variety of indices in their assessment program (Table 4). Most seem to appreciate the value of a benchmarking process using either relative or absolute indices.

A relative weakness of outcomes assessment programs in Schools and Colleges of Optometry may be the presence of studies of the reliability and validity of the assessment process (Table 5). The National Board Exam and the Optometry Admissions Test are standardized examinations that report reliability indices and have a high degree of validity. Only two programs indicate additional independent studies of this area.

There are a variety of approaches to outcomes assessment for different program areas (Table 6a-i). Question #6 in the survey asked: "For each area below describe the assessment process used at your institution. In your descriptions, describe the process and provide copies of any tools used in the assessment process; in addition, tell who is responsible for data collection; whom the data is collected from; and who monitors the results of the assessment."

Assessment of the curriculum seems to be the best developed area with all programs reporting some type of assessment and most reporting relatively extensive efforts (Table 6a). Most programs complete course evaluations, use NBEO scores and many programs survey students and alumni. Some utilize state board scores and exit interviews in the process.

Most institutions report assessment of scholarship and research (Table 6b). Some use relatively few indices while others report extensive assessment efforts.

Most programs complete reviews of faculty although there were relatively few comments about the use of this data in an assessment of overall faculty accomplishments or comparisons of faculty achievement to faculty at other institutions (Table 6c).

Most Schools and Colleges evaluate administration (Table 6d). Some defer this to a central campus process. Programs report considerable variability in the degree and regularity of assessment. Programs indicate relatively infrequent use of benchmark of comparative data in assessing administration.

Nearly all programs report ongoing assessment of finances (Table 6e). Some do not differentiate the role of strategic management in the process. Input reported by faculty seems to vary.

Relatively few programs report formal strategic assessment of facilities although most report activities designed to regularly review the utility of facilities (Table 6f). Most programs maintain assessment of library utility and to a lesser extent information services (Table 6g). Some have well developed tracking of benchmarked data.

All programs review student performance using a variety of indicators linked to course activities such as grades and student performance (Table 6h). Many report tracking of graduates. Some report assessment of incoming student characteristics.

Programs assess residency programs in a variety of ways (Table 6i). Most use the accreditation process directed at the residencies themselves. Some use surveys or interviews of residents.

Tools

Some Schools and Colleges of Optometry have submitted some of the tools used in their assessment process (Table 7). These tools are available upon request from the institutions.

Acknowledgements

We gratefully acknowledge the support of the CIBA Vision/ASCO Total Quality Education Grant Program.
### Table 1 - Responsibility for Outcomes Assessment in Schools and Colleges of Optometry

**Responses to Question 1: What person(s) are responsible for outcomes assessment at your institution?**

1. Formal and strategic outcome assessment is limited. The Strategic Planning Committee, a committee made up of students, faculty and staff, is developing a plan for ongoing strategic assessment. The committee is looking into placement of alumni on the committee.

2. Eventually, and in an informal manner, all faculty and administrators are responsible for outcomes assessment. The more formalized approach to this issue is described in the response to item #3.

3. Several faculty and administrators

4. Not formally delegated

5. Director of evaluation and planning (Doctor’s name provided)

6. Everyone bears some responsibility within their own program areas. The VP/Dean of Academic Affairs probably has the lead role, working with both department heads and the Board of Trustees.

7. The plan calls for a School-level assessment committee. Membership on the initial committee includes (Drs. names provided). The associate dean will chair the committee. The committee periodically may review and report on the School’s assessment activities and outcomes. Otherwise it will meet on an “as needed” basis. The need for committee action, however, may increase as external concerns about outcome and assessment increase.

8. The associate dean for professional studies and the director, Office of Educational Research, are the people primarily responsible for the outcomes assessment at the University. To a lesser extent, the dean, associate dean for graduate studies and research, director of externships and director of residencies are responsible for assessing certain portions of college activity.

9. The chair of the curriculum committee is primarily responsible.

10. Faculty in general, led by the Faculty Outcomes Assessment Committee.

11. Responsible persons are the College of Optometry, Executive Committee, dean (name provided) chair. The dean reports to the Office of Academic Affairs of the University (Provost).

### Table 2 - Designation of Responsibility for Outcomes Assessment

**Responses to Question 2: Is there an individual formally designated as director of assessment or the like at your institution?**

1. Not at this time. The committee functions in this role.

2. Not at this time. This will most likely change, however, in the foreseeable future.

3. Doctor’s name provided

4. No

5. Yes, see above.

6. No.

7. See above.

8. Associate Dean for Professional Studies and the Director, Office of Educational Research

9. The chair of the curriculum committee is primarily responsible.

10. No

11. There is no director of assessment.

### Table 3 - Description of Administrative Arrangement for Outcomes Assessment

**Responses to Question 3: Please give an overview of the administrative arrangement for assessment at your institution.**

1. It is variable. Currently, a survey of curriculum is administered to graduates of the program. They also complete an exit interview. These surveys are used by the Curriculum Committee to determine if changes need to be made in either didactic or clinical course/subject.

2. Awareness regarding a more formalized approach to assessment has been heightened recently as a result of the following two events:
   - Attendance by the Curriculum Committee and the associate dean for academic programs at the 2000 Curriculum
Institute hosted by the American Association of Colleges of Pharmacy (AACP). The title of this meeting was "A Guide to Assessment: Developing a Program Plan."

- A recent focused site visit by the regional accrediting body for the University in which campus program assessment was a topic of review by the team.

The dean has proposed a program assessment team comprised of himself as chair, the associate dean for academic programs, the associate dean for clinical programs, the director of student services, the chair of the Curriculum Committee, and the chair of the Faculty Development Committee, among others. This group has yet to get officially underway, particularly in light of the anticipated efforts of the chief academic officers group.

On a related issue, following the return of the Curriculum Committee from the AACP meeting, it was the consensus of the group as well as the faculty, subsequent to the group's report, that it was important to update the College's institutional Mission Statement, Goals, and Objectives before proceeding with the planned review of the entire curriculum. Specifically, we realized that the Objectives needed to be more clearly assessable, requiring a review and rewrite. This process is well underway, and our faculty has adopted new Goals and Objectives statements as they relate to the curriculum; each Objective includes one specified Assessment Tool. It is anticipated that an update/rewrite of the remaining Goals and Objectives statements as they relate to the other aspects of the program will be completed during AY 01-02.

From the standpoint of a personal observation, I would offer that each of the schools and colleges of optometry does a very good job ofse elements into a defined program assessment plan that is actively implemented.

3. Assessment is an ongoing process involving all phases of the College's operation. We conduct surveys, review published data for comparison purposes, hold focus group meetings, and conduct QA in the clinical program. Student and teacher evaluations are conducted continuously.

4. We are in initial planning stages.

5. Generally handled by the Office of the Director of Planning and Evaluation. Other areas of the College may suggest outcome measures, but they are generally administered by the director of planning. Certain faculty/academic outcome measures go through the dean's office.

6. Institutional Outcomes Assessment - the College’s “Outcomes Assessment Project” operates out of the Board of Trustees Institutional Planning Committee. The administrative liaison to the Committee, the Office of Academic Affairs guides the ongoing review, modification, collection and dissemination of measures. The project currently assesses the program areas using approximately 150 measures. The data is expressed annually in both table and graph form. The graphs allow for easy ten-y outcomes assessment in a variety of ways. We have perhaps not done as well as we could to codify and organize the data analysis.

Faculty, Students, Curriculum: These areas are shared among the Dean's Office, department chairs and the faculty governance structure.

7. Assessment of student performance is a long-standing feature of the School of Optometry and its programs. Assessment occurs in each of the three programs and at every phase of student interaction. It comprises multiple measures and it relies on the diverse faculty for comprehensive input and evaluations of student learning. Feedback to the students and faculty provide a continuous loop of information to help drive decisions about programmatic content, impact and the need for revision.

As a complement to regular course exams and other laboratory and didactic types of evaluations, assessment of clinical proficiencies and skills of optometry students is well integrated into the clinical curriculum. Clinical competence and proficiency (i.e., the degree of knowledge and the ability to apply it to clinical situations) are evaluated and assessed by clinical faculty in "real world" scenarios within the clinical and patient care environment.

External assessment of optometry students and evaluation against national criteria occur through the standardized National Board of Examination in Optometry exams in the second and fourth professional years. Clinical competence and proficiency are assessed further by regular and adjunct faculty as part of the students’ fourth year clinical rotations through clinical sites external to the School.

The measures of assessment employed by the School and its programs are reviewed periodically by the School committees and individual faculty for ways to improve the flow of information that may be used to assist in the evaluation of student learning:

- The School's Curriculum Committee is in the process of developing and proposing to the faculty a plan for a more summative type of annual assessment of student performance by the faculty.
  - At or toward the completion of each year of the professional program, advancement or progress committees of faculty will review the performance of students completing each of the years to evaluate their respective abilities to advance academically to the next professional year of the program.
Table 3 - Continued

A School level Assessment Committee will be formed to oversee and coordinate the assessment activities of the three academic programs in the School of Optometry.

- Membership on the Assessment Committee will include the associate dean of academic affairs, associate dean for clinics, associate dean for graduate programs, director of optometric technology programs, director of student affairs, Optometry faculty representative.

- The Assessment Committee will be chaired by the associate dean for academic affairs.

8. The director, Office of Educational Research, conducts student evaluation of courses, faculty teaching courses and labs and faculty teaching in the clinic. In addition, the Director surveys the OPT I and II students at the end of the year, the graduating students just prior to graduation and our alumni at about 4 years post-graduation. The results of the course/faculty evaluations are shared with the faculty member, the relevant department chair (without comments) and the deans (without comments).

The associate dean for professional studies compiles institutional effectiveness data for compliance with COE reporting and the requirements of the University. In addition to distributing the data to the above parties, the associate dean for professional studies distributes it to deans and department chairs as appropriate so that evaluations of the program can be made based upon this data. (The Mission, Goals and Objectives from the college were provided.)

9. The curriculum committee administers almost all assessment related to curriculum and its outcomes. The remainder of the assessment process is distributed among many areas. Consolidation may occur as a result of further consideration.

10. Faculty, faculty outcomes assessment committee, associate dean, dean

11. The executive committee of the college reviews assessment. The membership consists of the associate dean (name provided) the assistant dean of student affairs (name provided) and the assistant dean for clinical affairs (name provided) and is chaired by the dean (name provided). This committee meets weekly to discuss and make decisions with regard to all important college issues (including assessment). Although the dean is the final authority for decision-making, the committee generally functions by consensus.

Table 4 - Types of Indices Used by Institutions for Outcomes Assessment

Response to Question 4: Does your institution's outcome assessment process use relative assessment indices? Absolute indices?

1. The strategic planning committee provides outcomes measures by which the evaluation process will be held up against. These are not absolute, but rather guidelines. If the evaluation process determines that the outcomes measures are not working, a recommendation is made by faculty to change the outcome measure.

2. We utilize both types of indices.

3. Both, depending on the outcome being conducted.

4. N.A.

5. Relative, although thought has been given to absolute indices.

6. Yes. We use trend analysis looking for internal changes, but in some areas we use external benchmarks as well. We hope to increase the use of external benchmarks in all areas as we move forward.

7. N.A.

8. We use both. For example, we use absolute indices, such as pass rates and percent correct for the various subparts of the NBEO exams. We use relative indices to compare our pass rates and the percent correct answers for the subparts of the NBEO exams to the national data. Course and faculty evaluation data are assessed both by looking at the scores and distributions to the questions, as well as comparing faculty to the college mean and to each other.

9. We use both.

10. Some of each

11. The university has selected benchmark institutions for relative assessment. However none of the university's benchmark institutions include a college of optometry. Therefore, the college makes relative comparisons to the seven other public schools and colleges of optometry and the other health science colleges (Medicine & Public Health, Dentistry, Vet. Medicine, Pharmacy, Nursing) at the University.
Table 5
Reliability and Validity Studies of Outcomes Assessment
Response to Question 5: Has your program completed any reliability or validity studies of its outcomes assessment process?

1. No
2. We have not.
3. Contained in our self-studies for the professional and regional accrediting reports.
4. N.A.
5. Not that I am aware of.
6. No
7. N.A.
8. No
9. We are in process of developing both reliability and validity data on measures of clinical competence.
10. No
11. No validity or reliability studies for assessment have been conducted.

Table 6a Assessment of Curriculum
Response to Question 6a: Curriculum (include student evaluation of teaching or course evaluation tools)

1. Student evaluation of teaching, course evaluations, exit interviews of graduates and every three or four year a survey of alumni to gauge preparedness to practice optometry.

2. Process: Course and instructor evaluations are conducted for each course, including clinical courses. The process was developed by the faculty; the evaluations are administered by the office of the associate dean for academic programs as the evaluations relate to didactic coursework and the associate dean for clinical programs as the evaluations relate to clinical coursework (on campus and preceptorships).
   Alumni surveys are also conducted as they relate to the curriculum. These surveys are typically conducted about every 3 years.
   Responsible for data collection: the associate deans collect data regarding the course and instructor evaluations. The curriculum committee conducts the alumni survey.
   Data is collected from students and alumni.
   Results monitored by: the dean, the associate deans, the curriculum committee, the faculty development committee, the University personnel committee (evaluations are reviewed in the peer review process at the College and University levels). The course evaluation information is utilized heavily for the review of proposed curriculum changes.

3. Conducted by the assistant dean for all didactic courses. Conducted by the dean of clinical affairs for all clinical programs. Monitored by the dean of academic affairs.

4. Student ratings; monitored by associate dean.

5. NBEO scores, compiled by director; analyzed by dean.
   - Student Assessment of Teaching, faculty committee on Professional qualifications and dean; reviewed by dean, chairs, faculty members and committee.
   - Course evaluations, dean and department chairs meet with class officers toward the end of each quarter and go over each course in detail. Dean also meets with entire class each quarter for same purpose.
   - Alumni survey, director.
   - Grading of student-patient encounters, chair of clinical science and dean.

6. Course evaluations. Student evaluations. External review of course materials. Student performance (both internal to the course, but also external including proficiencies using outside reviewers, and NBEO performance.) Periodic review by faculty curriculum committee. Department chairs will sit in on lectures for review purposes as well. Promotion and tenure decisions require submissions of teaching materials.

7. See above

8. Process: Course evaluation forms are distributed to all students taking a particular class or laboratory and to students enrolled in clinic. Students complete a form rating the course itself and each faculty member with whom they had
Table 6a – Continued

Instruction. Alumni are surveyed as to the effectiveness of the curriculum but not for specific courses or faculty. Students complete evaluation forms for externship sites and preceptors at the end of their rotations.

Responsible for data collection: The director, Office of Educational Research, and assistant collect all data except regarding externships which are collected by the assistant to the director of externships.

Data collected from students and alumni.

The director, Office of Educational Research, who reports the information to the deans and department chairs and to the individual faculty, monitors the results.

9. Process: The curriculum committee regularly collects SETs for all courses, reviews NBEO and state board exam results, alumni surveys, externship preceptor surveys, student exit interviews and surveys, student mid-curriculum surveys, and individual course competency tests. A staff member assists in with the collection and reduction of data.

Responsible for data collection: Chair, curriculum committee

Data is collected from students, NBEO and state board examinations, alumni, externship preceptors, competency tests

Curriculum committee monitors assessment.

10. Student pass rates; student NBEO scores; student passage of state boards; graduates' success in residencies; feedback from off-campus faculty; graduate surveys; student course surveys

11. College SET (Administered by the College Office of Student Affairs); Peer evaluation of teaching (Conducted by faculty member's annual review committee); Exit interviews (Conducted by the College Office of Student Affairs); Curriculum committee track reviews (Standing college committee reporting to the dean); Student pass rate on the NBEO

Table 6b

Assessment of Scholarship and Research

Response to Question 6b: Scholarship and research

1. An annual report of the scholarly and research activity is forwarded to the vice-chancellor for academic affairs.

2. Process: Individual faculty member accomplishments and anticipated efforts in the areas of scholarship and research are reviewed as part of the annual faculty goal-setting meetings conducted by the associate deans. These areas are also reviewed by the Faculty Development Committee as part of the peer-based process for periodic reviews, promotion, and tenure.

Responsible for data collection: Associate dean for academic programs, faculty development committee, University personnel committee.

Data is collected from faculty.

Associate dean for academic programs, faculty development committee, University personnel committee monitor the results.

3. Conducted annually to review applications for release time, merit and promotions. Faculty and student research committees under supervision of director of research and dean of academic affairs.

4. We count numbers of publications; done by faculty committee.

5. External funding, associate dean for graduate studies and research compiles data; reviewed by associate dean and dean, publications, dean.

6. Institutional measures include a monitoring of grants (submitted, internal and external); $$ of external funding (direct / indirect); Resource allocation (FTE / Space / # of labs, etc.; publications; presentations.

Faculty are individually reviewed annually by the department chairs and set annual goals.

7. N.A.

8. Information on grant funding is gathered by a review of grant applications prior to submission. Scholarly productivity is evaluated every other year by the faculty review committee as part of its evaluation of faculty. Each faculty member completes a form in which a description of scholarly activity is listed.

Responsible for data collection: The associate dean for graduate studies and research and the faculty review committee.

Data collected from: The faculty

Who monitors assessment: The associate dean for graduate studies and research and the faculty review committee, department chairs and the dean


Responsible for data collection: Dean and department chairs
Table 6b – Continued

Data collected from: Grants and contracts administration, faculty
Who monitors assessment: Dean and department chairs

10. Only assessed on an individual faculty member basis as it relates to promotion/merit and tenure. Collected periodically for institutional and COE studies.

11. Number of presentations at annual meetings of AAO and ARVO; annual research award funding and research expenditures; research awards and expenditures per tenure track faculty; Research space per tenure track faculty; percentage of regular faculty who are members of the AAO; number of faculty who are diplomats in the AAO; number of publications per tenure track faculty member per year; number and type of research outreach/ collaborative activities; service of faculty on NIH, NSF national committees.

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Table 6c

Assessment of Faculty

Responses to Question 6c: Faculty

1. Post-tenure review; annual professional development plans and reviews; teaching evaluations; peer evaluations; administration evaluation

2. Process: Faculty performance is discussed during the annual goal-setting meetings conducted by the associate deans. The Faculty development committee is charged with conducting peer review of the faculty, including the processes of promotion and tenure. Faculty are reviewed annually while they are probationary on a tenure-track or extended term-track appointment; faculty receive a triennial review once tenured or extended term contract status has been reached.

Who responsible for data collection: associate deans, faculty development committee, University personnel committee.

Data is collected from: students (course and instructor evaluations), faculty members, faculty peers, administrators.

The associate deans, faculty development committee, University personnel committee.

3. Annual reviews with faculty regarding performance, goals and expectations. Conducted by assistant dean and dean of academic affairs.

4. Implementing use of teaching portfolios.

5. Faculty self-assessment form, dean.

6. Outside of the promotion and tenure process, faculty are assessed annually by the department chair in the areas of teaching, scholarship, service and if appropriate, patient care.

There is also an intermediate “formative” department review one or two years prior to promotion application.

7. N.A.

8. Faculty are assessed every other year (every year for non-tenured faculty) by the faculty review committee using a self-report form. Tenured faculty are also assessed every year by a Post-Tenure Review committee. Every other year, the faculty undergo an administrative review, which covers a faculty member’s performance in carrying out their administrative responsibilities (such as being a responsible member of the faculty). Clinical faculty member’s patient care is reviewed by a clinical faculty patient care review committee, which will examine a number of aspects of patient care (separated from teaching activities). This latter is now in the process of being developed.

Responsible for data collection: The faculty review committee, post-tenure review committee, and department chairs, associate deans and clinic director (for administrative review), clinical faculty patient care review committee.

Data is collected from the faculty member him/herself, members of the administrative review group (associate deans, department chairs, director of clinics) and peer faculty and patients (for patient care review).

Who monitors assessment: The faculty member, faculty review committee, post-tenure review committee, and department chairs, associate deans and clinic director (for administrative review), clinical faculty patient care review committee. Ultimately, the dean, associate deans and department chairs monitor the assessment.

9. Process: Faculty complete annual review. Faculty affairs committee reviews and provides recommendations.

Responsible for data collection: dean and department chairs.

Data is collected from faculty.

Dean and department chairs monitor assessment.

10. Only for accreditation. Each year four individuals go through post-tenure review (University process).

11. Number of research and teaching faculty; Number of graduate teaching associates; Number of teaching and research support staff; Student FTE to regular faculty FTE ratio; Number of endowed chairs and professorships; Number of minority regular faculty.
Table 6d
Assessment of Administration

Response to Question 6c: Administration

1. Peer-evaluations; administration evaluations; annual professional development plans and reviews; post-tenure reviews.

2. Process: The dean has an annual goal-setting meeting with the University president and vice president for academic affairs. During the meeting, goals are set for the upcoming year as they pertain to the dean individually as well as to the program. The associate deans and other College administrators are reviewed periodically by the dean, although the process by which this is currently being undertaken is being reviewed. Administrative staff members are reviewed annually by their supervisors.

Who is responsible for data collection: appropriate supervisor(s).

Data is collected from: varies with the individual.

Who monitors the results: Varies with the individual.

3. Ongoing informal review by the president. Occasional evaluation by faculty/administration/staff/students as well.

4. N.A.

5. Each administrator evaluated annually by his/her supervisor.

6. Senior managers reviewed annually by the president.

In Academic Affairs, the dean, the chairs and all budget heads (library, research, etc.) are assessed by their constituents using the IDEA survey out of Kansas State University.

7. N.A.

8. Every five years, the dean undergoes a formal review, initiated by the Provost’s office. This review includes surveys of faculty, staff and students. Department chairs and associate deans are reviewed about every five years through a process initiated by the Dean’s office. The structure of the review is very much like that of the dean.

Responsible for data collection: For the dean’s review, the provost is responsible for appointing a committee of faculty and staff from across the campus. For the associate deans and department chairs, a college committee is appointed by the dean.

Data is collected from faculty, staff and students.

Who monitors assessment: For the dean, the provost monitors. For the associate deans and department chairs, the dean monitors.


Who is responsible for data collection: provost.

Data is collected from faculty surveys.

Who monitors assessment: provost.

10. By higher administration. An evaluation process (form) for faculty is in the works.

11. Annual review of associate and assistant deans by the dean; Five-year review of dean conducted by the University Office of Academic Affairs with faculty input.

Table 6e
Assessment of Finances

Response to Question 6e: Finances

1. Long-range development plan with an annual development plan, which is reviewed quarterly; audit of system financials by an independent auditor; faculty input for capital, equipment, faculty development needs are used for development of the annual budget proposal to system.

2. Process: assigned budget authorities are responsible for various components of the budget. Regular monitoring measures are in place, usually as part of the weekly administrative team meetings.

Data is collected from: budget spreadsheets; revenue and expense data collected by the College’s finance office and the University’s business office.
Table 6e - Continued

Who monitors the results: budget authorities, the College's executive director of finance and clinics, the dean.

3. Board of Trustees sets financial policy and monitors the budget with president and vice president for administration.
   Formal audit process occurs.

4. N.A.

5. Internal control, internal control committee and chief financial officer.

6. Through the institutional outcomes assessment project and by the president.

7. N.A.

8. Local budgets set and reviewed by the dean.
   Responsible for data collection: College business administrator
   Data is collected from: College level human resources, purchasing, accounts payable, accounts receivable and grant administration personnel
   Who monitors assessment: Dean

   Responsible for data collection: fiscal officer.
   Data is collected from: financial accounting system.
   Who monitors assessment: dean and department chairs

10. By administration

11. Permanent budget allocation as a percentage of tuition sources and subsidy sources brought to the university by optometry; permanent budget allocation per student FTE; Costs of program relative to benchmark institutions.

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Table 6f
Assessment of Facilities

Response to Question 6f: Facilities

1. The facilities committee annually reviews needs, and makes recommendations based on faculty and staff input; a facilities audit is performed periodically; equipment is replaced on an eleven year cycle.

2. Process: the state of our facilities is monitored by the users (students, faculty), the executive assistant to the dean, and the University's office of facilities management.
   Who is responsible for data collection: the College's executive assistant to the dean, the University's Office of Facilities Management.
   Data is collected from: all constituencies of the College.
   Who monitors the results: the University's Office of Facilities Management, the executive assistant to the dean, College administration.

3. Director of physical plant is responsible for the College being in compliance with local and state regulations.

4. N.A.

5. Each area head assesses his/her area.


7. N.A.

8. Process: The facilities manager maintains the building and equipment. A perpetual inventory of capital equipment is maintained and reconciled on an annual basis.
   Responsible for data collection: building facility manager
   Data is collected from: physical inspection
   Who monitors assessment: building facility manager

   Responsible for data collection: fiscal officer
Table 6f - Continued

Data is collected from: varies
Who monitors assessment: dean and department chairs

10. Periodic surveys of staff and faculty include items regarding facilities.

11. Space per FTE faculty; College space compared to university draft space guideline for the health sciences; building maintenance staff FTE; number and type of maintenance requests per month; number of faculty recognitions and awards.

Table 6g
Assessment of Resources Including Information Services and Library

Response to Question 6g: Resources (including information services and library)

1. The budget and planning committee annually reviews needs, and makes recommendations based on faculty, staff and student input.

2. Process: Resources are assessed via needs requests as well as regular maintenance evaluations. Equipment and furniture needs are relayed by staff and faculty to the administrators. Technology needs are relayed to the College’s technology team and the University information services group as appropriate. Library resource needs are conveyed to the library committee by the faculty liaison to the committee.

   Who is responsible for data collection: administration.
   Data is collected from: all constituencies of the College.
   Who monitors the results: administration.

3. Resource committee (faculty, administrators and students) is responsible for monitoring the college resources.

4. N.A.

5. Surveys, assistant dean for information educational technology.

6. Outcomes assessment project.

7. N.A.

8. Process: The library tracks visits, new books, materials checkout, inter-library loans, faculty photocopying, classes held in conference rooms and other daily business.

   Responsible for data collection: library personnel
   Data is collected from: library personnel
   Who monitors assessment: chief College librarian


   Responsible for data collection: not formally assigned.
   Data is collected from: varies
   Who monitors assessment: dean and department chairs

10. Periodic surveys also cover these items.

11. Number of FTE staff for IS and instructional media support; student computer laboratory utilization; student FTE to staff ratio

Table 6h
Assessment of Students

Responses to Question 6h: Students

1. An exit interview is performed on every graduating class to determine the quality of the experience while at our institution; students are invited to participate on any COE Standard Committee so that input is directly to the committee; the Dean meets with students semi-annually at their student government meeting and quarterly (or more often if needed) with student leaders; a review of all required externship sites is conducted at least every five years by the Director of Externships or a knowledgeable and trained alumnus.
Table 6h – Continued

2. Process: Assessment of student performance in individual courses is made by the course instructors. Assessment of student performance, both academically and as it relates to demonstrated professional behavior, is reviewed for the class as a whole (i.e., via the faculty members for each class cohort) at the mid-semester review and end of semester review conducted by the academic and professional standards committee.

Who is responsible for data collection: faculty, academic and professional standards committee, associate deans, director of student services.

Data collected from: students, faculty, NBEO exam results, the College’s Office of Student Services, the University’s Admissions Office.

Who monitors the results: faculty, academic and professional standards committee, student services, administration.

3. Dean of academic affairs, dean of student affairs and individual faculty monitor academic performance throughout the academic year. Review NBEO scores. Alumni office monitors practice placement of graduates.

4. N.A.

5. NBEO, see above. Quarterly meetings with chair and deans for each class. alumni survey, director.

6. Are assessed through multiple and ongoing instruments integral to the curriculum. NBEO outcomes are monitored.

Note: The Office of Student Affairs has begun annual survey of students to solicit their input into student services performance.

7. Pre-optometry record: high school rank, college entrance test scores (SAT, ACT), competitiveness of undergraduate curriculum, college GPA, OAT scores, admissions evaluation.

Process measures: semester evaluations, course grades and cumulative GPA, clinical proficiency exams, clinical competence evaluation.

Outcome measures: academic evaluation, awards and recognition, capstone seminar, NBEO scores, state optometry board examinations, residency program, placement, professional activities and opportunities.

8. Process: in addition to the usual student examinations, students are evaluated by their clinical faculty through the use of mid-term and final student clinical evaluations. Student grades are monitored to determine if any courses have been failed and if an academic probation or suspension is warranted.

Responsible for data collection: clinic course masters gather clinic performance evaluations. The Associate Dean for Professional Studies monitors student performance and progress.

Data is collected from: clinic faculty and student grade sheets

Who monitors assessment: clinic course masters and the Associate Dean for Professional Studies

9. Process: student input data collected and reviewed by student affairs and admissions committee.

Responsible for data collection: student affairs

Data is collected from: ASCO surveys, materials from students

Who monitors assessment: student affairs

10. Monitor student pass rates, NBEO scores, activity in organizations, level of volunteerism

11. GPA average of entering class; OAT scores for entering class; student retention rate; number of applicants; number and percentage of minority students enrolled; scholarship money available; student exit survey; IPC survey of student experience; student performance on the NBEO.

Table 6i
Assessment of Residencies

Responses to Question 6i: Residencies

1. An annual survey of residencies is performed.

2. Process: program evaluations are completed by the residents. The residency supervisors complete evaluations of the residents.

Who is responsible for data collection: residency supervisors, director of residencies.

Data is collected from: residents, residency supervisors.

Who monitors the results: director of residency (associate dean for clinical programs).
Table 6i – Continued

3. Ongoing review by program coordinator, students and the director of residency programs. Evaluation process used, personal interviews.

4. N.A.

5. Exit interviews, director of evaluation and planning.

6. Director of residencies bears responsibility for review and modification. Both residents and programs are assessed through survey instruments. Residents are followed post-residency to assess long-term impact.

7. N.A.

8. Process: residency programs are evaluated according to COE guidelines.
   Responsible for data collection: director of residency programs
   Data is collected from: individual residency directors and residents
   Who monitors assessment: director of residency programs

   Responsible for data collection: director of residencies
   Data collected from: COE accreditation materials, ASCO residency website
   Who monitors assessment: director of residencies

10. For accreditation, in each of these areas, it would be the associate dean’s responsibility.

11. Number of residency programs; Number of graduates per year; COE accreditation report; disposition of residency program graduates; number of residents who enter a graduate program.

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Table 7

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Integrating Outcomes Assessment into Optometry Education: A Strategic Guide for Enhancing Student Learning

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Abstract

The ultimate purpose of outcomes assessment is to enhance the quality and efficiency of student learning. This endpoint is more likely to be achieved if faculty members adopt it as a personal responsibility for sustaining excellence in their teaching and not because it is mandated by accrediting bodies and policy makers. Optometry schools and colleges must move assessment from being perceived as an "innovation or initiative" to establishing it as an integral part of the institutional culture. This paper outlines eight steps that will help optometry schools and colleges transition a faculty from "denial" of the need for assessment to "institutionalization."

Key Words: outcomes assessment, continuous quality improvement, assessment, institutional culture

Introduction

A number of programs and institutions in higher education have described implementation of outcomes assessment initiatives. Often these initiatives have been in response to accreditation mandates and public policy. Although these initiatives are innovative and have promise, it has been a challenge to integrate an outcomes assessment process that continuously yields changes that either improve quality or reduce costs. The handful of colleges and universities that have achieved a successful outcomes assessment program have accomplished this by having a "spirit of academic inquiry" that enables them to be introspective and question whether an activity such as student learning is optimal. Assessment is an integral part of what the faculty and students at these institutions do each day. Specifically, assessment has become an integral part of the learning culture at these institutions. The goal of this paper is to provide optometry faculty with recommendations for enabling outcomes assessment to evolve from being an innovative educational initiative to an integral part of the institutional culture. This paper will focus on implementing an outcomes assessment program in the area of student learning and instruction. The eight steps described are also applicable to implementing an outcomes assessment program to improve service, outreach, research and scholarship within an institution. However, the specific details of implementing each step may vary for some of these other areas.

Background

The institutionalization of assessment requires "change." Wolff and Harris have noted that when an institution begins assessment that is mandated by accreditation or public policy, faculty often go through a process similar to the stages of "death and dying." The following stages have been adapted from Wolf and Harris' work and depict what to expect at the School or College level.

Stage 1: Denial. Faculty and administrators are uneasy about what assessment involves and just hope that it "goes away." They often view assessment as another educational fad that will pass.

Stage 2: Resistance. Realizing assessment is here to stay, faculty and administrators often resist the concept. Actually, they see this new concept as a threat to their School, departments, and even themselves individually. At this point, there is only a cadre of individuals driving the use of assessment.

Stage 3: Understanding. The institution begins to establish an assessment plan that is specific to the needs of the School/College. This may be largely driven by new accreditation mandates. Because of these mandates and the realization that assessment is here to stay, the School or College realizes the need to have an individual who has day-to-day oversight of assessment. At this point, a needs assessment begins to reveal the types of data already available and that there are already activities that are producing data that can be used in outcomes assessments. Assessment is still driven by only a few individuals within the School or College.

Stage 4: Campaign. The School/College develops assessment principles and guidelines that will sustain the efforts of all. A few more faculty members begin to support the value of assessment.

Stage 5: Collaboration. The faculty as a whole begins to develop long-
range goals for its assessment program. At this stage, assessment is widely supported as a useful tool. Larger numbers of faculty learn about assessment and actively incorporate it into their classroom activities.

**Stage 6: Institutionalization.** Assessment is a systematic process that has not only resulted in changes to improve student learning, but the process itself has been evaluated, deemed to make a difference, and refined. At this point, assessment is a part of the School/College culture. This means that frequently most faculty members have students involved in assessment activities during courses. Although most of the assessments are not used to determine a student's course grade, these data help the student and faculty member better understand how to optimize learning and document the effectiveness of learning strategies or identify the need to improve some of the learning activities.

The following discussion outlines how to transition a School/College of Optometry from denial to perceiving assessment as an integral component of the optometry college culture. Eight major steps are outlined for implementing a successful outcomes assessment program that continuously improves the quality and efficiency of student learning.

**Step 1: Establish a Collaborative Environment**

Because some faculty members have had prior experiences with assessment that were negative or because they were negatively impacted by teaching evaluations, they view a new assessment initiative similarly. There is often initial resistance in accepting assessment and incorporating it into the instructional program. Therefore, one strategy for overcoming these issues is to have both administrators and faculty agree that they will follow a set of core principles that communicate the purpose of assessment and how it will be used within the organization. Palomba and Banta have recommended that a School or College develop an effective and practical statement that conveys the purpose for assessment and have the faculty adopt it. (See Table 1)

Since teaching, learning, and assessment are so integral with each other, it may also be helpful to adopt Principles for Effective Teaching and Principles for an Effective Assessment Program. (See Tables 2 and 3) The principles in Tables 2 and 3 can also be used to develop an emphasis on learning rather than teaching.

**All three sets of principles can reduce a number of potential barriers that may erupt as the need for assessment is introduced to a faculty.** For example, some faculty members view assessment as an education fad that will pass and, since it will not make a difference, it will eventually give way to some other fad. Many faculty members have underlying concerns that assessment will not make any difference. Faculty members may also view assessment as something that hurts people and programs rather than helping them improve. For instance, they may have previously encountered institutional decisions where programs were cut because they were found to be of poor quality. Unfortunately, assessment has been used in the past by some institutions to humiliate people and make decisions about salary increases and promotion. Faculty members may also

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**Table 1**

**Core Principles for Assessment**

- The purpose of assessment is improvement of educational programs.
- Assessment of student learning and development will be a collaborative process involving faculty, staff, and students.
- Assessment will be guided by the institution's mission.
- Assessment results will not be used for faculty or staff evaluation.
- The assessment process itself will be evaluated.

**Table 2**

**Seven Principles of Good Practice in Undergraduate Education**

- Encourages student-faculty contact.
- Encourages cooperation among students.
- Encourages active learning.
- Gives prompt feedback.
- Emphasizes the time the student devotes to the task.
- Communicates high expectations.
- Respects diverse talents and ways of learning.

**Table 3**

**Nine Principles of Good Practice for Assessing Student Learning**

- The assessment of student learning begins with educational values.
- Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time.
- Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes.
- Assessment requires attention not only to outcomes but also to the experiences that lead to those outcomes.
- Assessment works best when it is ongoing rather than episodic.
- Assessment fosters wider improvement when representatives from across the educational community are involved.
- Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.
- Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change.
- Through assessment, educators meet responsibilities to students and to the public.
view assessment as an initiative that diverts money and resources away from other priorities that are important to the institution’s mission (e.g., research and service).

This initial step usually requires introduction by the College leadership responsible for the curriculum (e.g., Director of Assessment, Curriculum Committee, Assessment Committee, Dean and other key administrators (e.g., Executive Committee). These individuals can successfully accomplish this priority by proposing the principles outlined in Tables 1, 2, and 3. This should entail a three-step process: 1) proposal of the principles for adoption, 2) extensive discussion about what they mean and establishment of a “vision” of what the School or College will look like when they are a part of the culture, and 3) adoption of the principles by both administration and faculty once they are clearly understood. During this early stage, most faculty members will not be familiar with the terms and definitions used in the statements outlined in Tables 1-3. It is important to encourage discussions that clarify the meaning of both the terms and the statements. Allowing time for such dialogue can serve as a means of initial faculty development pertaining to assessment. Providing a “vision” of what the School or College will look like when these principles are a part of the culture will help the faculty see “the end of the tunnel,” stimulate interest in learning more about assessment, and help leaders identify the next step for faculty development. This vision will need to be continuously reemphasized to remind faculty of the endpoint and to inculcate assessment and continuous quality improvement as an integral part of the institutional culture. It is also valuable at this time to introduce plans to develop a “Comprehensive Assessment Plan” (CAP) which is a document that outlines the desired outcomes, indicators of quality, and methodology for conducting the assessment and interpreting the results in all areas of the School of Optometry. It should be emphasized that the plan will require faculty to develop a “spirit of inquiry” about learning and a similar CAP will be needed in the areas of service, research, and outreach. It is also valuable at this time to have the faculty review the program mission and ensure it reflects a focus on continuous quality improvement.

**Step 2: Establish an Infrastructure That Makes Assessment an Integral Activity**

There must be an infrastructure within the organization that encourages all members to value assessment activities and a process within the governance for identifying and implementing improvement strategies as they are identified. First, the School or College should establish learning communities that encourage all faculty members and students to develop a “spirit of inquiry” to continuously learn and improve. Second, a leadership group within the College must be charged to drive ongoing assessment activities and bring forth recommendations to the general faculty for approval on a scheduled basis.

**Learning Communities** In order to successfully implement outcomes assessment in the area of teaching and instruction, assessment must become an integral part of what both students and faculty do during daily classroom activities. Assessment activities can be successfully incorporated into the daily classroom activities by using assessment exercises that really enable students to perform peer or self-assessment. Instructors can administer brief assessments that provide feedback to themselves and to the student about whether student learning is optimal. Cross and Angelo have published a book of Classroom Assessment Techniques (CATs) that enables instructors to address questions about learning that are of most interest to them, are quick and easy to administer, and rapidly provide feedback to both the instructor and students about how to improve learning. CATs begin to help faculty members develop a curiosity about how well students learn and what they are struggling to learn. When students and faculty dialogue about how well learning is occurring, both groups gain better insight into what is needed to improve. Faculty also need to be encouraged to document their inquiries about learning, strategies for improvement, and effectiveness in a scholarly manner so that they can share their wisdom with other educators and efficiently achieve the expectations of an academic career.

According to Shapiro and Levine, development of a learning community involves linking together several existing courses or restructuring the material entirely so that students have: 1) opportunities for deeper understanding and integration of the material they are learning and 2) more interaction with one another and their teachers as fellow participants in the learning enterprise. There are a variety of curricular structures and strategies that can be used to accomplish this. Modular learning strategies such as the problem-based learning format described by Chauncey provide an excellent environment for a learning community. Such communities can also be organized along curricular lines and common career interests. Learning communities enable building a sense of group identity and cohesiveness, and counteract the isolation that many students feel. They also encourage continuity and the integration of diverse curricular and co-curricular experiences.

Researchers have documented the rationale for establishing learning communities and how the learning communities can enhance the quality of student learning. Boyer and the Carnegie Commission on Undergraduate Education first documented the value in 1987. Since then, Astin and Pascarella and Terezini have confirmed the value of learning communities. The formation of learning communities can be introduced by an administrator or curricular leader within the College who is able to bring together key individuals who are likely to promote the concept and make it successful. A college will be more likely to successfully propose a model for the learning community by identifying a current curricular need.

As a learning community is established, the following points should be emphasized to faculty. First, a learning community helps promote assessment as an integral component of the learning process. Faculty and students must view assessment as an integral conduit to better learning and not something that is just added on to a course. Second, when members of the learning community meet, there should be more opportunities for a student to talk with a faculty member about performance/learning and get feedback for how to improve. Faculty and students often do not critically reflect on whether the learning out-
comes intended for a course were achieved and this can occur during the activities of a learning community. Third, because a learning community incorporates use of multiple courses over time, there is more opportunity to document and assess whether student growth has occurred. A single course can not as effectively reveal learning over time. Fourth, in a traditional course, students and faculty rarely come together just to discuss how the learning process is going. When a learning community is established, both students and faculty meet on a routine basis to reflect on the learning process and how it can be improved. Finally, faculty members rarely have opportunity to assess questions they really care about in a single course; however, this can occur during the discussions that take place in the learning community environment.

Curriculum and Governance
Although some Colleges/Schools may establish an Assessment Committee to formulate plans and decisions, their activities need to be linked to the Curriculum Committee so that curricular changes are implemented. This can be accomplished by establishing a model that either links reporting between the two committees or by designating the Assessment Committee as a sub-committee within the Curriculum Committee. The American Association of Medical Colleges recently provided snapshots of the curriculum management and governance structure in medical schools. Readers are encouraged to review the various approaches that medical schools are using and how the various structures promote changes as the result of assessment activities.

Step 3: Recruit a Leader for Full Implementation of Outcomes Assessment

Once the college is positioned to fully implement outcomes assessment, an individual is needed who can drive development of a CAP, promote faculty development, and serve as an expert when questions about assessment methodology arise. The Dean and other key administrators (e.g., Executive Committee) should determine how the person with these responsibilities will fit within the organization and identify other key players in the early phases of implementation.

Most optometry Schools/Colleges currently assign these responsibilities to a faculty member or an individual within the administrative organization. However, large programs may find it more effective to form an Office of Education from which the individual provides expertise in not only assessment but also other aspects of teaching and curricular development. Brownell has described an increase in the number of medical schools that have established an Office of Education to provide faculty with experts in areas such as assessment.

The following individuals are potential candidates for implementing and conducting an assessment program: 1) Associate/Assistant Dean (assuming he/she has the time and expertise), 2) a faculty member with expertise in assessment, or 3) a specialist with an education or assessment background. They may be designated with a title of Director of Assessment or whatever is most appropriate within the institution and the individual should chair the

Table 4
Characteristics of a Learning Community

- Faculty and students are organized into smaller groups within the learning organization.
- Promotes integration of the curriculum.
- Students have better access to academic and social support networks.
- Students can be more effectively socialized to college and/or a profession.
- Faculty can be brought together in more meaningful ways.
- Both faculty and students can focus on learning outcomes.
- Provides a setting for community-based delivery of academic support programs.
- Offers a critical lens for reflecting on the first year of an academic program.

Table 5
Qualifications for Individuals Who Are Responsible for Oversight of All Assessment Activities

- Vision: Broad understanding of institutional purposes and ideals. Insight into how assessment can be used to enhance these purposes and ideals.
- Understanding of Academia: Understands the strengths and weaknesses of faculty and administrators as they perform their roles within the institution. Understands how academic institutions function.
- Functional Knowledge of Measurement and Research Design: thorough knowledge of measurement theory, statistical methods (esp. multivariate statistics), and research design.
- Technical Know-how: Can implement electronic methods for data collection (e.g., optical scanning, mark sensing, web-based surveys), data management (use of Access software to set up organize, store, and retrieve data), and statistical software (SPSS or SAS).
- Understands relevant educational and social science concepts: Familiar with learning theory, instructional methods, curriculum, support services, student development theory, group dynamics.
- Good communication skills: able to listen, speak, and write clearly; is persuasive and can express complex ideas and findings in clear, concise ways.
- Academic qualifications: Training, experience, and accomplishments at a level commensurate with appointment as a tenure faculty member.
- Personal qualities: patience, non defensiveness, empathy, creativity, and initiative.

Individuals may or may not have training in the professional discipline.
Committee or sub-committee within the Curriculum Committee. Table 5 outlines the qualifications that Astin has advocated for individuals who assume this responsibility, and these should be used as criteria in selecting the final candidate. An important role of the Director of Assessment is planning and data management so that outcomes assessment becomes systematic. This responsibility will be more fully explained in the next section. As will be emphasized below, in order to implement an efficient assessment system, databases and other forms of technology must be used. Therefore, the final candidate should have the skills and confidence needed to transition the program so that it becomes a seamless paperless system from the point of data entry to preparation of final reports.

Responsibilities for outcomes assessment should not be a long-term responsibility of just one or two individuals within the optometry school or college. In order for outcomes assessment to be successful, all faculty members must develop the “spirit of inquiry” and make assessment an integral part of their daily activities. Therefore, the primary role of the Director of Assessment should be to build this spirit and facilitate involvement of larger numbers of faculty in assessment activities over time. The Director should be prepared to provide faculty development as the program evolves and enable faculty to integrate assessment into their individual courses and ways of thinking about how to improve higher education. For example, the Director can mentor and coach faculty members as they develop strategies to assess the success of a course or course sequence for which they have responsibility. The Director can also provide expertise when faculty members encounter challenging data or situations. This will enable development of a culture for assessment.

A successful assessment program requires collaborative involvement of a cadre of individuals who can sustain the concept across all areas of the organization. Therefore, the responsibilities should rapidly involve more than just a Director of Assessment. One strategy for achieving this collaborative involvement is to add the following individuals to the Assessment Committee or sub-committee within the Curriculum Committee: 1) faculty members who have demonstrated expertise in assessment or who have successfully implemented innovative assessment methods, 2) individuals who are responsible for components of the curriculum or program in which outcomes assessment activities need to occur, and 3) faculty members who express an interest in assessment and learning. Such a cadre of key faculty members within the learning community can demonstrate assessment to others and help sustain it. Again, development of an “Assessment Team” that adds more faculty members over time will enable assessment to become a part of the institutional culture.

As the assessment activities evolve, the Director will also need the collaborative assistance of other personnel. For example, experts in database development will be needed as described below. Furthermore, in order to enhance the productivity of the Director, secretarial and data entry assistance may be needed at times.

Successful accomplishment of this step demonstrates support from academic leadership and a commitment to provide faculty with the resources needed to successfully implement an effective program. An effective Director of Assessment can: 1) prevent faculty from becoming overwhelmed with procedural aspects of assessment, 2) assist faculty members who lack expertise in assessment and do not have experience in interpreting data, and 3) enable faculty members to conduct assessment efficiently so that it is an integral part of teaching and learning.

Step 4: Conduct a Needs Assessment

Before proposing new assessment activities and resources, it is valuable to determine faculty interest and needs, review the current learning outcomes and scan the institution’s environment to determine outcomes assessment data and activities that may already be present. Such a needs assessment can be accomplished by a committee; however, it should be chaired by an individual who has knowledge or expertise in outcomes assessment.

Faculty interest and needs can be identified by conducting focus group discussions or by administering a survey. Faculty development needs should also be identified and planned. The following are examples of workshops that faculty will likely benefit from during the early stages of implementation: 1) overview of “Scholarship of Teaching” and how assessment activities can be documented through scholarship, 2) general principles of curriculum design (selection of appropriate outcomes, assessment methods, and instructional strategies); 3) general principles of assessment and evaluation; 4) introduction to outcomes assessment; and 5) how to use new and innovative assessment methods.

If it has not been done recently, the faculty should review the learning outcomes established for the professional program to assess whether they are consistent with the School/College mission and to clarify their meaning. The needs assessment should also determine the current level of assessment that is occurring within your School or College. For example, is any programmatic assessment occurring? Are any faculty members documenting learning outcomes at the end of their course (e.g., course-based assessment)? Is testing only occurring for making grade decisions (i.e., auditing) or are there ongoing informal assessments and dialogue between student and instructor about how well learning is going (i.e., assessment)?

The needs assessment should also include identifying sources of potential outcomes assessment data that may already be available and accessible within the optometry School or College. For example, you may locate information that will be needed in the admissions office and other student data in the academic affairs office. You may find other data of potential use in the alumni office, and the clerkship office. If student evaluations of teaching are not maintained in a centralized location, this should be recommended.

The needs assessment should also include establishing a priority for where to begin outcomes assessment activities. Outcomes assessments may be conducted at both the programmatic and individual course levels. Many schools and colleges will find it most practical to implement components as faculty support and involvement grows. For example, the following three-phase plan enables you to involve larger numbers of faculty members as outcomes assessment becomes accepted and part of the cul-
Improvement, and 4) an Evaluation plan for implementing strategies for really important to the faculty and the may not answer questions that are whether the process occurs in a time­

Learning outcomes are achieved and and steps that have not been implement­ed. Resources that will be needed to accomplish the activity (consultants, personnel, software) and a budget for meeting these needs should also be delineated.

Once the needs assessment is completed, a report should be prepared and presented to the faculty. By establishing priorities and a timetable, faculty members are less likely to feel overwhelmed with the tasks in front of them. The needs assessment also provides another opportunity to gain faculty support. Finally it provides foresight about the resources that will be needed to build a successful assessment program.

**Step 5: Establish a Comprehensive Assessment Plan**

A Comprehensive Assessment Plan (CAP) provides a “roadmap” for conducting outcomes assessment activities and ensures that questions answered assess whether the desired learning outcomes are achieved and whether the process occurs in a timely and systematic manner. Without such a “roadmap,” the data collected may not answer questions that are really important to the faculty and the data collection times may be missed. A CAP should outline: 1) Outcomes that will be measured, 2) Assessment methodology, 3) The person responsible for implementing strategies for Improvement, and 4) an Evaluation plan to determine the effectiveness of the Comprehensive Assessment Plan at certain intervals. The assessment methodology requires the most deliberation and should include: 1) questions or hypotheses that address issues such as whether students are achieving the learning outcomes, and if some students are not achieving the outcomes, the characteristics of this subset and how the curriculum can be improved to enhance their learning; 2) the assessment methods that will be used to measure each question (e.g., measures of actual performance, surveys, portfolios); 3) methodologies for answering each question/hypothesis and collecting assessment data; 4) benchmarks or standards that establish the desired level of performance; 5) time line for collecting, analyzing, and reporting data; 6) how the data will be analyzed and summarized; and 7) who will be responsible for completing each step of the plan.

This CAP drives the outcomes assessment process that is depicted as the outer circle in Figure 1. Note this is a continuous circle inferring that the outcomes assessment activities outlined in the plan should take place in an ongoing and systematic matter. Ideally, there should be an annual reporting of ongoing data results and this should take place early enough for faculty to implement changes each academic year.

A critical element in developing this plan is to have a curricular map that outlines for each course: 1) expected outcomes and objectives, 2) instructional strategies that are used to accomplish each outcome, and 3) the assessment methods used within each course to measure individual student performance. These elements are depicted as the triangles in Figure 1 and are the foundational components of curricular design. Mandin and Dauphinee have described a process for documenting learning outcomes and objectives so that they emphasize the “key features” of patient problems that are encountered in practice. Harden has recommended the steps involved in developing a curricular map and has shown the advantages of developing a computer-based map. Availability of a curricular map, as these papers have described, is essential once problems or weaknesses are revealed through outcomes assessments. It is necessary to determine where in the curriculum a given content is covered, how it is being taught, and how students are being assessed in order to recommend strategies for improvement.

Ewell has noted that many programs have been unsuccessful in getting assessment to make a difference because they were implemented in a piecemeal fashion and as a result, assessment did not become a part of the culture. Therefore, in order to successfully involve all faculty and students and also make assessment an integral part of teaching, the imple-
mentation should build support and involvement. For example, your optometry school or college could start out with outcomes assessment activities that initially involve only those faculty who want to see assessment make a difference yet, the activities will stimulate interest of the entire faculty.

Step 6: Establish an Electronic Database System

Tierney has noted that, in order to thrive in today's society, colleges and universities must learn how to identify and quickly implement strategies that will improve their quality and efficiency. Today's high-performance organizations are those that are able to quickly identify the need for improvement and implement changes. They have been able to accomplish this by implementing a systems approach that includes rapid access to data and a process for decision-making that quickly enables implementation of improvements. Seymour has contended that in order to achieve this, an organization must have a system in place that enables continuous measurement and collection of data.

With the advent of database software and easy access to web-based survey and course-software, the data collection process should become seamless and entirely electronic so that both the Director of Assessment and faculty members are not burdened with excessive procedures for data collection, input, and management. Welsh et al. have described development of a relational database that is interactive and links a variety of satisfaction surveys with student, alumni, faculty, and staff database at the University of Louisville. The system collects and organizes all data related to programs at the University and tracks changes in performance and attitudes overtime. Without such a system, most institutions collect data that only provides a "snapshot" of performance and attitudes at a single point. The structure of this database was designed based on each school or college's CAP.

There are several considerations when establishing a database for outcomes assessment. First, one must consider how data will be accumulated over time. Astin recommends creation of cohort files of students so that longitudinal analysis can be done with multiple years of students. Therefore, a second consideration is that the database needs to be soundly designed so that it will have structural integrity over a long period of time. An optometry school or college is building a "data warehouse" for outcomes assessment. Therefore, an individual who is certified in database design and management should be consulted to develop the program. Software such as Microsoft Access is sufficient for building a database, but software that can manage a larger amount of data may be needed after a number of years. A third consideration is related to security and confidentiality. Outcomes assessment involves making curricular decisions based on data from groups of students and should not involve inspection of individual student performance. Therefore, to maintain confidentiality the database should be designed so that the data cannot be linked to the individual student names. To achieve this, Astin recommends forming two independent data files. One contains data that identifies individual students and they are assigned a code so that longitudinal analyses can be accomplished. The second data file contains the assessment data in which individual students are coded according to the code assigned in the first file and only the code is used for all data analysis and summary procedures.

Step 7: Involve Individuals To Achieve Outcomes Assessment at All Levels.

Once a foundation of support, expertise, a plan, and resources are established, greater numbers of faculty members, staff, and students should become involved in assessment activities that will yield outcomes assessment data. An individual such as a director of assessment should be given responsibility to develop strategies that will involve greater numbers of individuals in the assessment activities.

Faculty should first be encouraged to ask questions about their teaching or a course that will identify areas for improvement. As outlined in the Core Principles in Table 1, the assessment results should not be used for faculty evaluation or should not put a faculty member at risk. Rather, faculty should be rewarded if they identify areas for improvement and successfully implement strategies that can enhance quality. Faculty members should also be rewarded if they integrate assessment strategies into courses they teach. Faculty should also understand how to accomplish assessment activities so that the process and results can be documented in a scholarly manner and therefore, demonstrate the Scholarship of Teaching. Glassick has outlined criteria that can guide a faculty member in documenting a teaching intervention such as assessment and achieve the Scholarship of Teaching. Fincher et al. have emphasized that the Scholarship of Teaching is promoted by administrative support, by availability of human resources, and by being valued politically (e.g., educator advocates on promotion and tenure committees) and symbolically (e.g., awards, topics are the focus of noon conferences). Each of these strategies can be applied to encourage faculty involvement in assessment.

In order to optimize faculty time available for assessment activities, some of the tasks can be successfully delegated to staff. For example, staff should be available to assist in using technology to collect and analyze assessment data.

Students can become involved by completing assessment as learning activities and by providing feedback about the quality of their learning experiences. Students need to be taught that assessment involves more than exams and grades if they are to be successfully involved. They will learn to value non-graded assessment activities (e.g., self and peer assessment strategies) if they see how their learning is enhanced by their participation. A key element to successful assessment-as-learning activities is rapid feedback from the instructors or evaluators.

Students should also be taught that the optometry school or college is using assessment data to improve program quality, and that their involvement is essential. Student representatives who serve on curriculum and assessment committees should be involved in assessment planning and reporting. Again, students will be motivated to participate and provide quality feedback in outcomes assessment activities if they receive timely feedback about the results and how the findings are being used to improve the program. This process can also be used to foster the value of continuous quality improvement within one's
future practice as an optometrist.

Step 8: Enable Assessment To Become Self-Sustaining

An assessment program will become self-sustaining if it is successfully integrated into the school "fabric" and "makes a difference." In order to make a difference, the assessment program itself must be evaluated at certain intervals. In these evaluations, a judgment must be made as to whether the CAP is working or improving student learning as initially envisioned. If it is not, the CAP should be revised to improve the process. It is very likely that as an assessment program evolves and matures, the questions and issues about student learning will change and the CAP needs to be revised accordingly.

A key marker of a "systematic" outcomes assessment program is providing faculty with outcomes assessment reports that enable them to implement curricular improvements before the next academic year. Achievement of these improvements will require a streamlined approach for collecting, interpreting, and reporting assessment data. As the program matures, assessment should become even more embedded within student learning activities and these results may be used as outcomes assessment data. At this point, assessment will have become a "fabric" of the institutional culture.

Conclusions

Although mandates from accrediting bodies and policy makers initiated outcomes assessment as a means for accountability, enhanced student learning is more likely to be achieved if faculty members adopt it as a personal responsibility for sustaining excellence in their teaching. To achieve this endpoint, optometry schools and colleges must move assessment from being perceived as an "innovation or initiative" to becoming an integral part of the institutional culture.

Note

An appendix, Example Roles and Responsibilities for the Director of Assessment, can be obtained by contacting Dr. Beck at beckdia@auburn.edu

References

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